

FCC 15.407 2015

DUT Information

Frequencies

WLAN CH 36 (5180 MHz)	WLAN CH 40 (5200 MHz)	WLAN CH 48 (5240 MHz)
WLAN CH 149 (5745 MHz)	WLAN CH 157 (5785 MHz)	WLAN CH 165 (5825 MHz)
WLAN CH 52 (5260 MHz)	WLAN CH 56 (5280 MHz)	WLAN CH 64 (5320 MHz)
WLAN CH 100 (5500 MHz)	WLAN CH 120 (5600 MHz)	WLAN CH 140 (5700 MHz)
WLAN CH 116 (5580 MHz)	WLAN CH 151 (5755 MHz)	WLAN CH 159 (5795 MHz)
WLAN CH 155 (5775 MHz)		

Bandwidths

20 MHz (20 MHz)	40 MHz (40 MHz)	80 MHz (80 MHz)
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Power

20.000 dBm (20 dBm)

Beamforming Gain

20.000 dBm (20 dBm)	0 dB
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Gain Tables

20.000 dBm (20 dBm)	Port 1: 0dBi;
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DUT Settings

No. of transmission chains	1
DFS capability	Yes
DFS Mode	Master
Equipment Type	Portable
TPC	No

Hardware Setup: WMS Measurements\TS8997

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40
Vector Generator:	VG SMBV100A (VG SMBV100A) @ VISA (ADR TCPIP::192.168.48.25::INST0::INSTR), SN 260451, FW 4.15.125.49
Generator:	SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015
OSP:	OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Emission Bandwidth 26 dB	5180.000	20.0	20.000000	PASS
RF output power	5180.000	20.0	20.000000	PASS
Power Spectral Density	5180.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	5180.000	20.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5180.000	20.0	20.000000	PASS
Band Edge low	5180.000	20.0	20.000000	PASS
Emission Bandwidth 26 dB	5200.000	20.0	20.000000	PASS
RF output power	5200.000	20.0	20.000000	PASS
Power Spectral Density	5200.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	5200.000	20.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5200.000	20.0	20.000000	PASS
Emission Bandwidth 26 dB	5240.000	20.0	20.000000	PASS
RF output power	5240.000	20.0	20.000000	PASS
Power Spectral Density	5240.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	5240.000	20.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5240.000	20.0	20.000000	PASS
Band Edge high	5240.000	20.0	20.000000	PASS

Emission Bandwidth 26 dB (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

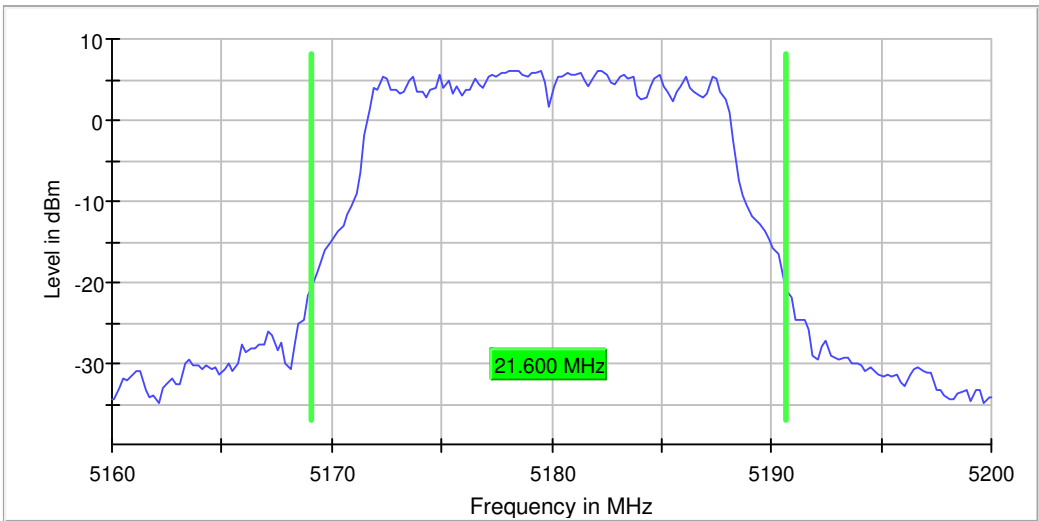
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

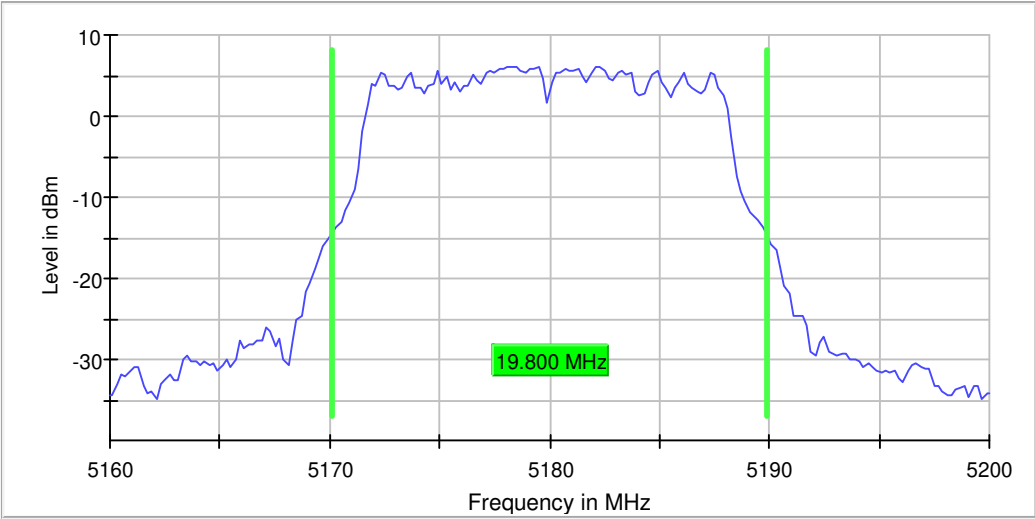
26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	21.600000	---	---	5169.100000	5190.700000

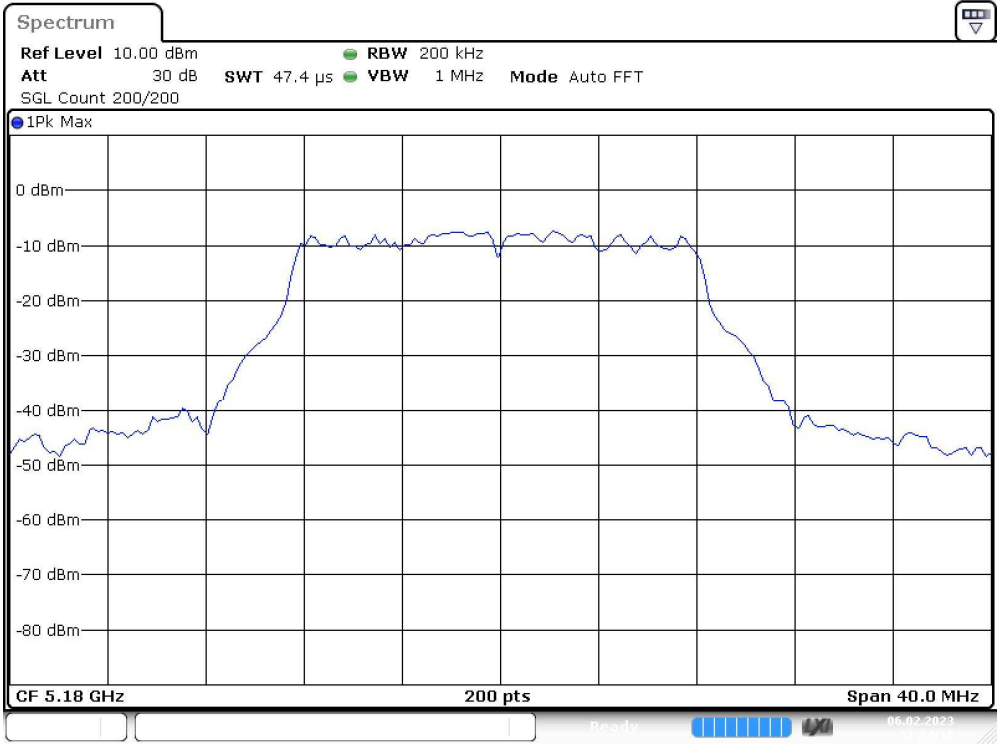
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5180.000000	6.2	PASS





Bandwidth



Date: 6.FEB.2023 11:34:14

Measurement

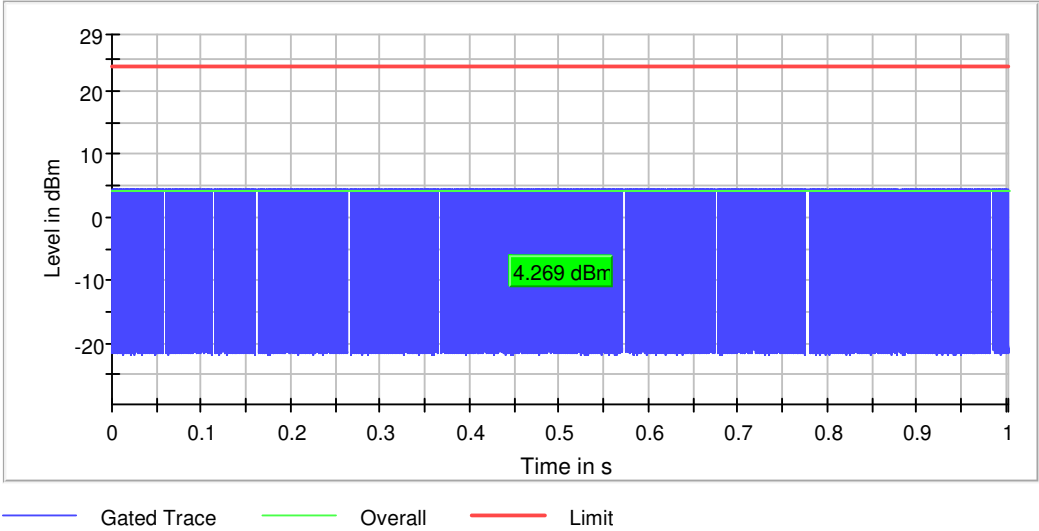
Setting	Instrument Value	Target Value
Start Frequency	5.16000 GHz	5.16000 GHz
Stop Frequency	5.20000 GHz	5.20000 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	~ 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 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
Stablemode	Trace	Trace
Stablevalue	1.00 dB	1.00 dB
Run	6 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.71 dB	1.00 dB

RF output power (5180 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5180.000000	4.3	24.0	4.3	99.860	PASS



Power Spectral Density (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

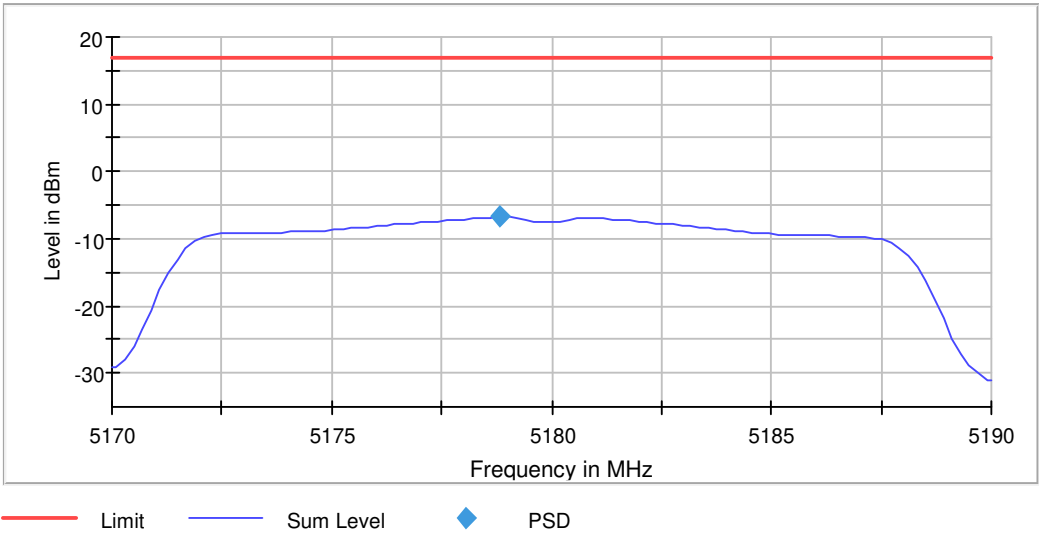
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5180.000000	5178.811881	-6.763	17.0	PASS

Ports

Port	Duty Cycle (%)
1	97.232



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 s	2.020 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB

Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.02 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

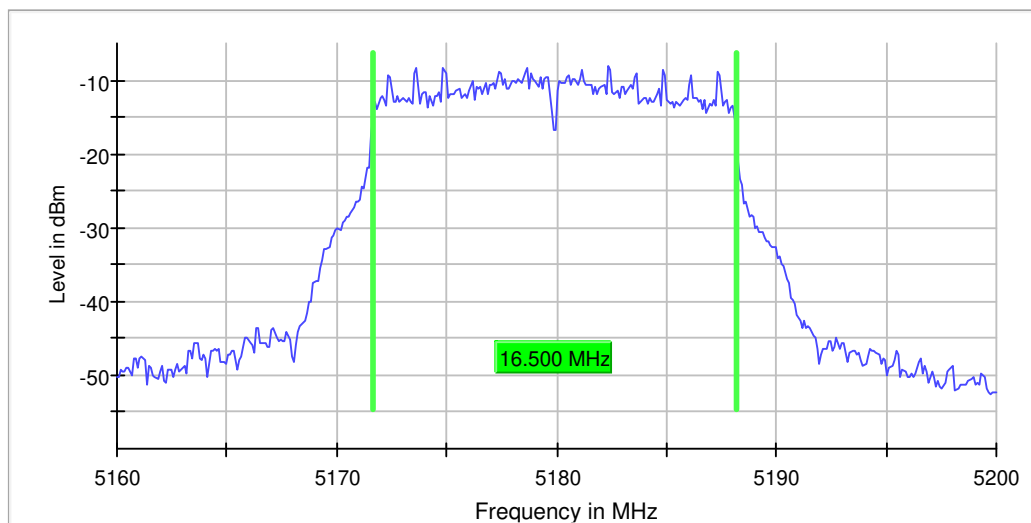
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	16.500000	---	---	5171.650000	5188.150000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5180.000000	-8.2	PASS



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	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	400	~ 400
Sweeptime	94.810 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	9 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.13 dB	0.30 dB

Occupied Channel Bandwidth 99% (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

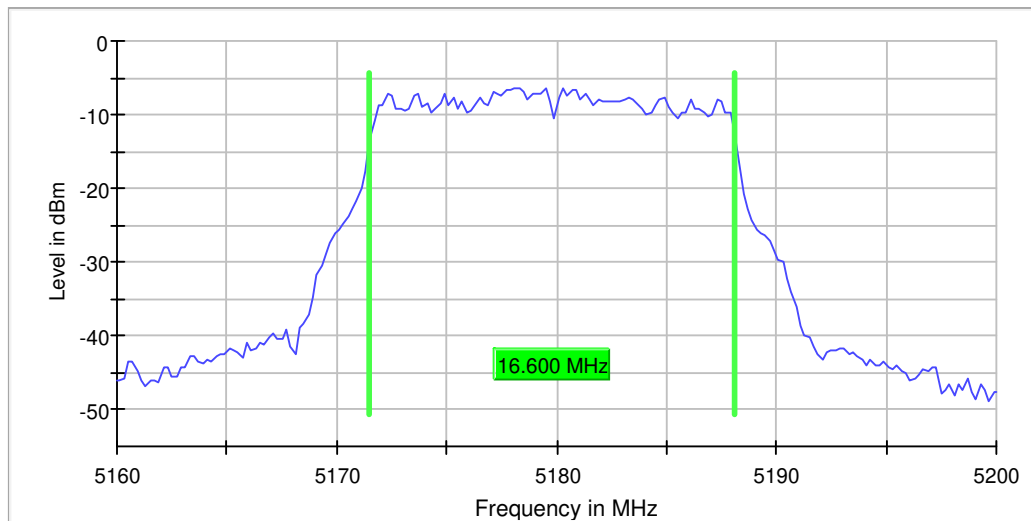
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	16.600000	---	---	5171.500000	5188.100000

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

DUT Frequency (MHz)	Result
5180.000000	PASS



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	<= 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	8 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.14 dB	0.30 dB

Band Edge low (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

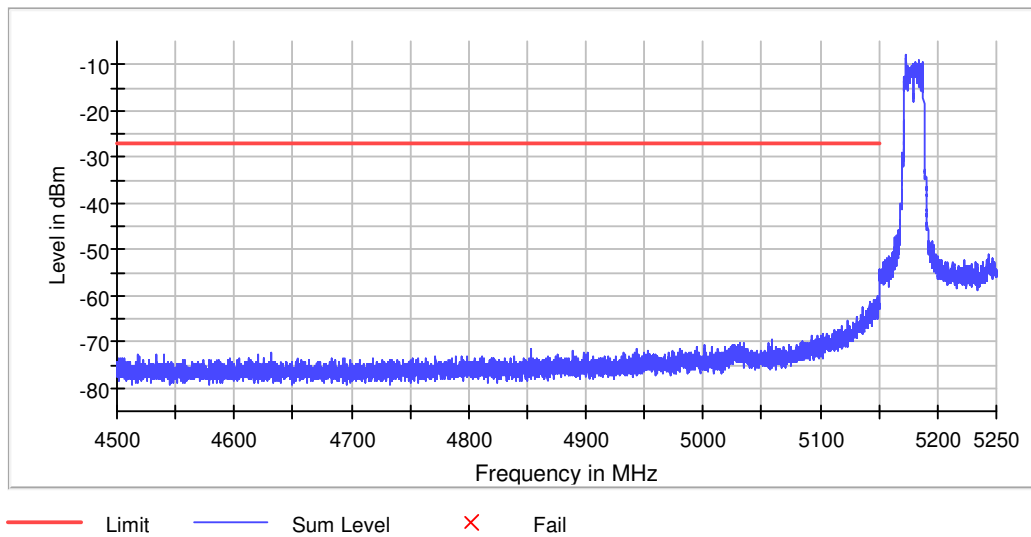
DUT Frequency (MHz)	Result
5180.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
5173.625000	-8.0

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
5149.225000	-60.1	33.1	-27.0	PASS
5149.175000	-60.2	33.2	-27.0	PASS
5149.375000	-60.5	33.5	-27.0	PASS
5149.625000	-60.8	33.8	-27.0	PASS
5147.725000	-60.8	33.8	-27.0	PASS
5149.325000	-60.8	33.8	-27.0	PASS
5149.575000	-60.9	33.9	-27.0	PASS
5145.675000	-61.0	34.0	-27.0	PASS
5148.225000	-61.2	34.2	-27.0	PASS
5142.675000	-61.3	34.3	-27.0	PASS
5149.275000	-61.3	34.3	-27.0	PASS
5145.725000	-61.4	34.4	-27.0	PASS
5148.075000	-61.5	34.5	-27.0	PASS
5148.275000	-61.5	34.5	-27.0	PASS
5149.975000	-61.5	34.5	-27.0	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.25000 GHz	5.25000 GHz
Span	100.000 MHz	100.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	2000	~ 2000
SweepTime	227.813 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	1 / max. 1	max. 1
Stable	0 / 1	1
Max Stable Difference	0.00 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	4.50000 GHz	4.50000 GHz
Stop Frequency	5.15000 GHz	5.15000 GHz
Span	650.000 MHz	650.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	13000	~ 13000
SweepTime	13.000 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	1 / max. 1	max. 1
Stable	0 / 1	1
Max Stable Difference	0.00 dB	0.50 dB

Emission Bandwidth 26 dB (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

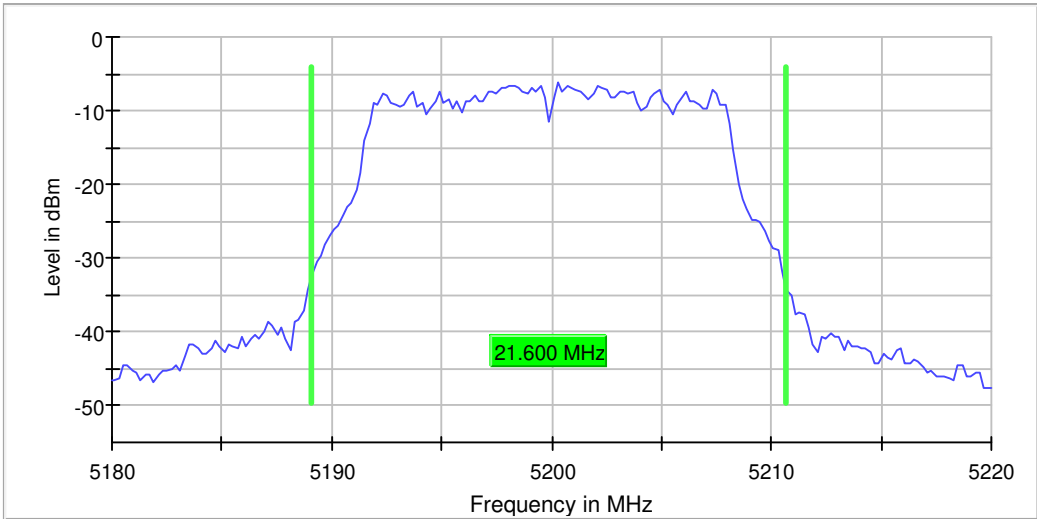
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

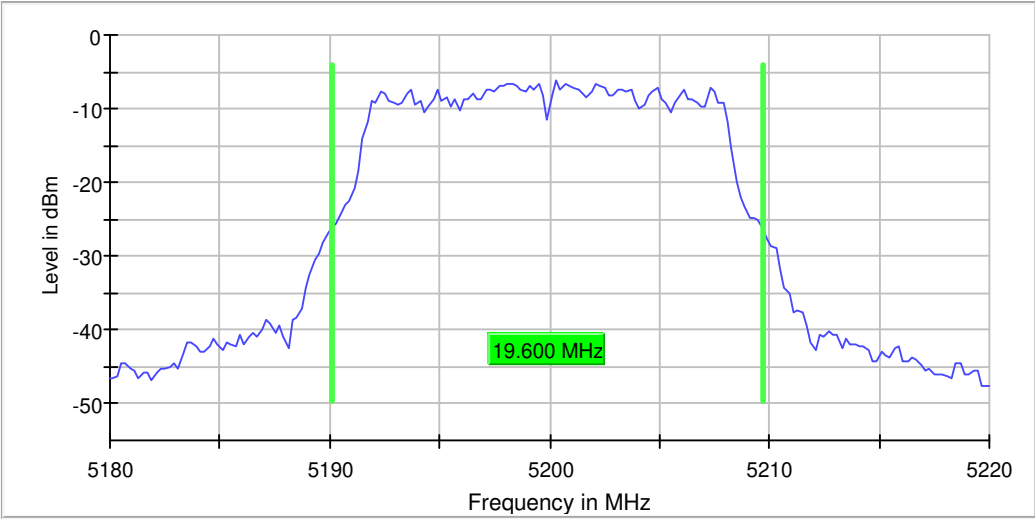
26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5200.000000	21.600000	---	---	5189.100000	5210.700000

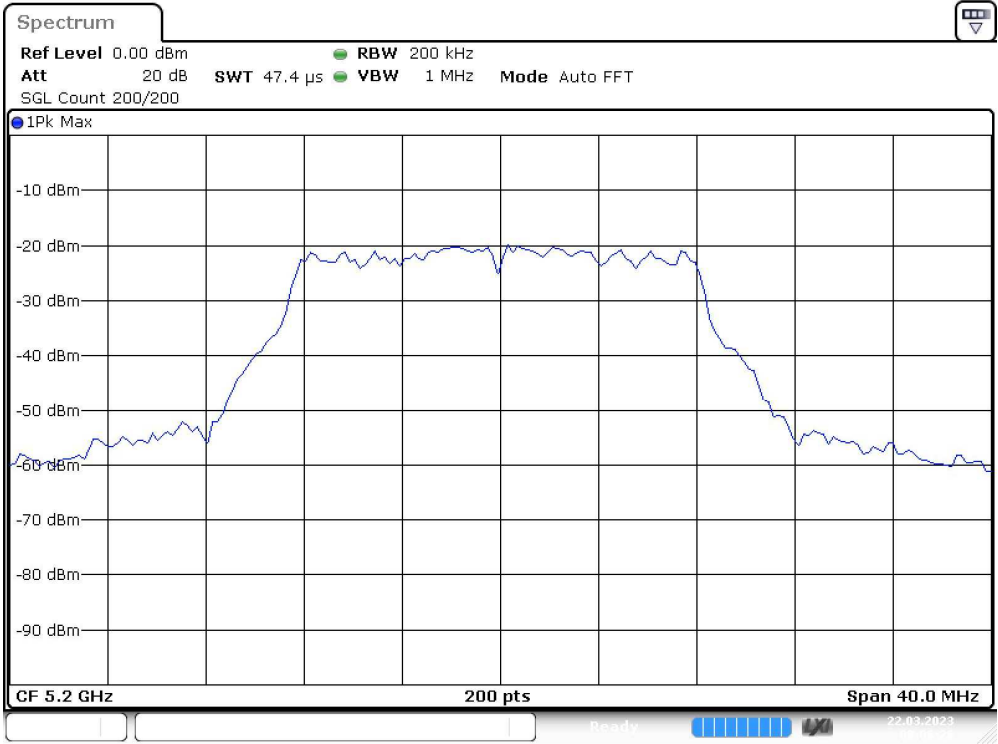
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5200.000000	-6.2	PASS





Bandwidth



Date: 22.MAR.2023 08:06:26

Measurement

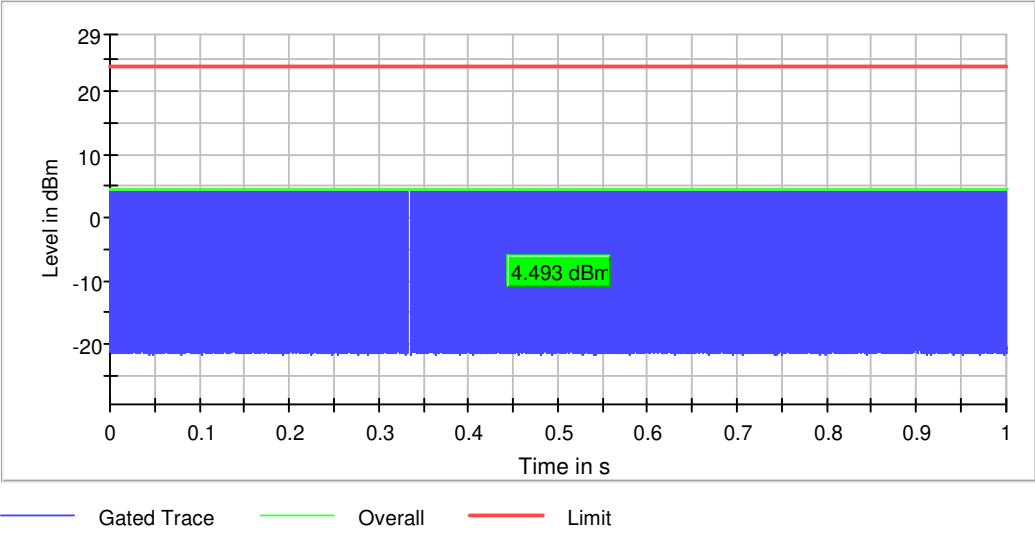
Setting	Instrument Value	Target Value
Start Frequency	5.18000 GHz	5.18000 GHz
Stop Frequency	5.22000 GHz	5.22000 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	~ 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	9 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.24 dB	0.30 dB

RF output power (5200 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5200.000000	4.5	24.0	4.5	99.664	PASS



Power Spectral Density (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

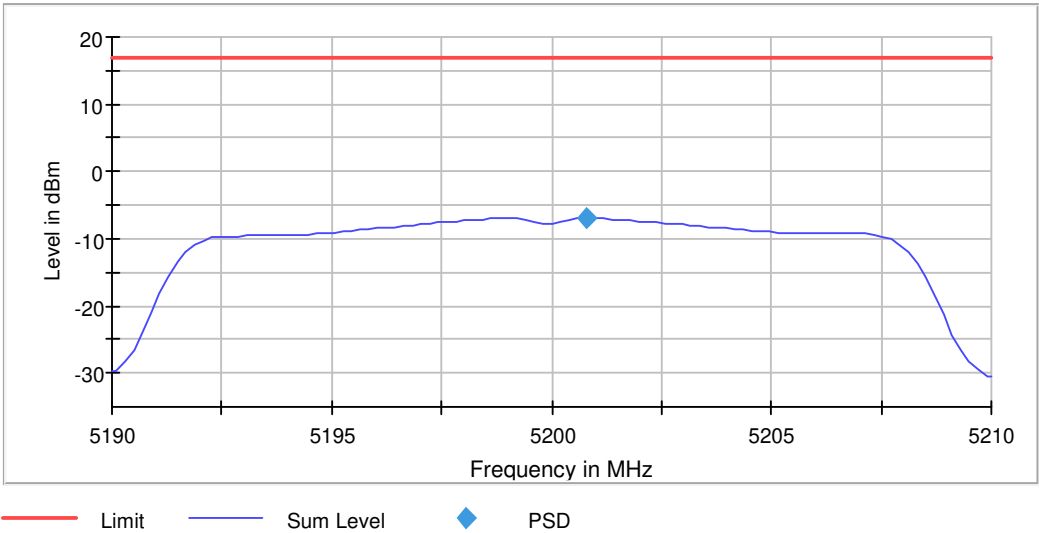
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5200.000000	5200.792079	-6.921	17.0	PASS

Ports

Port	Duty Cycle (%)
1	97.233



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.19000 GHz	5.19000 GHz
Stop Frequency	5.21000 GHz	5.21000 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 s	2.020 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB

Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.01 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

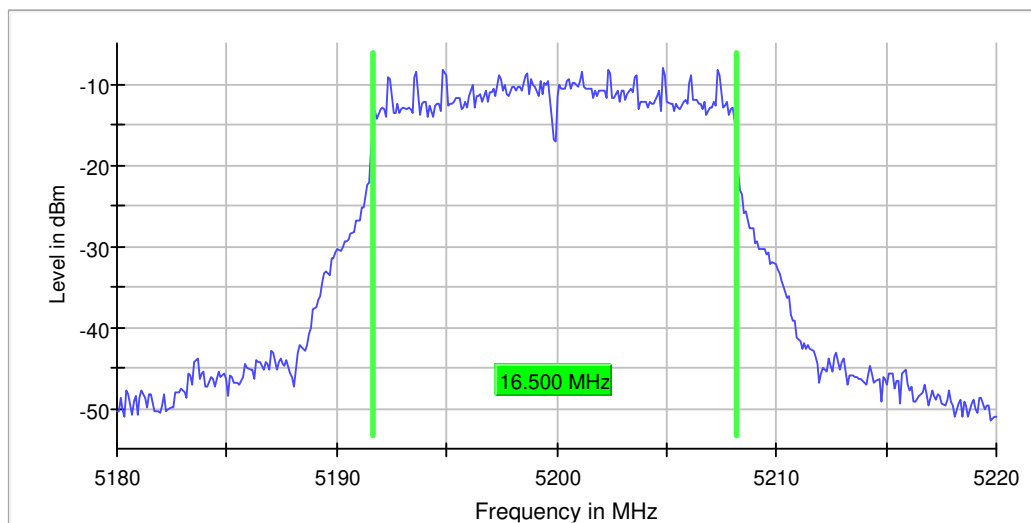
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5200.000000	16.500000	---	---	5191.650000	5208.150000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5200.000000	-8.1	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.18000 GHz	5.18000 GHz
Stop Frequency	5.22000 GHz	5.22000 GHz
Span	40.000 MHz	40.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	400	~ 400
Sweeptime	94.810 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	10 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.17 dB	0.30 dB

Occupied Channel Bandwidth 99% (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

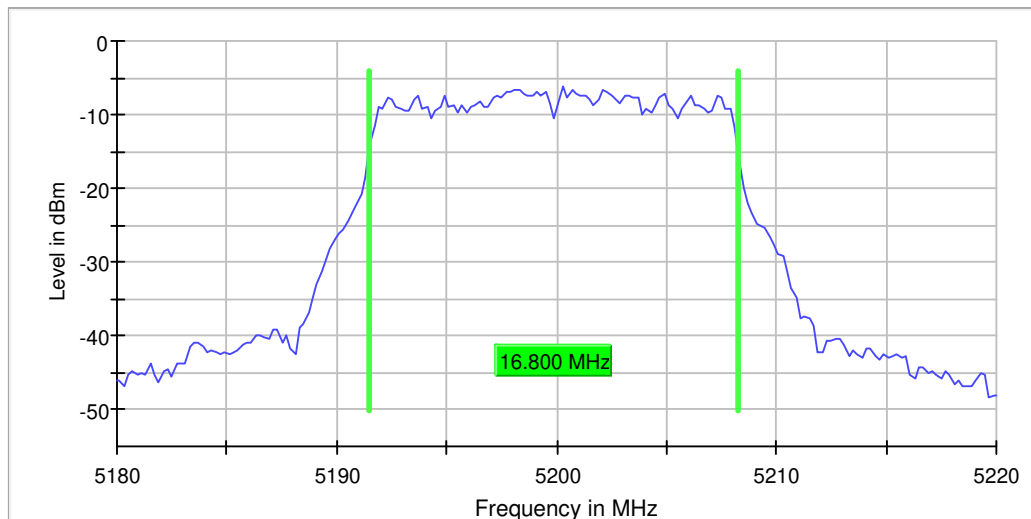
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5200.000000	16.800000	---	---	5191.500000	5208.300000

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

DUT Frequency (MHz)	Result
5200.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.18000 GHz	5.18000 GHz
Stop Frequency	5.22000 GHz	5.22000 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	<= 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	11 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.27 dB	0.30 dB

Emission Bandwidth 26 dB (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

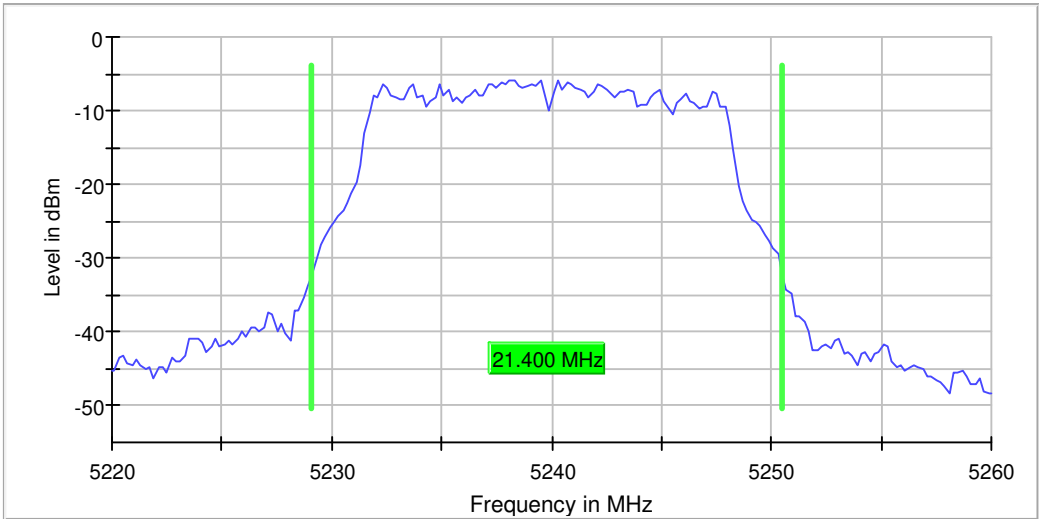
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

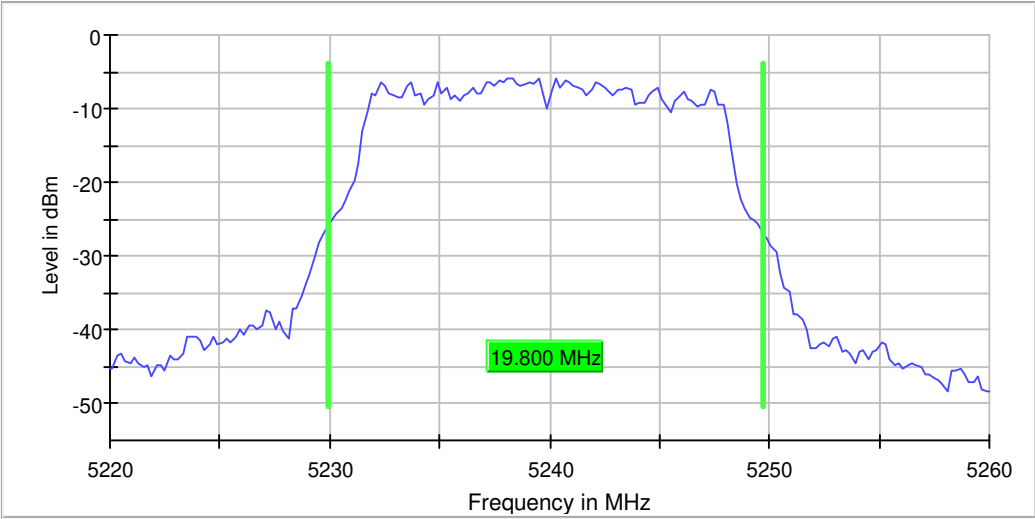
26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	21.400000	---	---	5229.100000	5250.500000

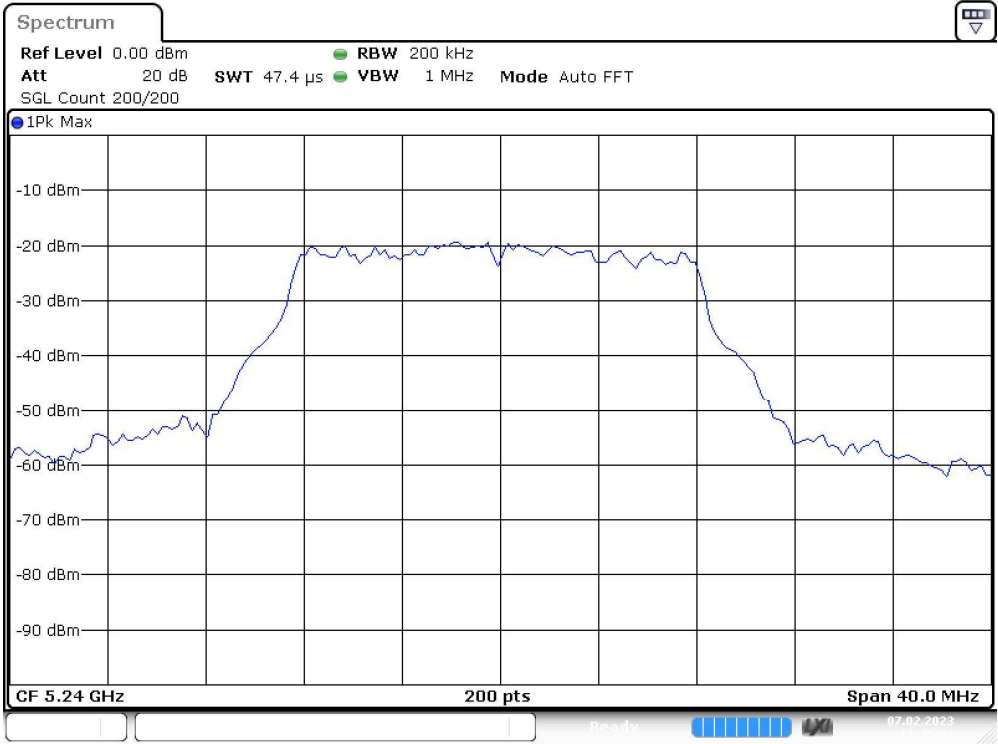
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5240.000000	-5.8	PASS





Bandwidth



Date: 7.FEB.2023 11:45:03

Measurement

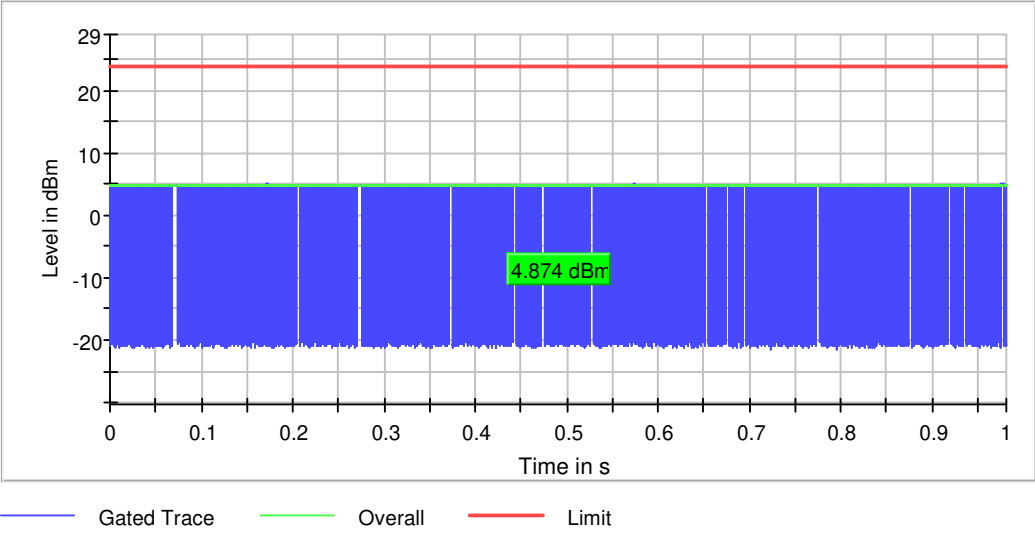
Setting	Instrument Value	Target Value
Start Frequency	5.22000 GHz	5.22000 GHz
Stop Frequency	5.26000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	~ 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
Sweeptime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	8 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.13 dB	0.30 dB

RF output power (5240 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5240.000000	4.9	24.0	4.9	97.919	PASS



Power Spectral Density (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

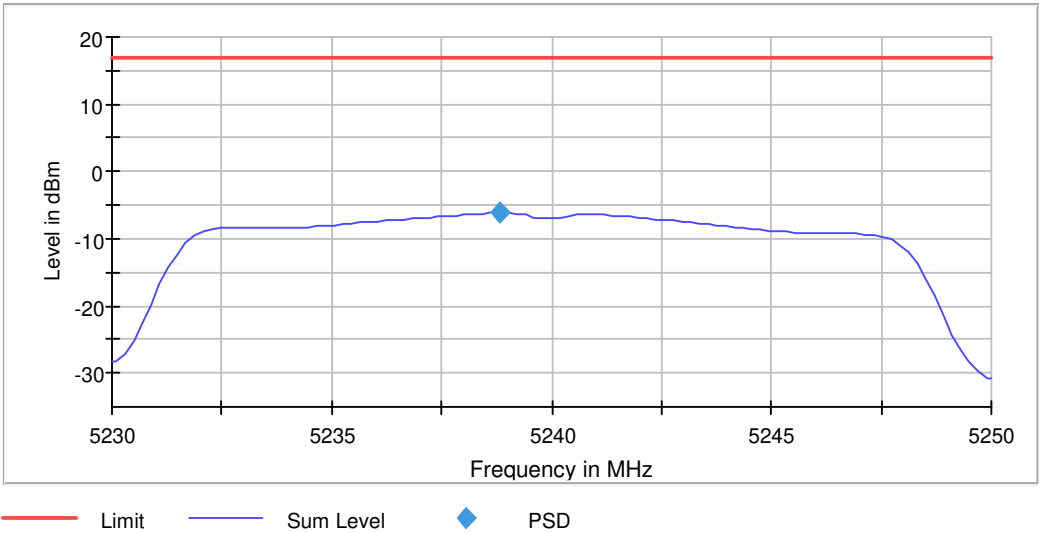
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5240.000000	5238.811881	-6.132	17.0	PASS

Ports

Port	Duty Cycle (%)
1	97.234



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 s	2.020 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB

Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.03 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

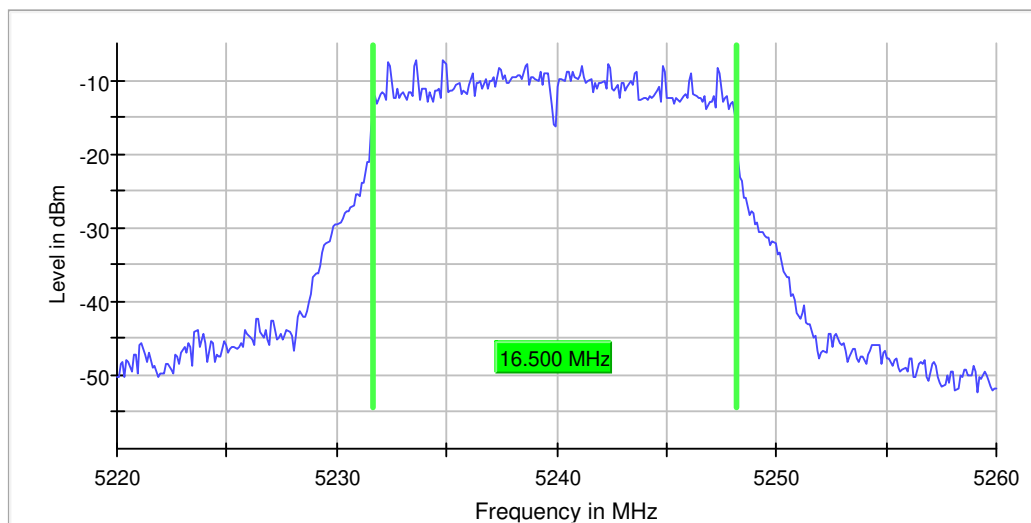
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	16.500000	---	---	5231.650000	5248.150000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5240.000000	-7.2	PASS



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	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	400	~ 400
Sweeptime	94.810 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	8 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.19 dB	0.30 dB

Occupied Channel Bandwidth 99% (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

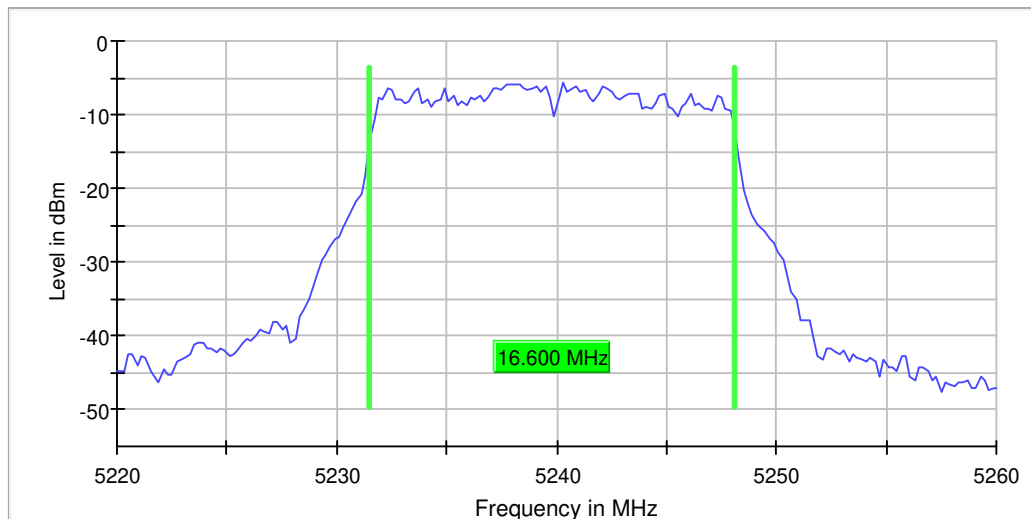
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	16.600000	---	---	5231.500000	5248.100000

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

DUT Frequency (MHz)	Result
5240.000000	PASS



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	200.000 kHz	<= 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	10 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.19 dB	0.30 dB

Band Edge high (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

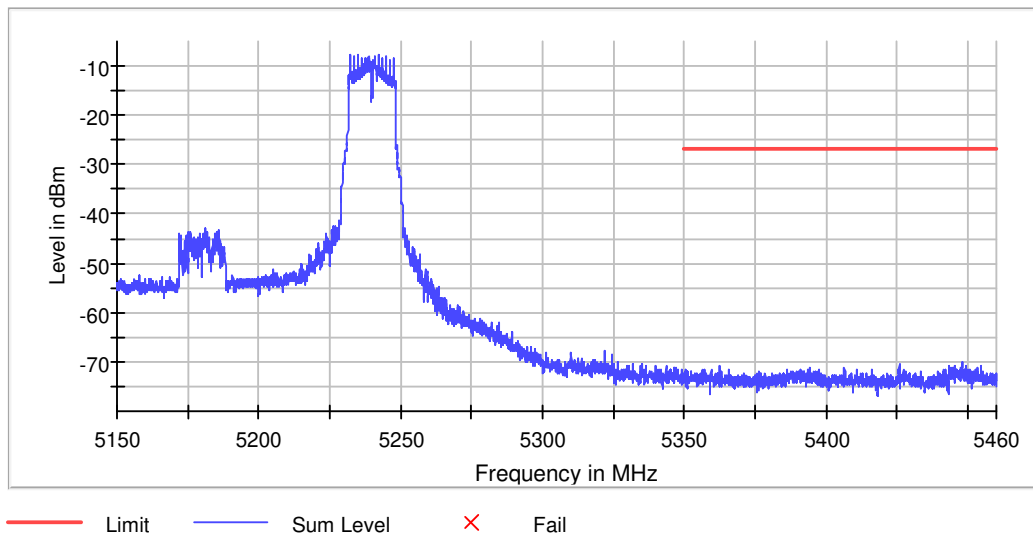
DUT Frequency (MHz)	Result
5240.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
5234.875000	-7.6

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
5447.825000	-70.2	43.2	-27.0	PASS
5425.825000	-70.6	43.6	-27.0	PASS
5449.525000	-70.6	43.6	-27.0	PASS
5447.775000	-70.6	43.6	-27.0	PASS
5454.875000	-70.8	43.8	-27.0	PASS
5454.925000	-70.8	43.8	-27.0	PASS
5443.525000	-70.9	43.9	-27.0	PASS
5445.675000	-70.9	43.9	-27.0	PASS
5362.325000	-70.9	43.9	-27.0	PASS
5449.575000	-71.0	44.0	-27.0	PASS
5444.525000	-71.1	44.1	-27.0	PASS
5453.375000	-71.1	44.1	-27.0	PASS
5444.575000	-71.1	44.1	-27.0	PASS
5406.525000	-71.2	44.2	-27.0	PASS
5443.925000	-71.2	44.2	-27.0	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.25000 GHz	5.25000 GHz
Span	100.000 MHz	100.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	2000	~ 2000
SweepTime	227.813 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	14 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.25 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	5.25000 GHz	5.25000 GHz
Stop Frequency	5.46000 GHz	5.46000 GHz
Span	210.000 MHz	210.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	4200	~ 4200
SweepTime	474.609 μ s	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.22 dB	0.50 dB

FCC 15.407 2015

DUT Information

Frequencies

WLAN CH 36 (5180 MHz)	WLAN CH 40 (5200 MHz)	WLAN CH 48 (5240 MHz)
WLAN CH 149 (5745 MHz)	WLAN CH 157 (5785 MHz)	WLAN CH 165 (5825 MHz)
WLAN CH 52 (5260 MHz)	WLAN CH 56 (5280 MHz)	WLAN CH 64 (5320 MHz)
WLAN CH 100 (5500 MHz)	WLAN CH 120 (5600 MHz)	WLAN CH 140 (5700 MHz)
WLAN CH 116 (5580 MHz)	WLAN CH 151 (5755 MHz)	WLAN CH 159 (5795 MHz)
WLAN CH 155 (5775 MHz)		

Bandwidths

20 MHz (20 MHz)	40 MHz (40 MHz)	80 MHz (80 MHz)
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Power

20.000 dBm (20 dBm)

Beamforming Gain

20.000 dBm (20 dBm)	0 dB
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Gain Tables

20.000 dBm (20 dBm)	Port 1: 0dBi;
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DUT Settings

No. of transmission chains	1
DFS capability	Yes
DFS Mode	Master
Equipment Type	Portable
TPC	No

Hardware Setup: WMS Measurements\TS8997

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40
Vector Generator:	VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33
Generator:	SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015
OSP:	OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Emission Bandwidth 26 dB	5180.000	20.0	20.000000	PASS
RF output power	5180.000	20.0	20.000000	PASS
Power Spectral Density	5180.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	5180.000	20.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5180.000	20.0	20.000000	PASS
Band Edge low	5180.000	20.0	20.000000	PASS
Emission Bandwidth 26 dB	5200.000	20.0	20.000000	PASS
RF output power	5200.000	20.0	20.000000	PASS
Power Spectral Density	5200.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	5200.000	20.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5200.000	20.0	20.000000	PASS
Emission Bandwidth 26 dB	5240.000	20.0	20.000000	PASS
RF output power	5240.000	20.0	20.000000	PASS
Power Spectral Density	5240.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	5240.000	20.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5240.000	20.0	20.000000	PASS
Band Edge high	5240.000	20.0	20.000000	PASS

Emission Bandwidth 26 dB (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

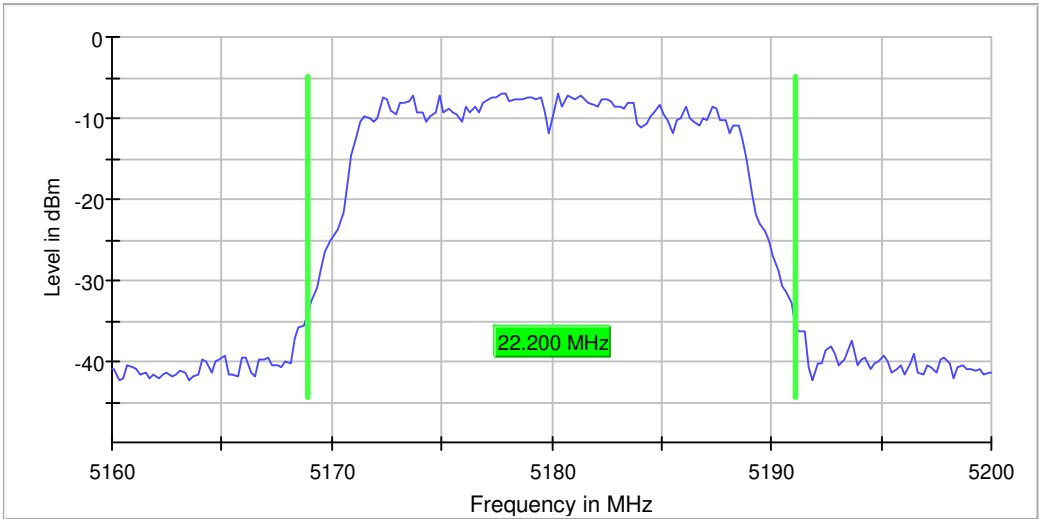
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

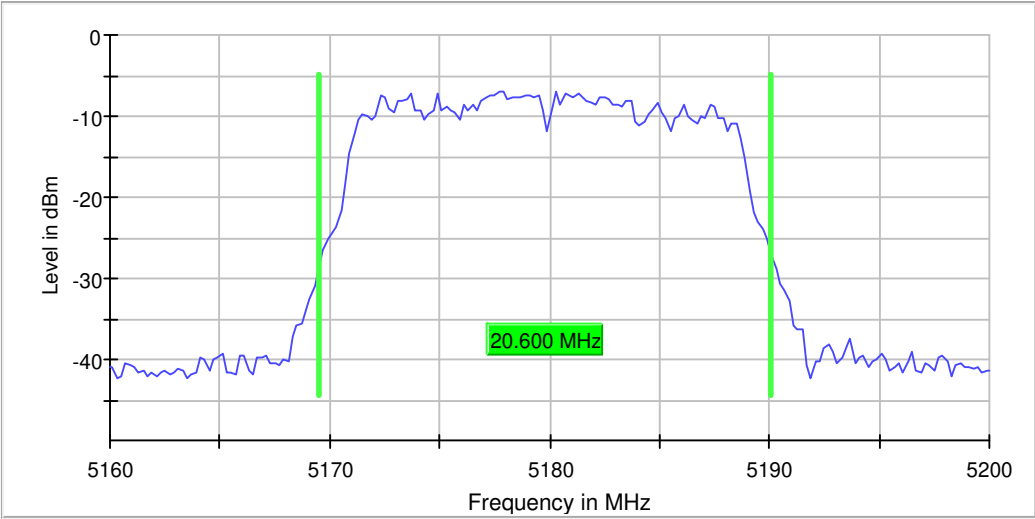
26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	22.200000	---	---	5168.900000	5191.100000

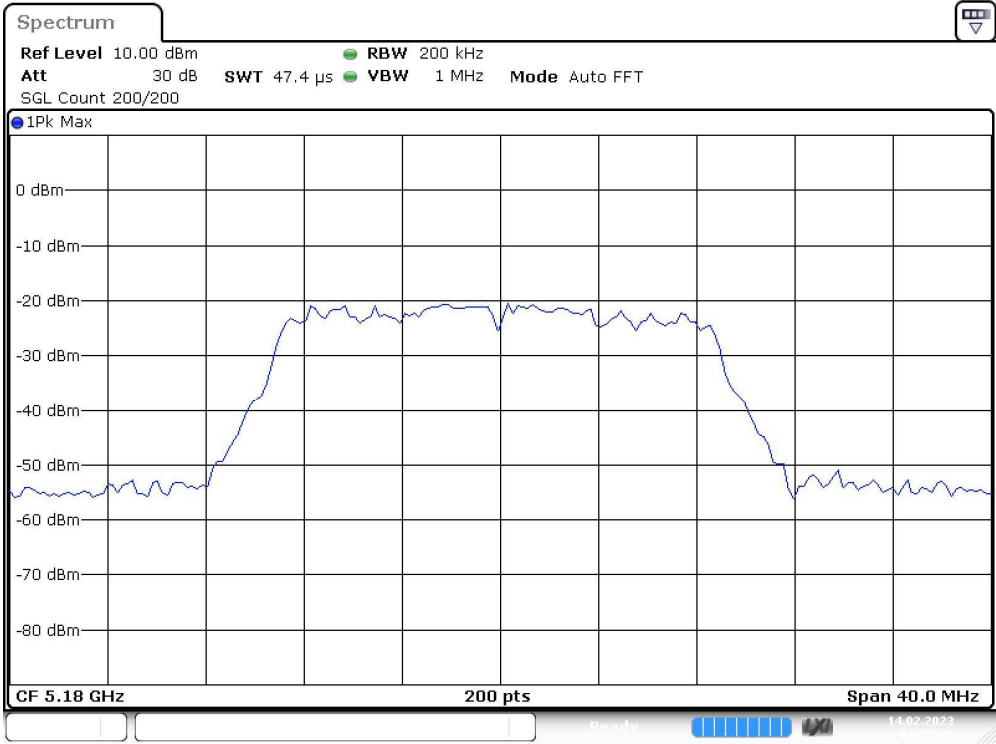
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5180.000000	-6.9	PASS





Bandwidth



Date: 14.FEB.2023 07:55:24

Measurement

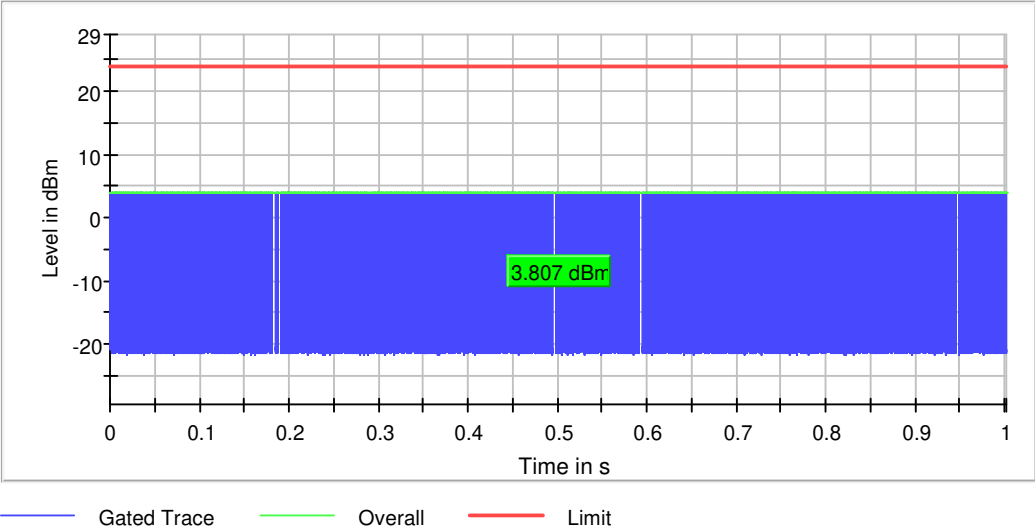
Setting	Instrument Value	Target Value
Start Frequency	5.16000 GHz	5.16000 GHz
Stop Frequency	5.20000 GHz	5.20000 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	~ 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 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
Stablemode	Trace	Trace
Stablevalue	1.00 dB	1.00 dB
Run	6 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.89 dB	1.00 dB

RF output power (5180 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5180.000000	3.8	24.0	3.8	99.661	PASS



Power Spectral Density (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

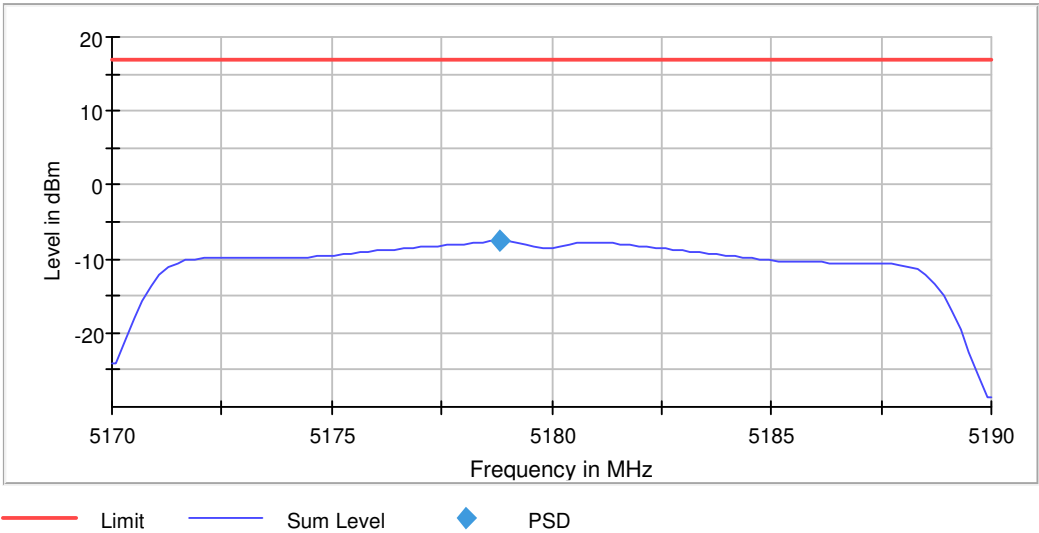
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5180.000000	5178.811881	-7.600	17.0	PASS

Ports

Port	Duty Cycle (%)
1	97.072



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 s	2.020 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB

Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.05 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

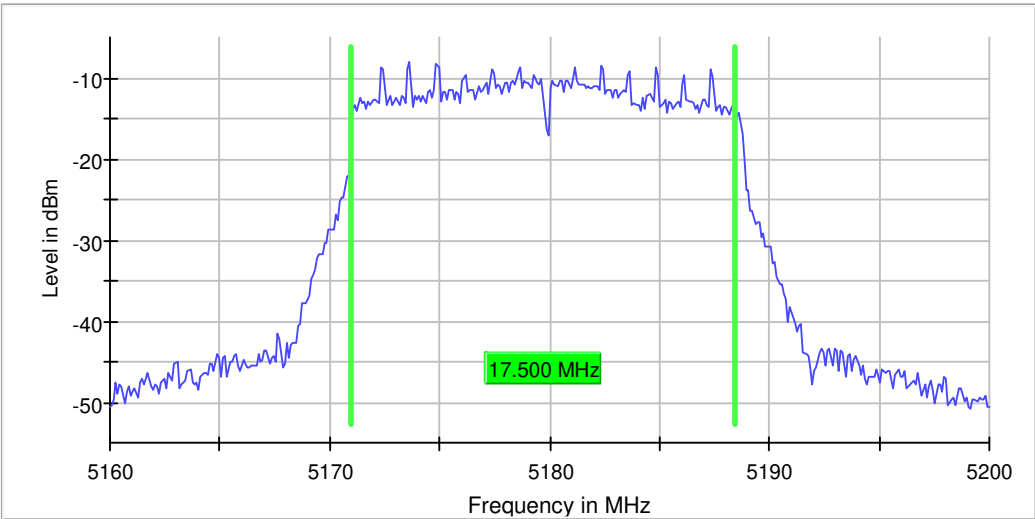
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	17.500000	---	---	5170.950000	5188.450000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5180.000000	-8.1	PASS



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	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	400	~ 400
Sweeptime	94.810 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	20 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.29 dB	0.30 dB

Occupied Channel Bandwidth 99% (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

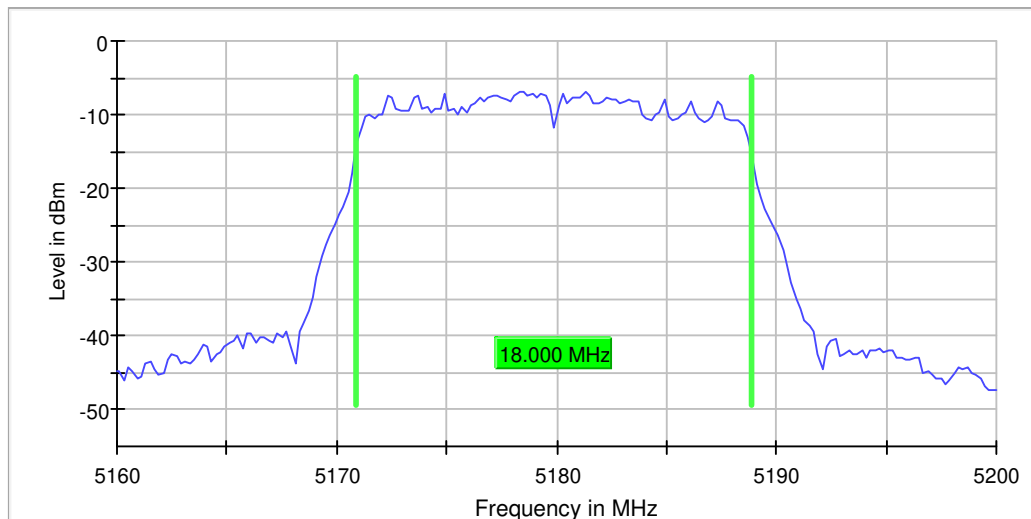
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	18.000000	---	---	5170.900000	5188.900000

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

DUT Frequency (MHz)	Result
5180.000000	PASS



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	<= 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	9 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.26 dB	0.30 dB

Band Edge low (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

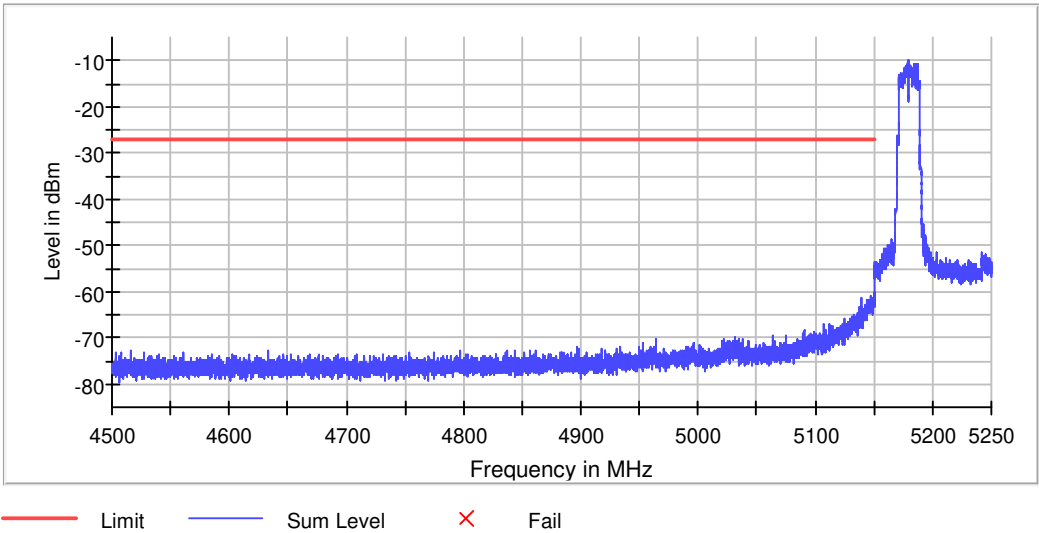
DUT Frequency (MHz)	Result
5180.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
5178.575000	-9.9

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
5149.925000	-60.0	33.0	-27.0	PASS
5149.875000	-60.5	33.5	-27.0	PASS
5147.425000	-61.0	34.0	-27.0	PASS
5147.375000	-61.1	34.1	-27.0	PASS
5149.475000	-61.1	34.1	-27.0	PASS
5149.675000	-61.3	34.3	-27.0	PASS
5138.575000	-61.4	34.4	-27.0	PASS
5149.525000	-61.4	34.4	-27.0	PASS
5145.175000	-61.5	34.5	-27.0	PASS
5147.925000	-61.6	34.6	-27.0	PASS
5144.275000	-61.6	34.6	-27.0	PASS
5144.225000	-61.6	34.6	-27.0	PASS
5149.725000	-61.6	34.6	-27.0	PASS
5149.625000	-61.7	34.7	-27.0	PASS
5145.225000	-61.8	34.8	-27.0	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.25000 GHz	5.25000 GHz
Span	100.000 MHz	100.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	2000	~ 2000
SweepTime	227.813 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	1 / max. 1	max. 1
Stable	0 / 1	1
Max Stable Difference	0.00 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	4.50000 GHz	4.50000 GHz
Stop Frequency	5.15000 GHz	5.15000 GHz
Span	650.000 MHz	650.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	13000	~ 13000
SweepTime	13.000 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	1 / max. 1	max. 1
Stable	0 / 1	1
Max Stable Difference	0.00 dB	0.50 dB

Emission Bandwidth 26 dB (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

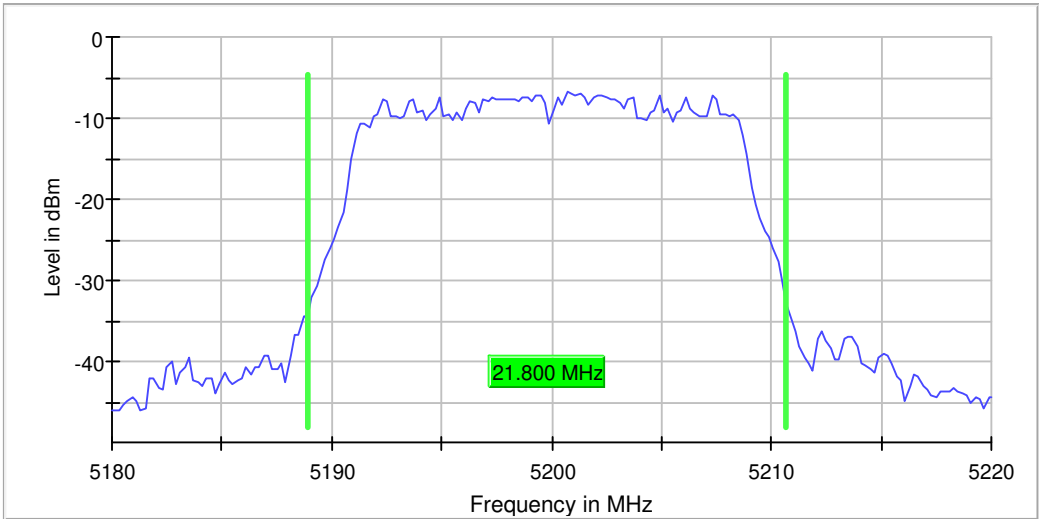
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

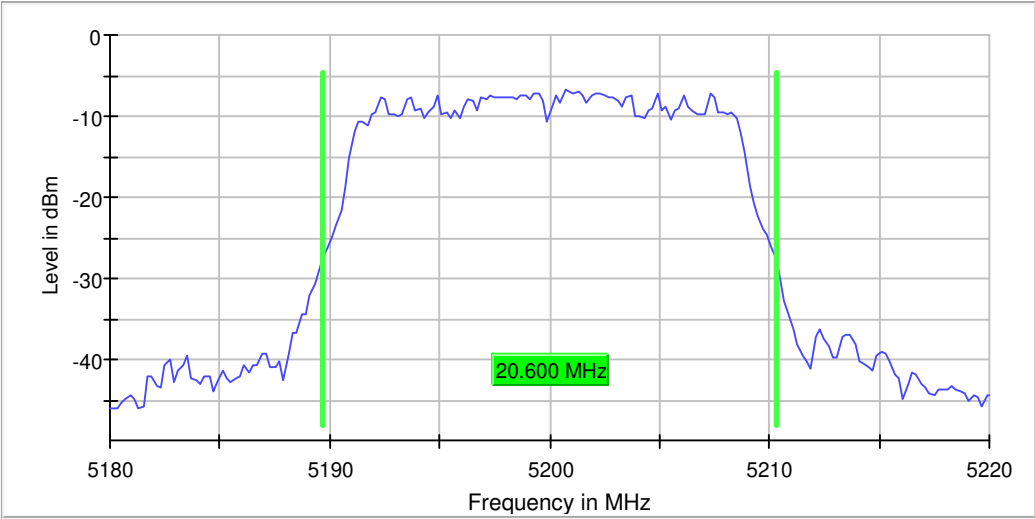
26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5200.000000	21.800000	---	---	5188.900000	5210.700000

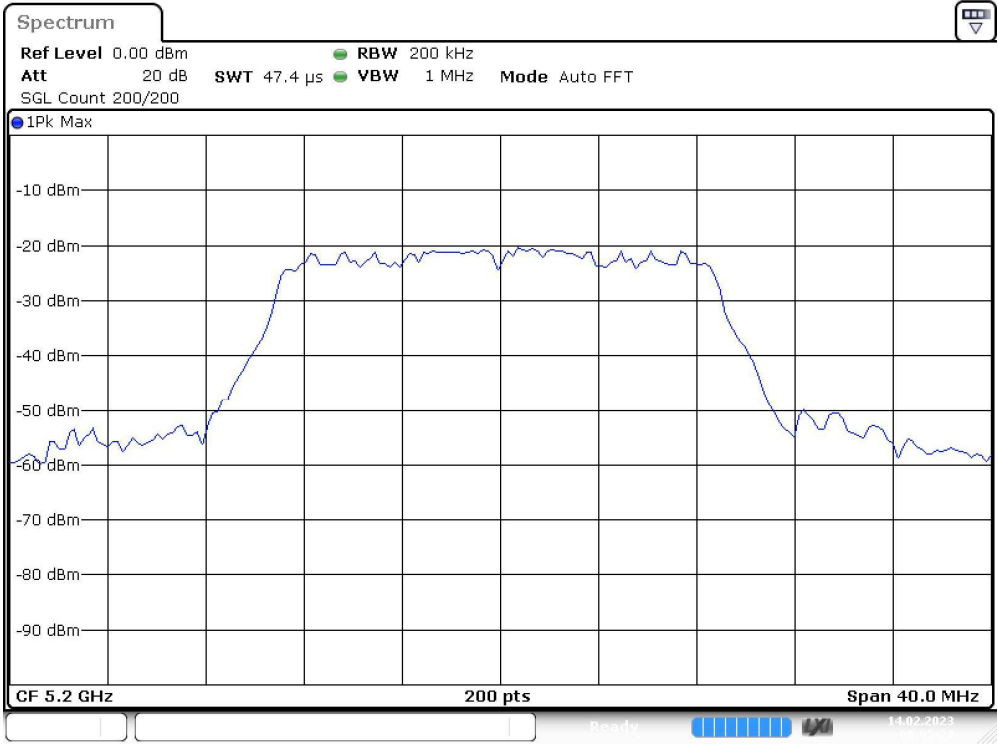
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5200.000000	-6.7	PASS





Bandwidth



Date: 14.FEB.2023 08:05:24

Measurement

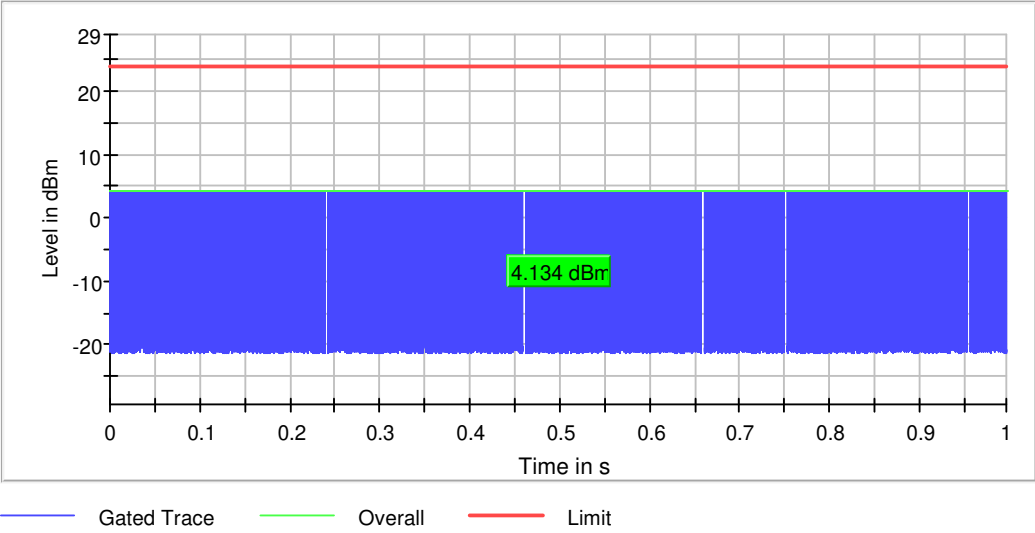
Setting	Instrument Value	Target Value
Start Frequency	5.18000 GHz	5.18000 GHz
Stop Frequency	5.22000 GHz	5.22000 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	~ 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
Sweeptime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	12 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.17 dB	0.30 dB

RF output power (5200 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5200.000000	4.1	24.0	4.1	99.007	PASS



Power Spectral Density (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

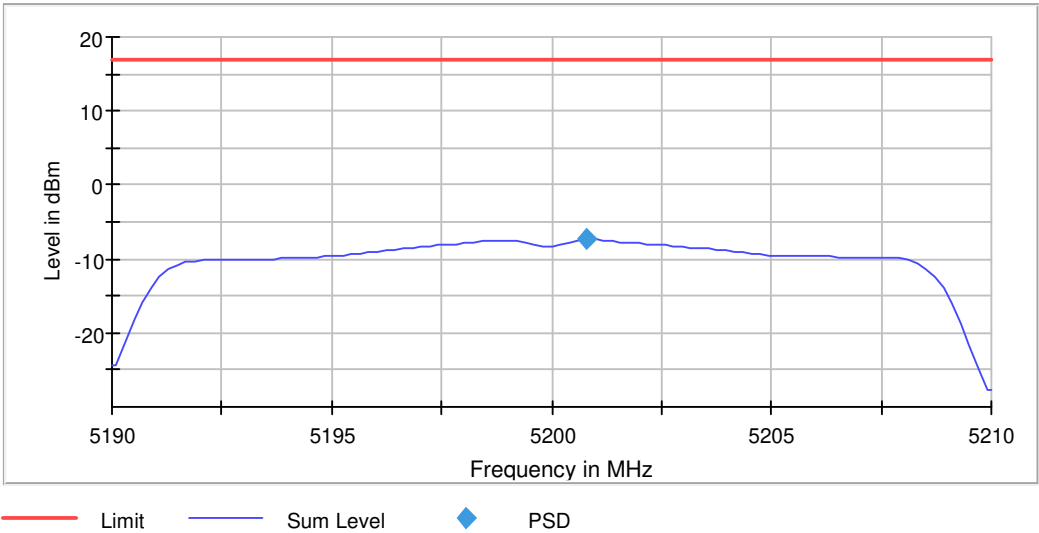
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5200.000000	5200.792079	-7.406	17.0	PASS

Ports

Port	Duty Cycle (%)
1	97.068



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.19000 GHz	5.19000 GHz
Stop Frequency	5.21000 GHz	5.21000 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 s	2.020 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB

Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.03 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

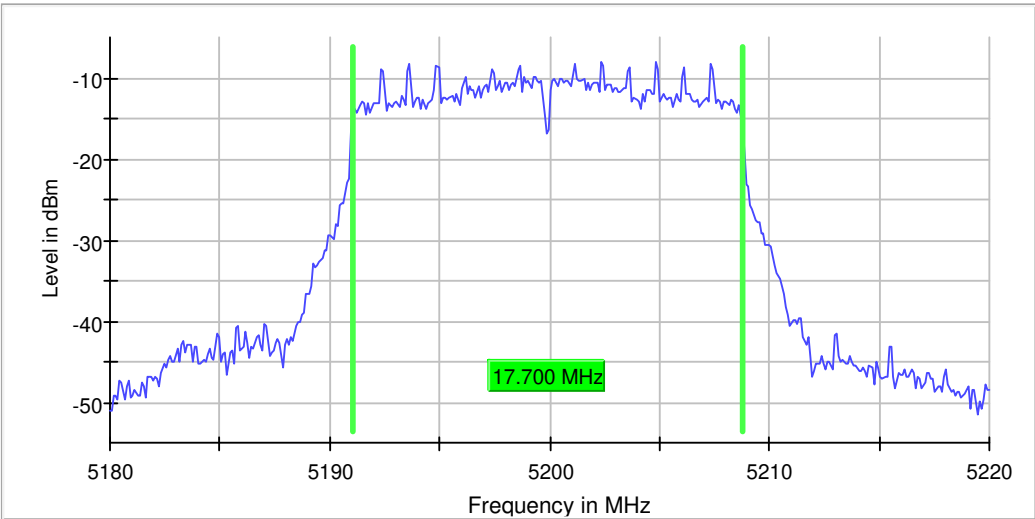
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5200.000000	17.700000	---	---	5191.050000	5208.750000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5200.000000	-8.1	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.18000 GHz	5.18000 GHz
Stop Frequency	5.22000 GHz	5.22000 GHz
Span	40.000 MHz	40.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	400	~ 400
Sweeptime	94.810 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	15 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.21 dB	0.30 dB

Occupied Channel Bandwidth 99% (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

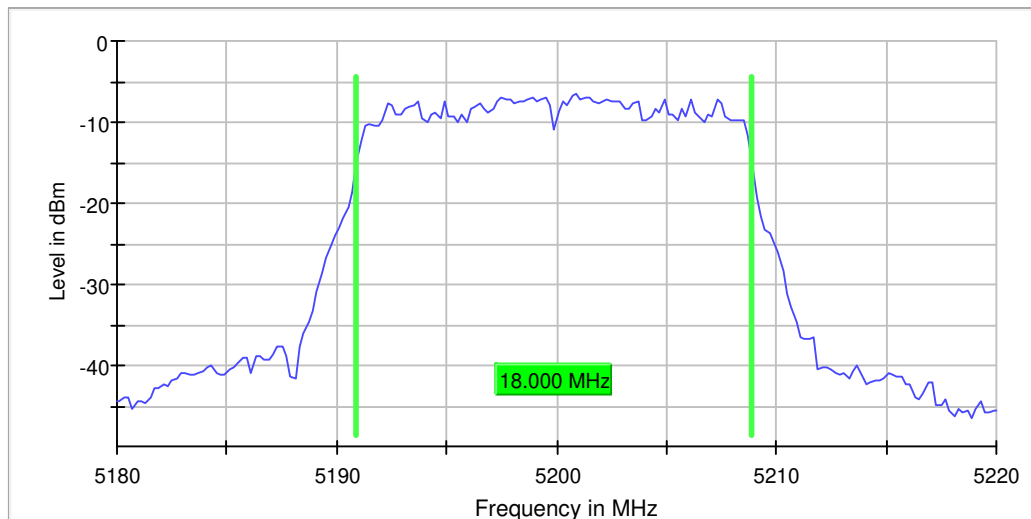
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5200.000000	18.000000	---	---	5190.900000	5208.900000

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

DUT Frequency (MHz)	Result
5200.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.18000 GHz	5.18000 GHz
Stop Frequency	5.22000 GHz	5.22000 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	<= 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	18 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.04 dB	0.30 dB

Emission Bandwidth 26 dB (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

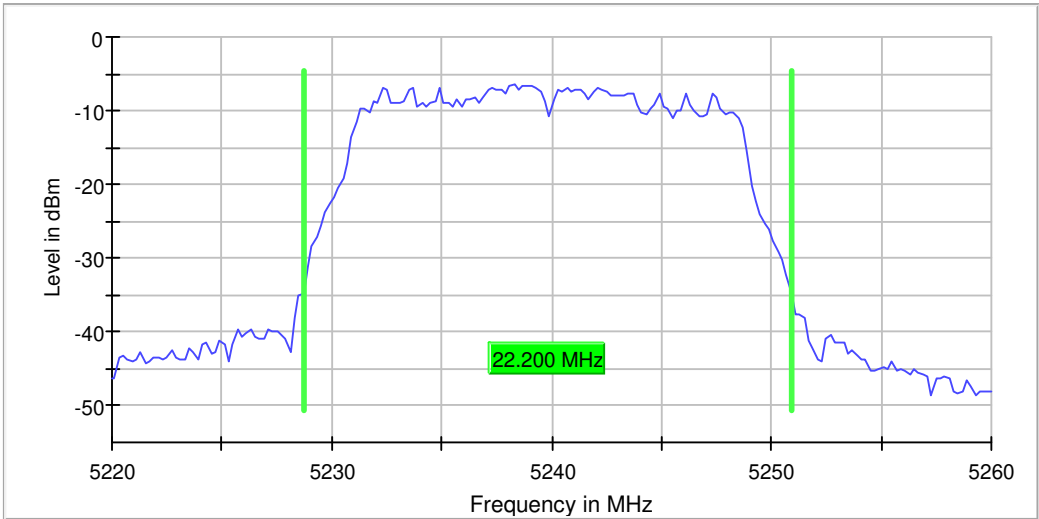
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

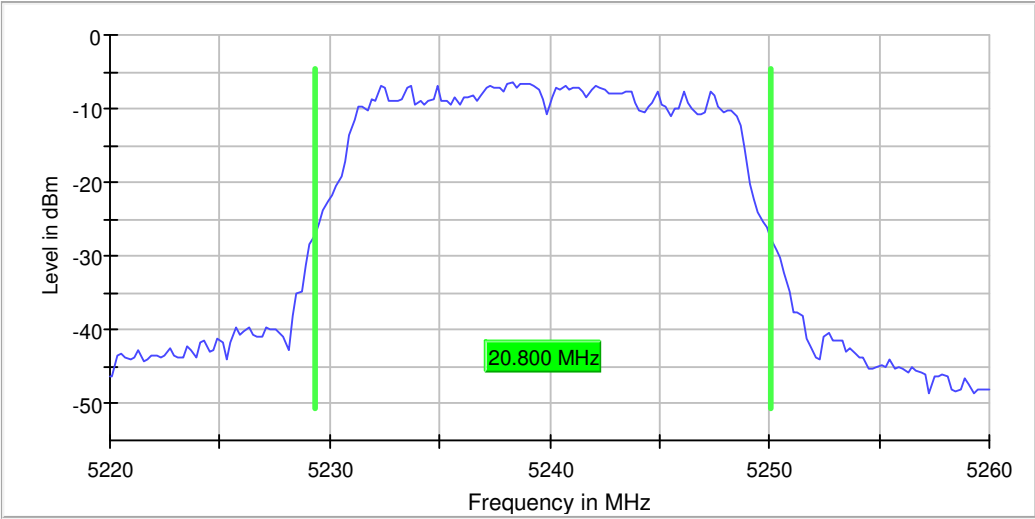
26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	22.200000	---	---	5228.700000	5250.900000

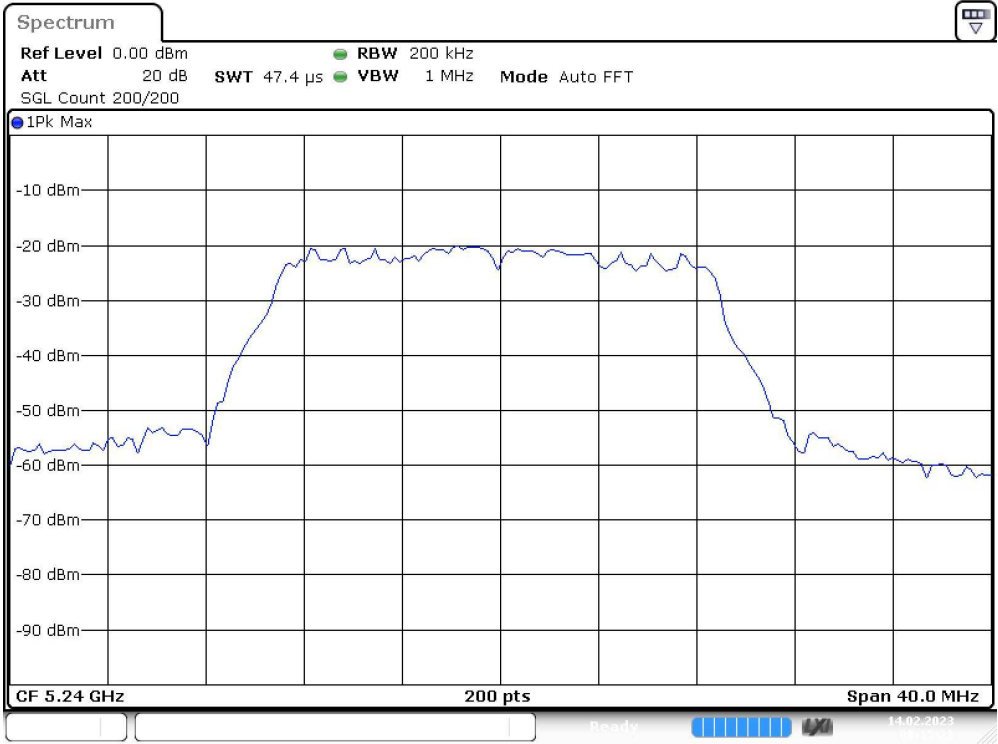
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5240.000000	-6.5	PASS





Bandwidth



Date: 14.FEB.2023 08:15:24

Measurement

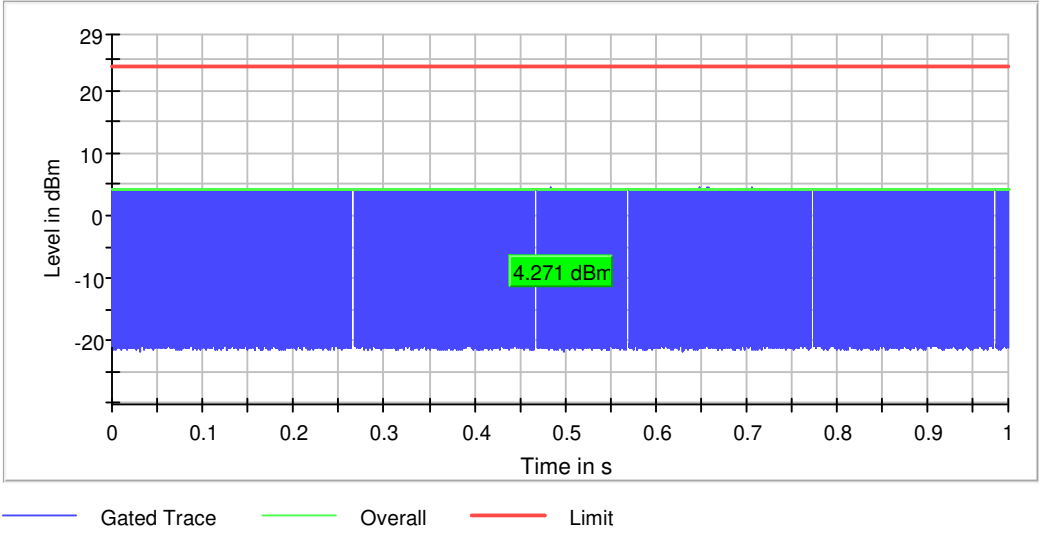
Setting	Instrument Value	Target Value
Start Frequency	5.22000 GHz	5.22000 GHz
Stop Frequency	5.26000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	~ 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	9 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.26 dB	0.30 dB

RF output power (5240 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5240.000000	4.3	24.0	4.3	98.404	PASS



Power Spectral Density (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

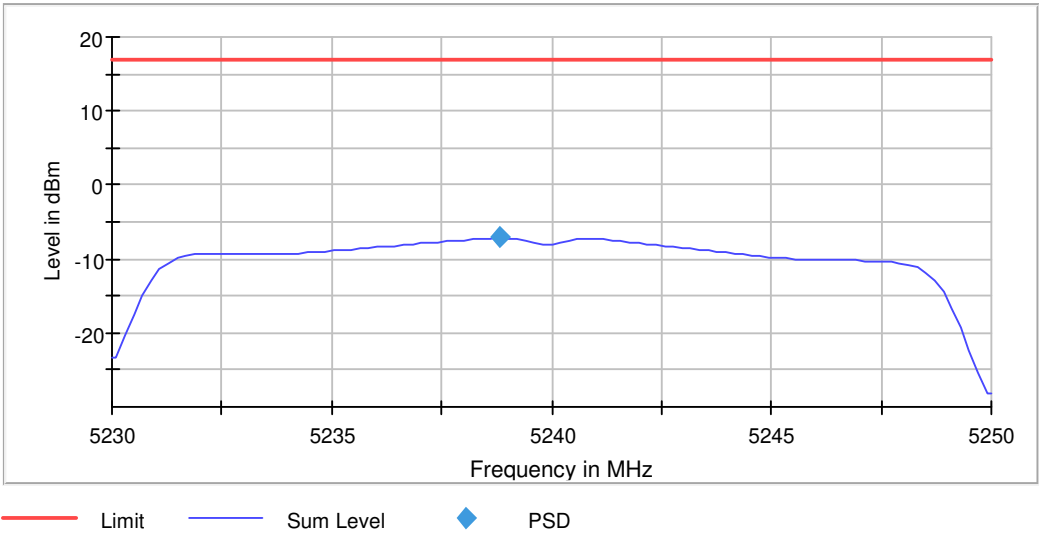
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5240.000000	5238.811881	-7.148	17.0	PASS

Ports

Port	Duty Cycle (%)
1	97.068



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 s	2.020 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB

Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.03 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

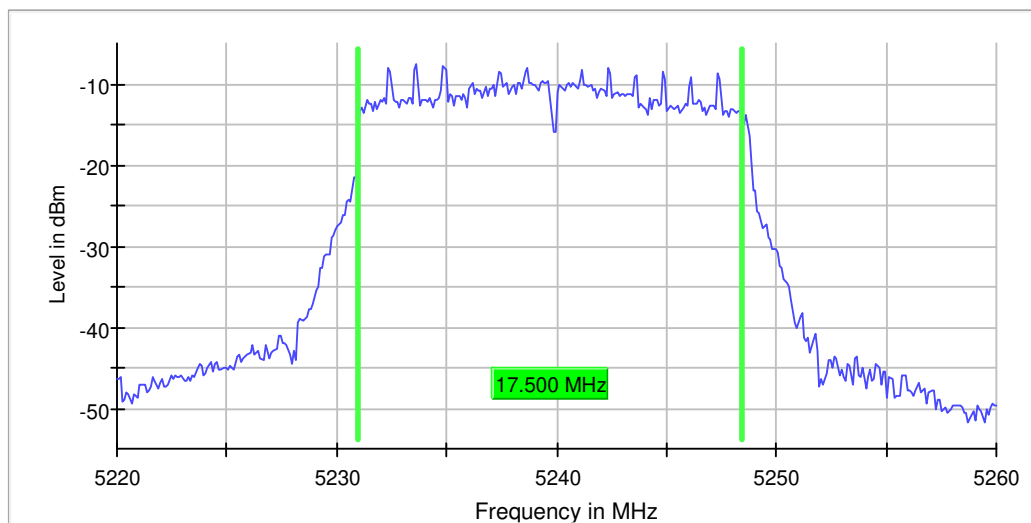
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	17.500000	---	---	5230.950000	5248.450000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5240.000000	-7.6	PASS



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	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	400	~ 400
Sweeptime	94.810 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	23 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.06 dB	0.30 dB

Occupied Channel Bandwidth 99% (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

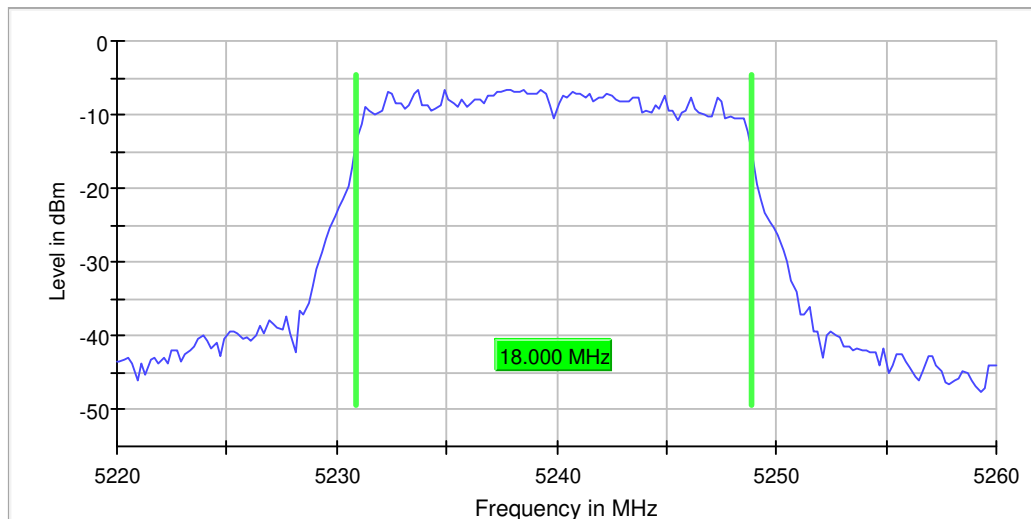
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	18.000000	---	---	5230.900000	5248.900000

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

DUT Frequency (MHz)	Result
5240.000000	PASS



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	200.000 kHz	<= 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	15 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.09 dB	0.30 dB

Band Edge high (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

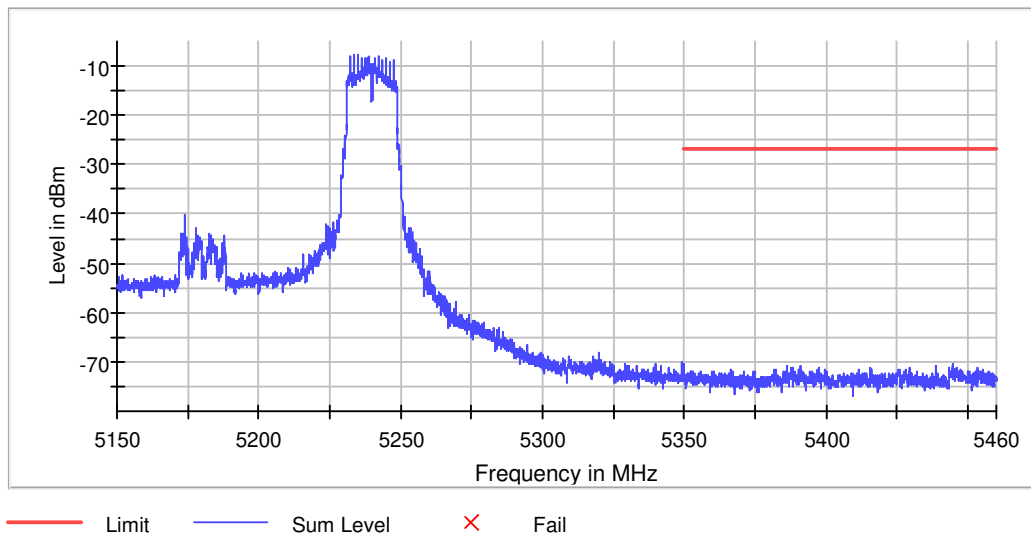
DUT Frequency (MHz)	Result
5240.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
5234.875000	-7.7

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
5444.475000	-70.4	43.4	-27.0	PASS
5444.425000	-70.7	43.7	-27.0	PASS
5438.725000	-70.8	43.8	-27.0	PASS
5386.125000	-70.8	43.8	-27.0	PASS
5391.025000	-70.9	43.9	-27.0	PASS
5444.925000	-70.9	43.9	-27.0	PASS
5444.875000	-70.9	43.9	-27.0	PASS
5444.825000	-70.9	43.9	-27.0	PASS
5444.525000	-70.9	43.9	-27.0	PASS
5438.775000	-71.0	44.0	-27.0	PASS
5386.175000	-71.0	44.0	-27.0	PASS
5387.675000	-71.1	44.1	-27.0	PASS
5444.975000	-71.1	44.1	-27.0	PASS
5415.825000	-71.2	44.2	-27.0	PASS
5388.125000	-71.2	44.2	-27.0	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.25000 GHz	5.25000 GHz
Span	100.000 MHz	100.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	2000	~ 2000
SweepTime	227.813 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	23 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.37 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	5.25000 GHz	5.25000 GHz
Stop Frequency	5.46000 GHz	5.46000 GHz
Span	210.000 MHz	210.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	4200	~ 4200
SweepTime	474.609 μ s	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.17 dB	0.50 dB

FCC 15.407 2015

DUT Information

Frequencies

WLAN CH 38 (5190 MHz)
WLAN CH 159 (5795 MHz)
WLAN CH 102 (5510 MHz)
WLAN CH 134 (5670 MHz)

WLAN CH 46 (5230 MHz)
WLAN CH 54 (5270 MHz)
WLAN CH 110 (5550 MHz)

WLAN CH 151 (5755 MHz)
WLAN CH 62 (5310 MHz)
WLAN CH 118 (5590 MHz)

Bandwidths

40 MHz (40 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

20.000 dBm (20 dBm)

0 dB

Gain Tables

20.000 dBm (20 dBm)

Port 1: 0dBi;

DUT Settings

No. of transmission chains	1
DFS capability	Yes
DFS Mode	Master
Equipment Type	Portable
TPC	No

Hardware Setup: WMS Measurements\Hardware Setup

Spectrum Analyzer:

SA FSV 40 (SA FSV 40) @ VISA (ADR
TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229,
FW 3.40

Vector Generator:

VG SMBV100B (VG SMBV100B) @ VISA (ADR
TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33

Generator:

SMB100Aa (SMB100A) @ VISA (ADR
TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev
2.21.0, 07/2016, CVI 2015

OSP:

OSP-B157W (OSP-B157W) @ VISA (ADR
TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW
1.23.0.2

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Emission Bandwidth 26 dB	5190.000	20.0	40.000000	PASS
RF output power	5190.000	20.0	40.000000	PASS
Power Spectral Density	5190.000	20.0	40.000000	PASS
Minimum Emission Bandwidth 6 dB	5190.000	20.0	40.000000	PASS
Occupied Channel Bandwidth 99%	5190.000	20.0	40.000000	PASS
Band Edge low	5190.000	20.0	40.000000	PASS
Emission Bandwidth 26 dB	5230.000	20.0	40.000000	PASS
RF output power	5230.000	20.0	40.000000	PASS
Power Spectral Density	5230.000	20.0	40.000000	PASS
Minimum Emission Bandwidth 6 dB	5230.000	20.0	40.000000	PASS
Occupied Channel Bandwidth 99%	5230.000	20.0	40.000000	PASS
Band Edge high	5230.000	20.0	40.000000	PASS

Emission Bandwidth 26 dB (5190 MHz; 20.000 dBm; 40 MHz)

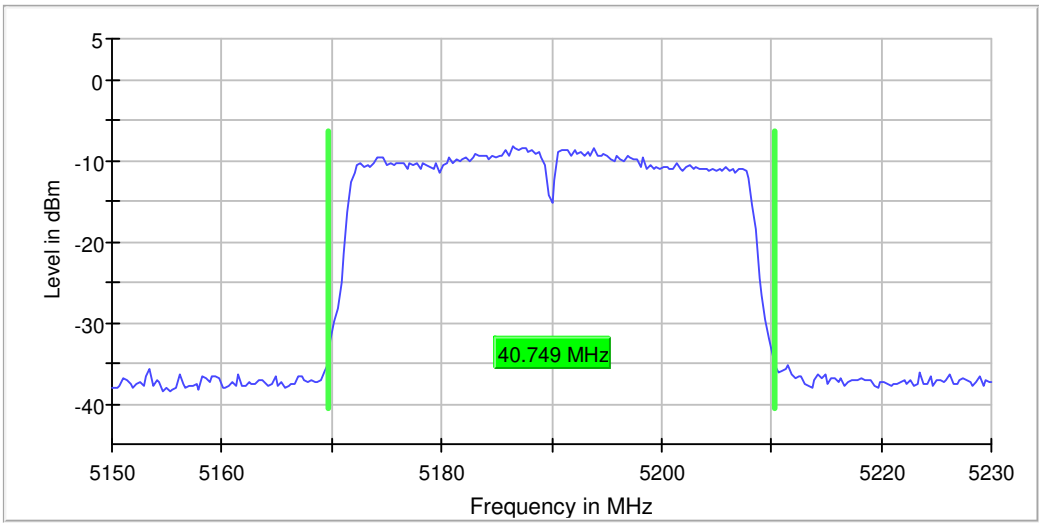
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures
New Rules v01r03 and ANSI C63.10

26 dB Bandwidth

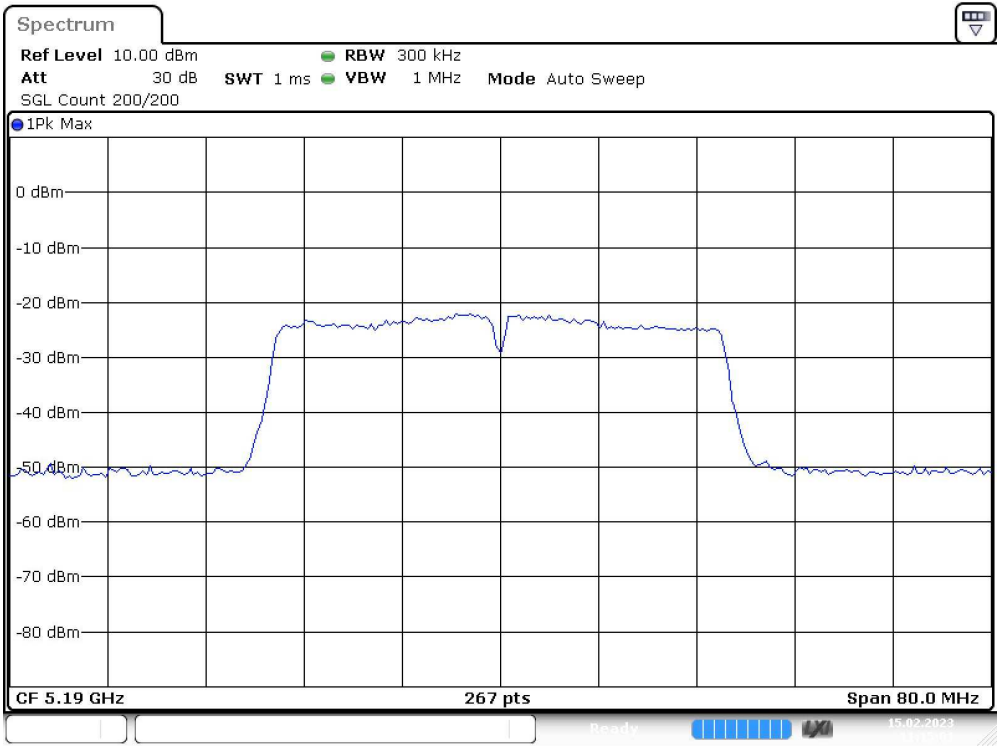
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5190.000000	40.749064	---	---	5169.625468	5210.374532

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5190.000000	-8.3	PASS



Bandwidth



Date: 15.FEB.2023 11:15:01

Measurement

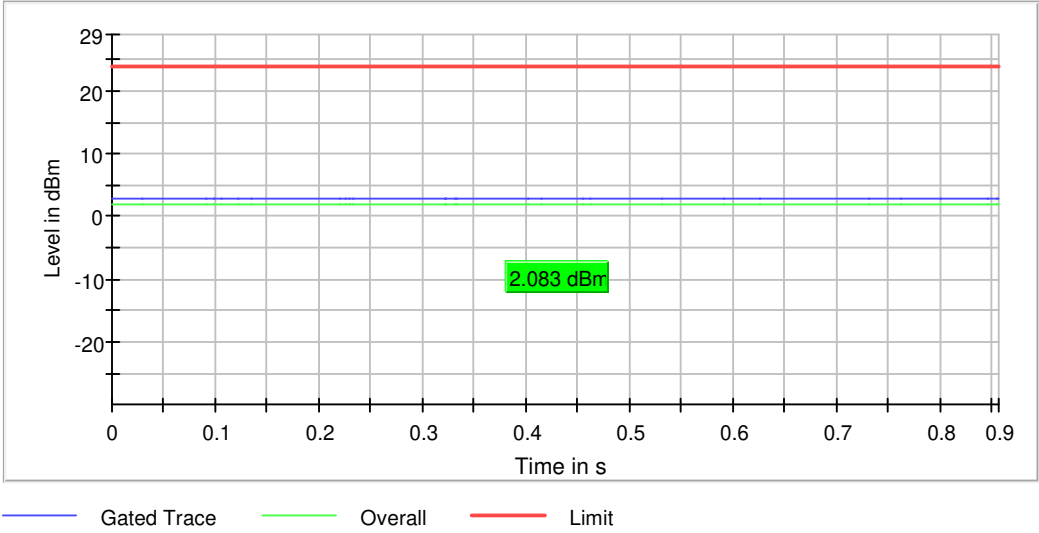
Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.23000 GHz	5.23000 GHz
Span	80.000 MHz	80.000 MHz
RBW	300.000 kHz	~ 400.000 kHz
VBW	1.000 MHz	>= 900.000 kHz
SweepPoints	267	~ 267
Sweeptime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	83 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.00 dB	0.30 dB

RF output power (5190 MHz; 20.000 dBm; 40 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5190.000000	2.1	24.0	2.1	100.000	PASS



Power Spectral Density (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Max level of analyzer (-11.4 dBm) more than 31.0 dB below the nominal power level.

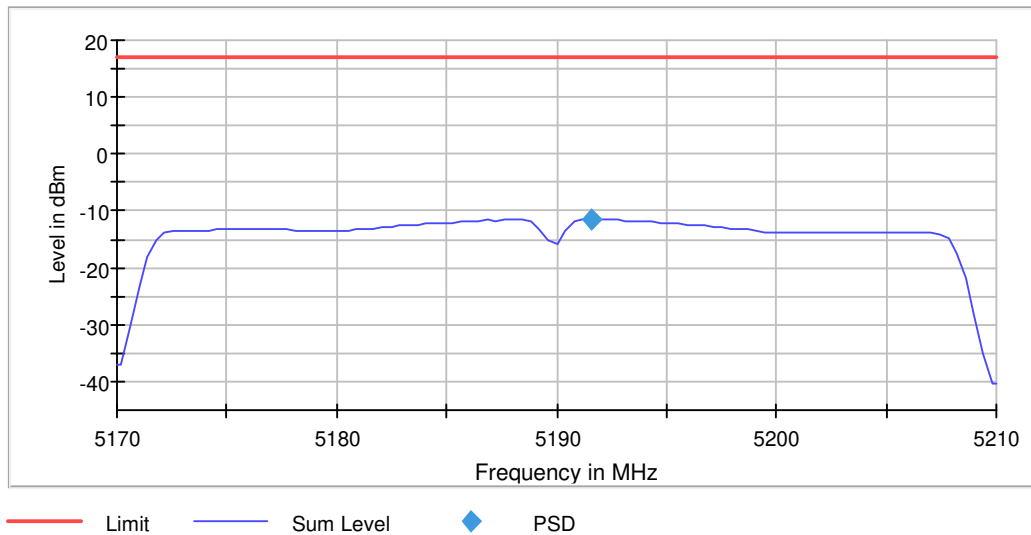
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5190.000000	5191.584158	-11.411	17.0	PASS

Ports

Port	Duty Cycle (%)
1	94.308



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 s	2.020 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO

Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.14 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

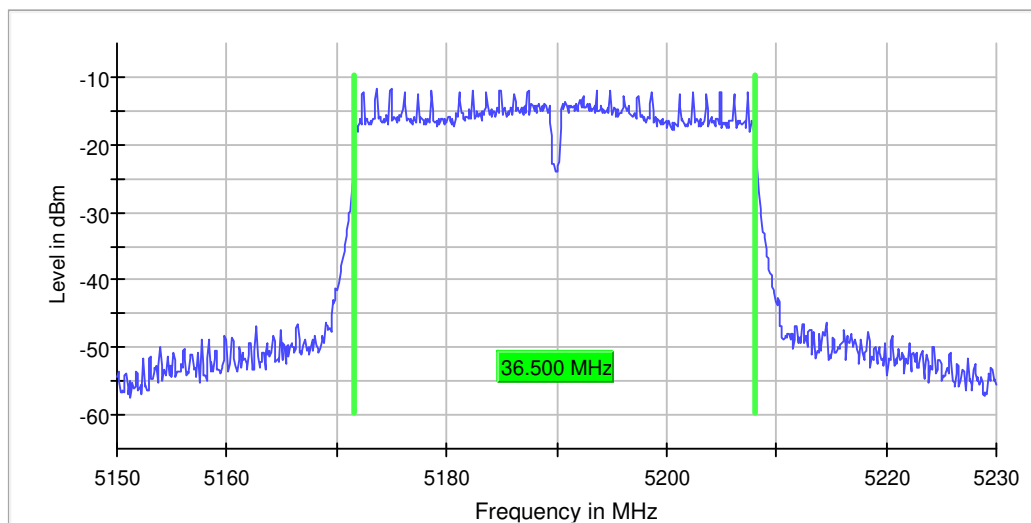
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5190.000000	36.500000	---	---	5171.650000	5208.150000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5190.000000	-11.7	PASS



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	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	800	~ 800
Sweptime	1.070 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	28 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.14 dB	0.30 dB

Occupied Channel Bandwidth 99% (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

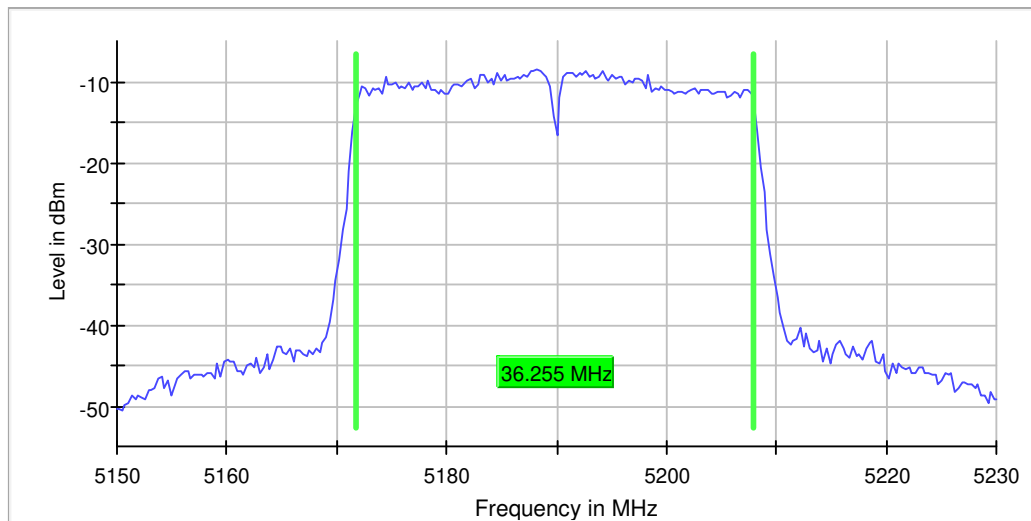
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5190.000000	36.254682	---	---	5171.722846	5207.977528

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

DUT Frequency (MHz)	Result
5190.000000	PASS



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	300.000 kHz	<= 400.000 kHz
VBW	1.000 MHz	>= 900.000 kHz
SweepPoints	267	~ 267
SweepTime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	21 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.30 dB	0.30 dB

Band Edge low (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

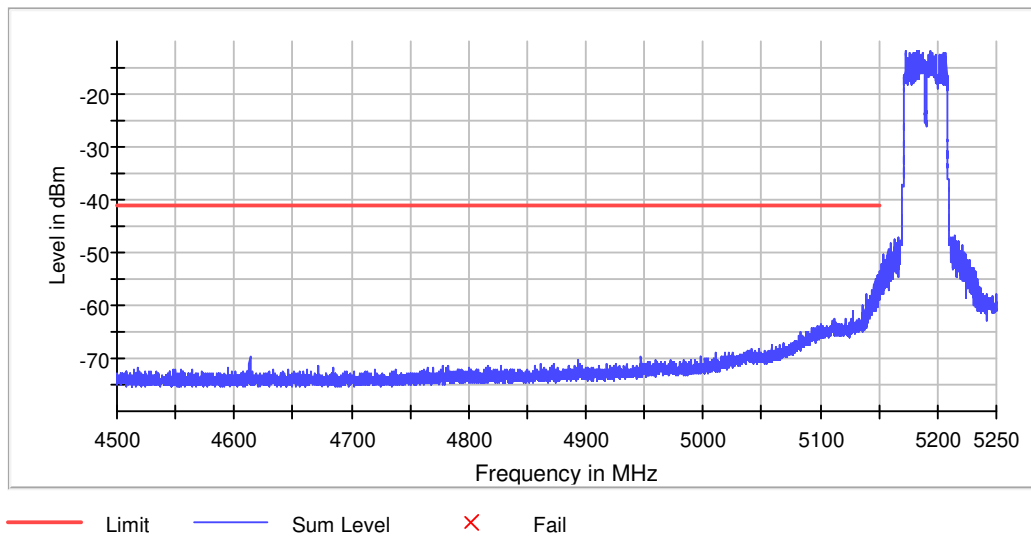
DUT Frequency (MHz)	Result
5190.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
5182.375000	-11.7

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
5148.625000	-54.1	12.9	-41.2	PASS
5149.625000	-54.3	13.1	-41.2	PASS
5148.675000	-54.4	13.2	-41.2	PASS
5149.575000	-54.6	13.4	-41.2	PASS
5149.675000	-54.8	13.5	-41.2	PASS
5147.425000	-54.9	13.6	-41.2	PASS
5147.375000	-55.0	13.8	-41.2	PASS
5146.425000	-55.5	14.3	-41.2	PASS
5146.475000	-55.6	14.4	-41.2	PASS
5148.425000	-55.7	14.5	-41.2	PASS
5148.725000	-55.9	14.7	-41.2	PASS
5149.175000	-56.1	14.9	-41.2	PASS
5149.225000	-56.1	14.9	-41.2	PASS
5148.575000	-56.1	14.9	-41.2	PASS
5146.375000	-56.2	15.0	-41.2	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.25000 GHz	5.25000 GHz
Span	100.000 MHz	100.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	2000	~ 2000
SweepTime	227.813 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	42 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.29 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	4.50000 GHz	4.50000 GHz
Stop Frequency	5.15000 GHz	5.15000 GHz
Span	650.000 MHz	650.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	13000	~ 13000
SweepTime	13.000 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	51 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Emission Bandwidth 26 dB (5230 MHz; 20.000 dBm; 40 MHz)

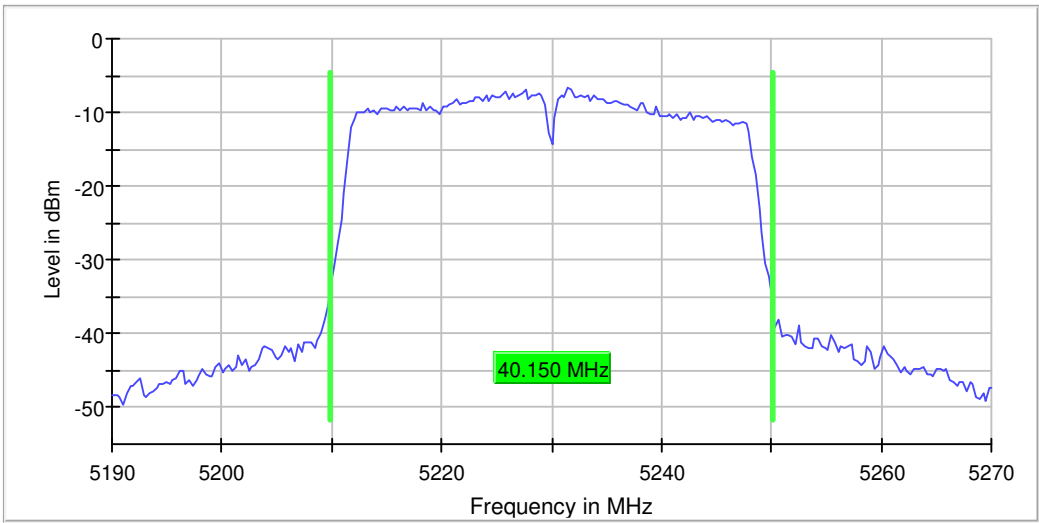
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures
New Rules v01r03 and ANSI C63.10

26 dB Bandwidth

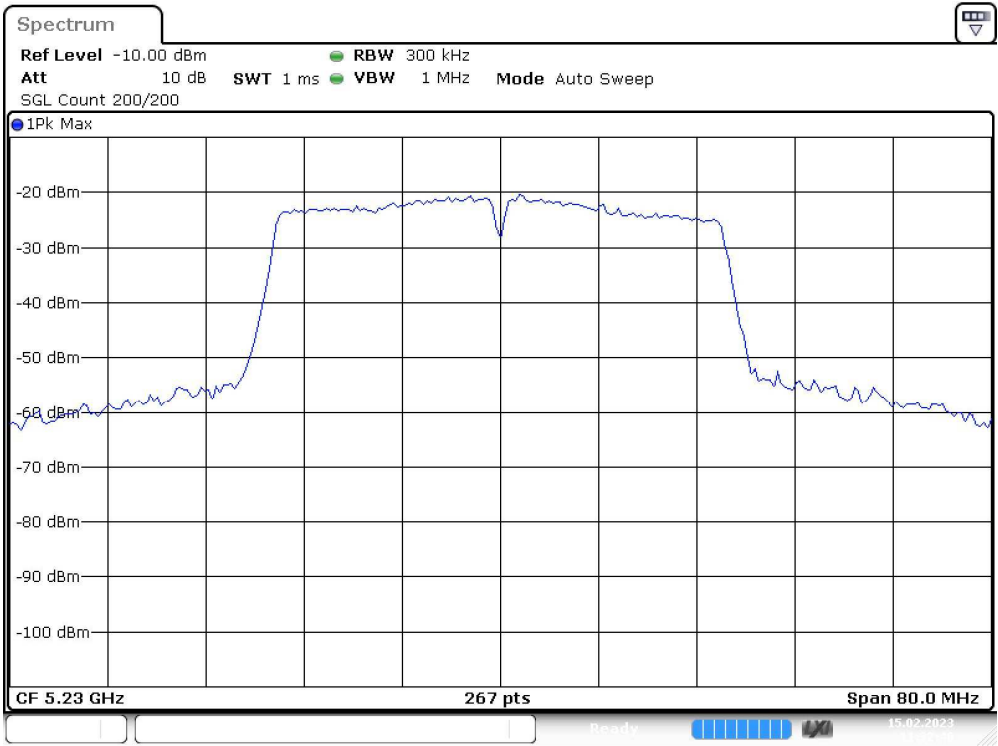
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5230.000000	40.149812	---	---	5209.925094	5250.074906

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5230.000000	-6.6	PASS



Bandwidth



Date: 15.FEB.2023 11:32:41

Measurement

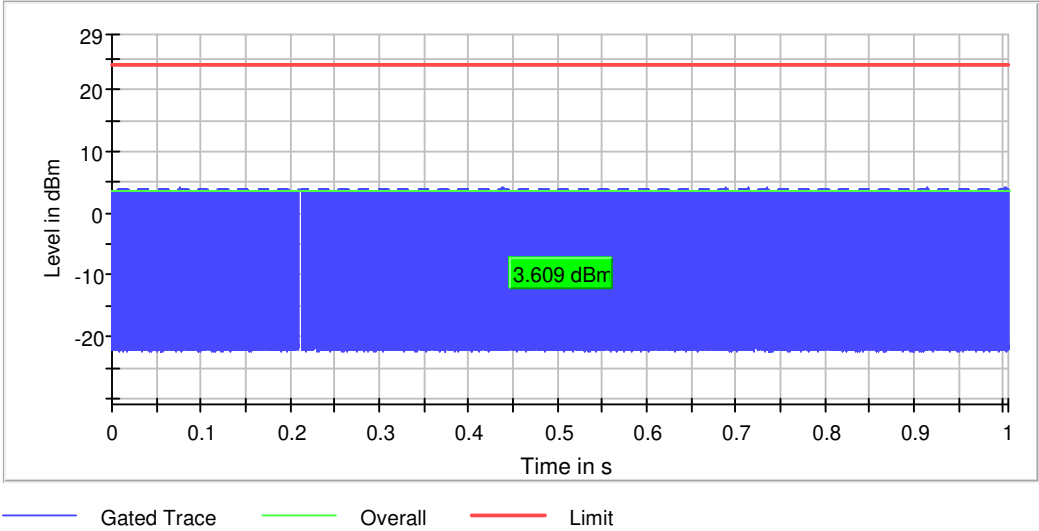
Setting	Instrument Value	Target Value
Start Frequency	5.19000 GHz	5.19000 GHz
Stop Frequency	5.27000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	300.000 kHz	~ 400.000 kHz
VBW	1.000 MHz	>= 900.000 kHz
SweepPoints	267	~ 267
SweepTime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	100 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.12 dB	0.30 dB

RF output power (5230 MHz; 20.000 dBm; 40 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5230.000000	3.6	24.0	3.6	99.860	PASS



Power Spectral Density (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

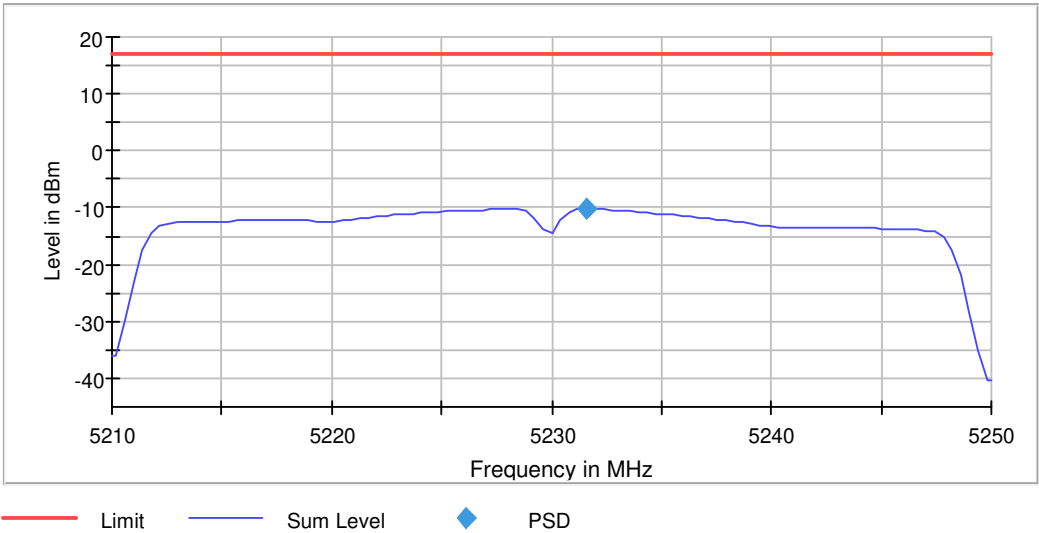
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5230.000000	5231.584158	-10.220	17.0	PASS

Ports

Port	Duty Cycle (%)
1	94.294



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 s	2.020 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB

Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.03 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

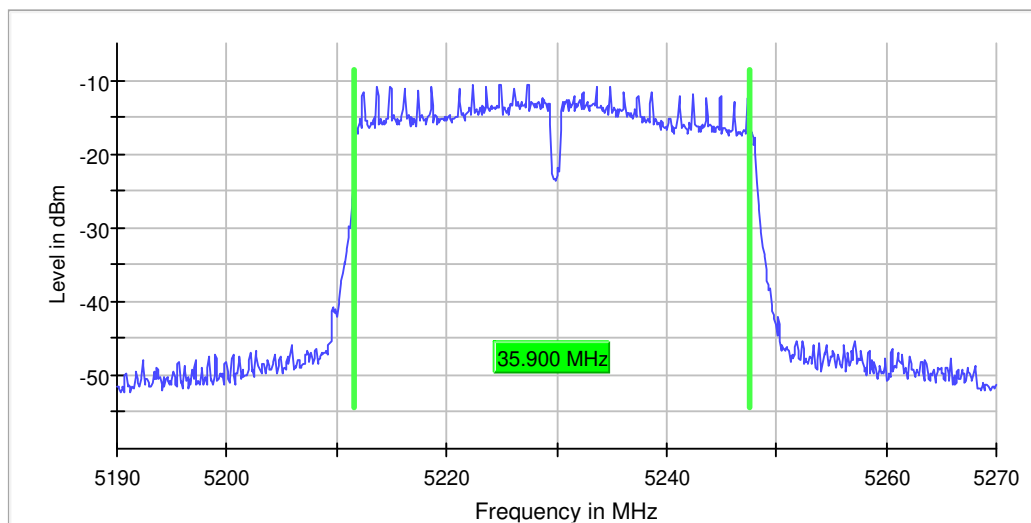
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5230.000000	35.900000	---	---	5211.650000	5247.550000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5230.000000	-10.5	PASS



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	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	800	~ 800
Sweeptime	1.070 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	26 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.25 dB	0.30 dB

Occupied Channel Bandwidth 99% (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

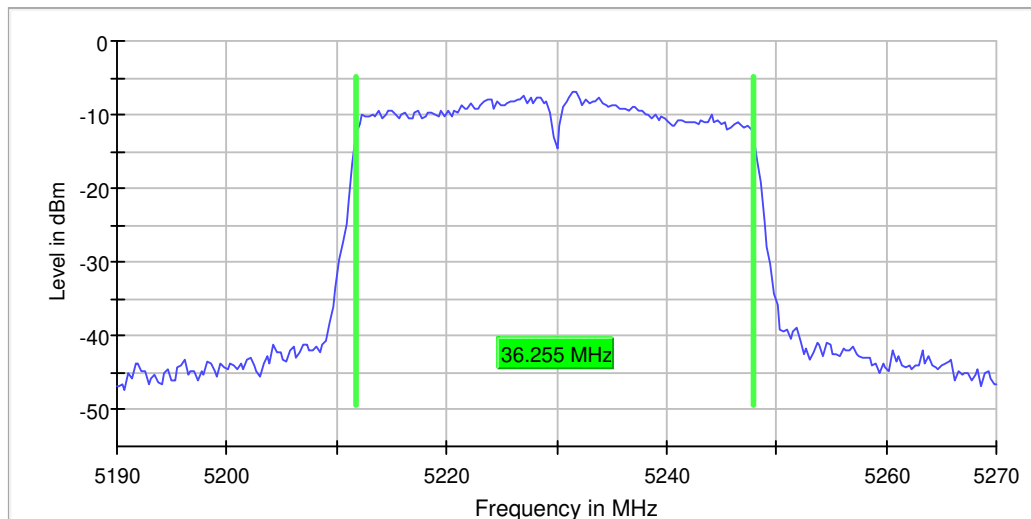
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5230.000000	36.254682	---	---	5211.722846	5247.977528

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

DUT Frequency (MHz)	Result
5230.000000	PASS



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	300.000 kHz	<= 400.000 kHz
VBW	1.000 MHz	>= 900.000 kHz
SweepPoints	267	~ 267
SweepTime	1.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	17 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.25 dB	0.30 dB

Band Edge high (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

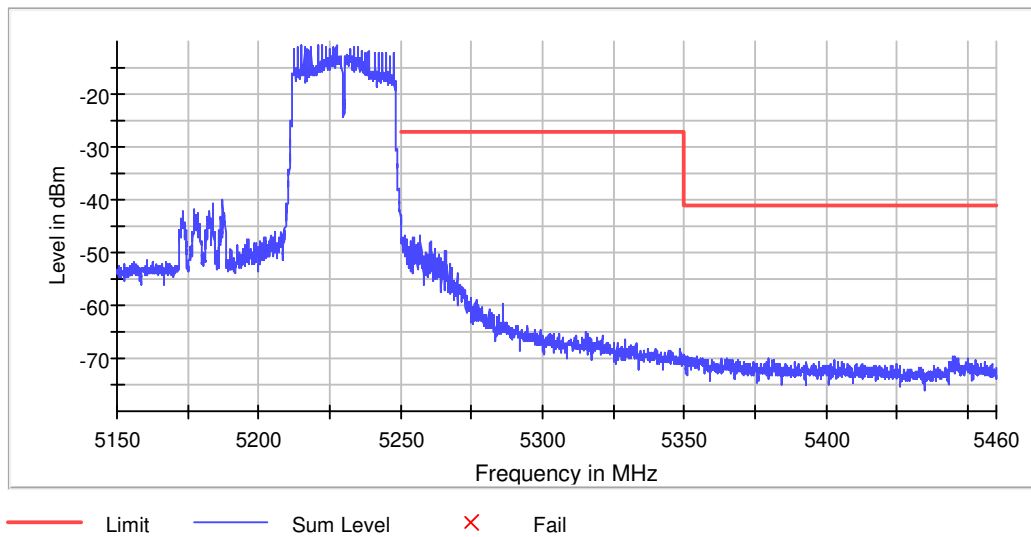
DUT Frequency (MHz)	Result
5230.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
5222.375000	-10.6

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
5250.125000	-42.7	15.7	-27.0	PASS
5250.175000	-43.1	16.1	-27.0	PASS
5250.075000	-43.5	16.5	-27.0	PASS
5250.025000	-44.7	17.7	-27.0	PASS
5250.225000	-45.7	18.7	-27.0	PASS
5257.125000	-46.8	19.8	-27.0	PASS
5250.275000	-46.8	19.8	-27.0	PASS
5257.075000	-46.8	19.8	-27.0	PASS
5251.825000	-46.9	19.9	-27.0	PASS
5251.075000	-47.1	20.1	-27.0	PASS
5251.125000	-47.1	20.1	-27.0	PASS
5251.775000	-47.1	20.1	-27.0	PASS
5251.025000	-47.1	20.1	-27.0	PASS
5251.725000	-47.2	20.2	-27.0	PASS
5251.675000	-47.2	20.2	-27.0	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.25000 GHz	5.25000 GHz
Span	100.000 MHz	100.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	2000	~ 2000
SweepTime	227.813 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	68 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.49 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	5.25000 GHz	5.25000 GHz
Stop Frequency	5.46000 GHz	5.46000 GHz
Span	210.000 MHz	210.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	4200	~ 4200
SweepTime	474.609 μ s	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	17 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

FCC 15.407 2015

DUT Information

Frequencies

WLAN CH 42 (5210 MHz)
WLAN CH 106 (5530 MHz)

WLAN CH 155 (5775 MHz)
WLAN CH 122 (5610 MHz)

WLAN CH 58 (5290 MHz)

Bandwidths

80 MHz (80 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

20.000 dBm (20 dBm)

0 dB

Gain Tables

20.000 dBm (20 dBm)

Port 1: 0dBi;

DUT Settings

No. of transmission chains
DFS capability
DFS Mode
Equipment Type
TPC

1
Yes
Master
Portable
No

Hardware Setup: WMS Measurements\TS8997

Spectrum Analyzer:

SA FSV 40 (SA FSV 40) @ VISA (ADR
TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229,
FW 3.40

Vector Generator:

VG SMBV100B (VG SMBV100B) @ VISA (ADR
TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33

Generator:

SMB100Aa (SMB100A) @ VISA (ADR
TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev
2.21.0, 07/2016, CVI 2015

OSP:

OSP-B157W (OSP-B157W) @ VISA (ADR
TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW
1.23.0.2

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Emission Bandwidth 26 dB	5210.000	20.0	80.000000	PASS
RF output power	5210.000	20.0	80.000000	PASS
Power Spectral Density	5210.000	20.0	80.000000	PASS
Minimum Emission Bandwidth 6 dB	5210.000	20.0	80.000000	PASS
Occupied Channel Bandwidth 99%	5210.000	20.0	80.000000	PASS
Band Edge low	5210.000	20.0	80.000000	PASS
Band Edge high	5210.000	20.0	80.000000	PASS

Emission Bandwidth 26 dB (5210 MHz; 20.000 dBm; 80 MHz)

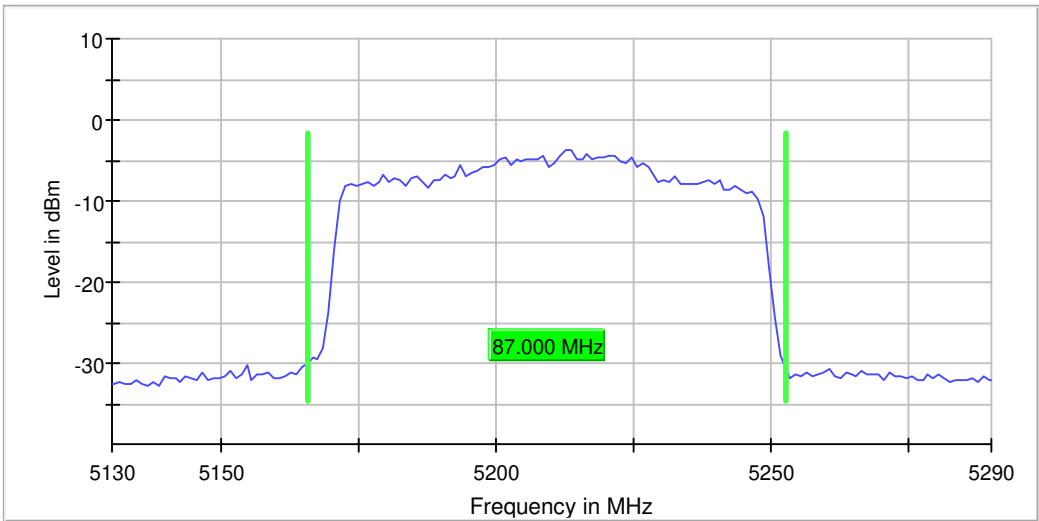
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures
New Rules v01r03 and ANSI C63.10

26 dB Bandwidth

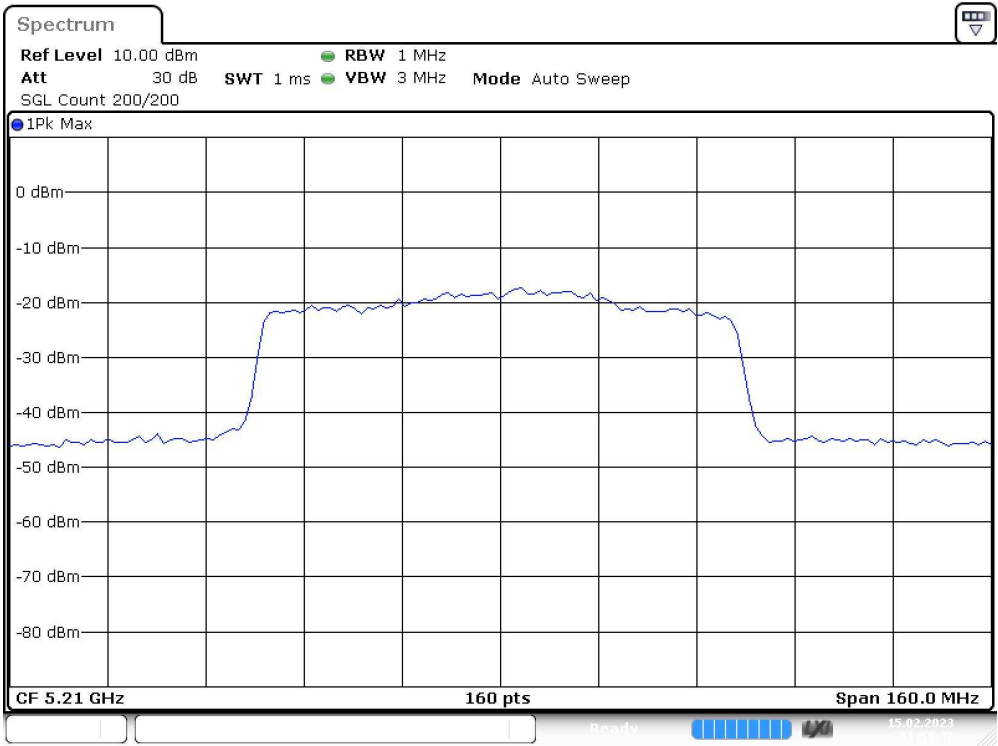
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5210.000000	87.000000	---	---	5165.500000	5252.500000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5210.000000	-3.6	PASS



Bandwidth



Date: 15.FEB.2023 11:53:42

Measurement

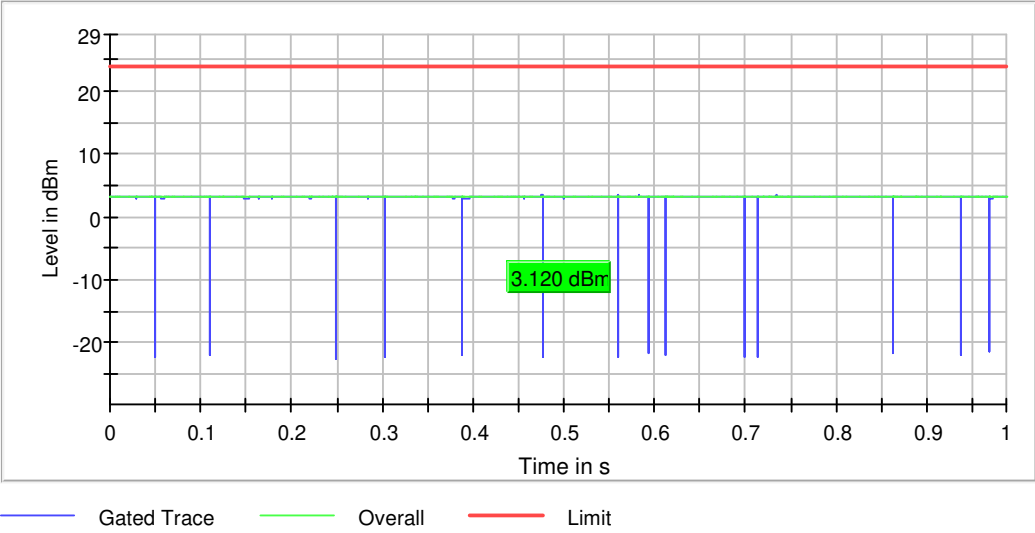
Setting	Instrument Value	Target Value
Start Frequency	5.13000 GHz	5.13000 GHz
Stop Frequency	5.29000 GHz	5.29000 GHz
Span	160.000 MHz	160.000 MHz
RBW	1.000 MHz	~ 800.000 kHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	160	~ 160
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	68 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.11 dB	0.30 dB

RF output power (5210 MHz; 20.000 dBm; 80 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5210.000000	3.1	24.0	3.1	100.000	PASS



Power Spectral Density (5210 MHz; 20.000 dBm; 80 MHz)

Customized settings.

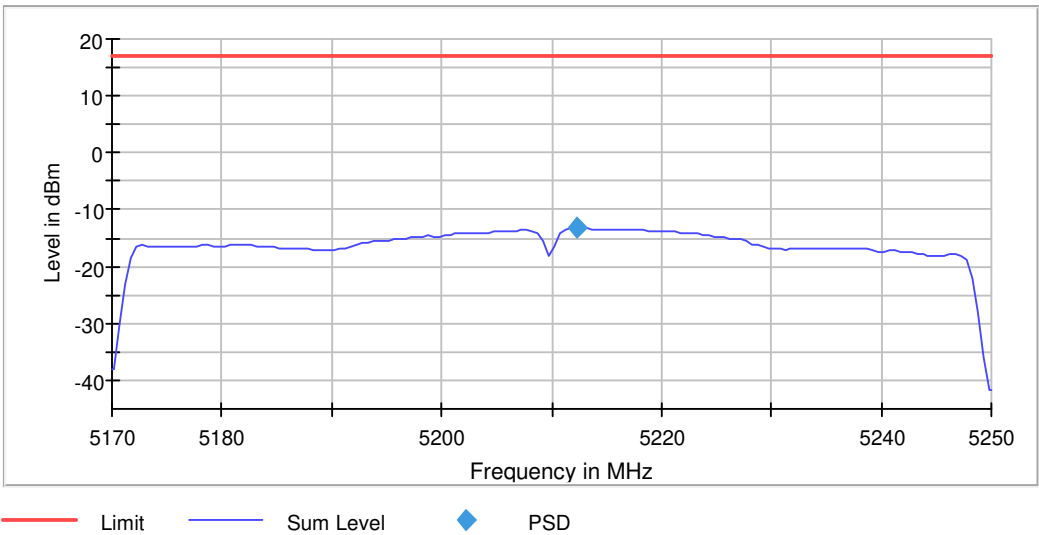
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5210.000000	5212.250000	-13.142	17.0	PASS

Ports

Port	Duty Cycle (%)
1	89.175



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 s	3.200 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB

Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.02 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5210 MHz; 20.000 dBm; 80 MHz)

Customized settings.

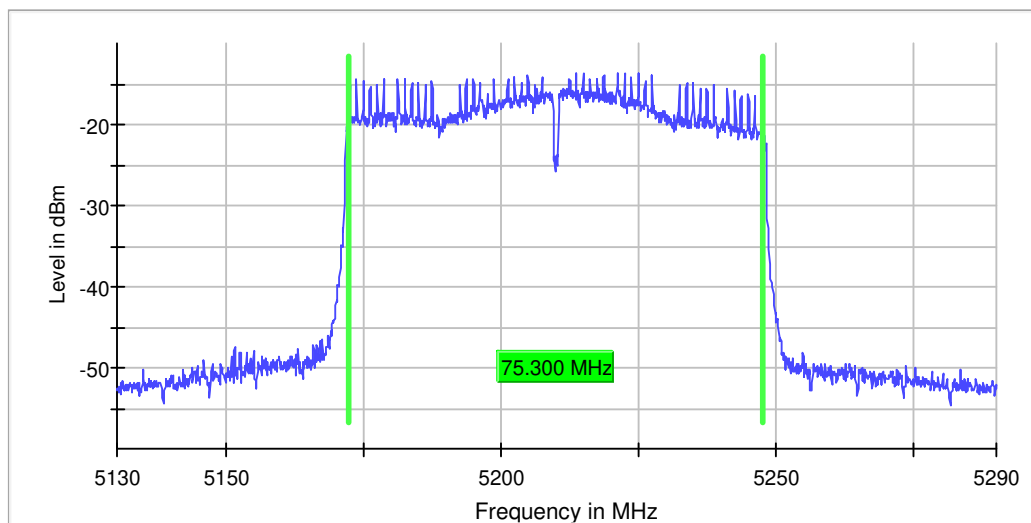
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5210.000000	75.300000	---	---	5172.250000	5247.550000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5210.000000	-13.6	PASS



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	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	1600	~ 1600
Sweptime	360.278 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	43 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.15 dB	0.30 dB

Occupied Channel Bandwidth 99% (5210 MHz; 20.000 dBm; 80 MHz)

Customized settings.

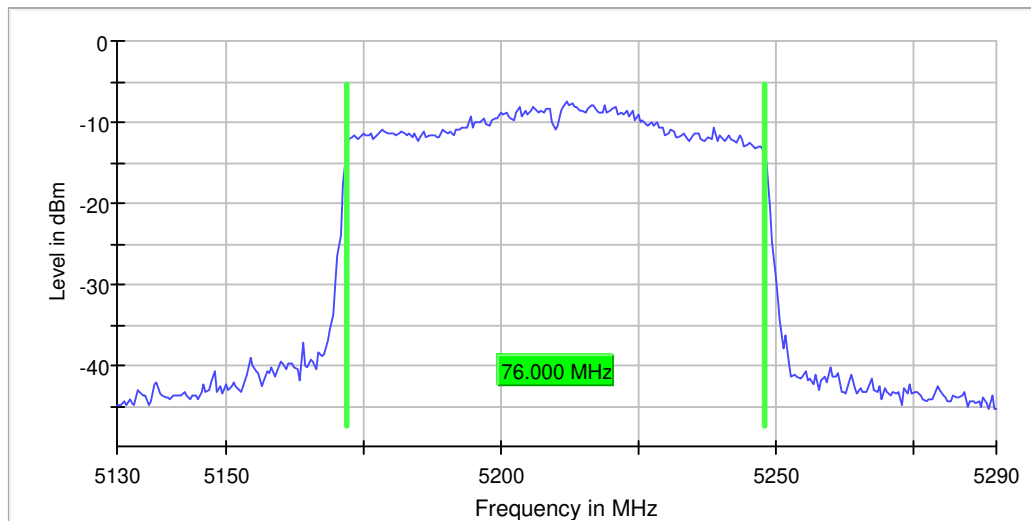
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5210.000000	76.000000	---	---	5171.750000	5247.750000

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

DUT Frequency (MHz)	Result
5210.000000	PASS



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	500.000 kHz	<= 800.000 kHz
VBW	2.000 MHz	>= 1.500 MHz
SweepPoints	320	~ 320
SweepTime	1.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	34 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.28 dB	0.30 dB

Band Edge low (5210 MHz; 20.000 dBm; 80 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

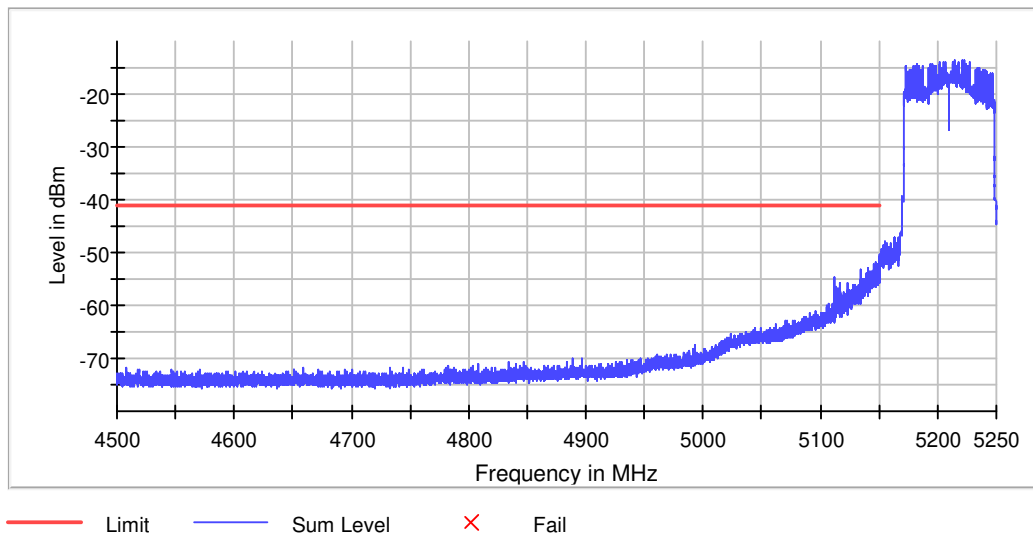
DUT Frequency (MHz)	Result
5210.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
5222.375000	-13.5

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
5147.375000	-51.8	10.6	-41.2	PASS
5146.175000	-52.2	11.0	-41.2	PASS
5149.575000	-52.2	11.0	-41.2	PASS
5149.525000	-52.2	11.0	-41.2	PASS
5146.475000	-52.3	11.1	-41.2	PASS
5146.425000	-52.4	11.2	-41.2	PASS
5147.425000	-52.5	11.3	-41.2	PASS
5146.125000	-52.6	11.4	-41.2	PASS
5149.275000	-52.7	11.4	-41.2	PASS
5149.225000	-52.7	11.5	-41.2	PASS
5147.325000	-52.7	11.5	-41.2	PASS
5141.525000	-52.9	11.7	-41.2	PASS
5149.875000	-52.9	11.7	-41.2	PASS
5147.975000	-53.0	11.7	-41.2	PASS
5148.025000	-53.0	11.8	-41.2	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.25000 GHz	5.25000 GHz
Span	100.000 MHz	100.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	2000	~ 2000
SweepTime	227.813 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	27 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.41 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	4.50000 GHz	4.50000 GHz
Stop Frequency	5.15000 GHz	5.15000 GHz
Span	650.000 MHz	650.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	13000	~ 13000
SweepTime	13.000 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	40 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.35 dB	0.50 dB

Band Edge high (5210 MHz; 20.000 dBm; 80 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

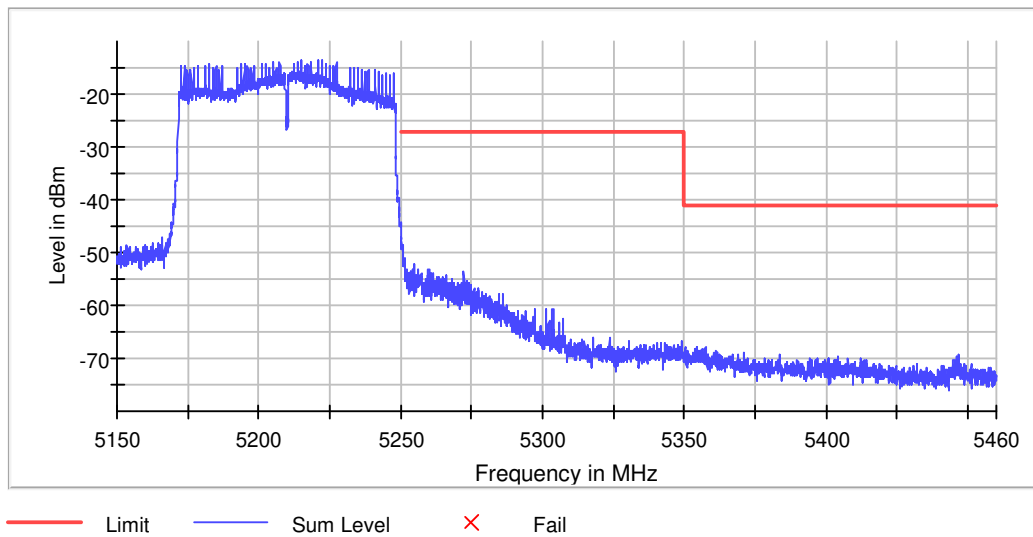
DUT Frequency (MHz)	Result
5210.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
5222.375000	-13.5

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
5250.275000	-47.0	20.0	-27.0	PASS
5250.225000	-47.0	20.0	-27.0	PASS
5250.025000	-47.1	20.1	-27.0	PASS
5250.125000	-47.1	20.1	-27.0	PASS
5250.075000	-47.5	20.5	-27.0	PASS
5250.175000	-47.5	20.5	-27.0	PASS
5250.475000	-47.9	20.9	-27.0	PASS
5250.525000	-47.9	20.9	-27.0	PASS
5250.325000	-48.5	21.5	-27.0	PASS
5250.775000	-48.5	21.5	-27.0	PASS
5250.725000	-48.6	21.6	-27.0	PASS
5250.425000	-49.4	22.4	-27.0	PASS
5250.375000	-49.4	22.4	-27.0	PASS
5250.575000	-49.9	22.9	-27.0	PASS
5250.825000	-50.1	23.1	-27.0	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.25000 GHz	5.25000 GHz
Span	100.000 MHz	100.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	2000	~ 2000
SweepTime	227.813 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	29 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.48 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	5.25000 GHz	5.25000 GHz
Stop Frequency	5.46000 GHz	5.46000 GHz
Span	210.000 MHz	210.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	4200	~ 4200
SweepTime	474.609 μ s	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	2 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.00 dB	0.50 dB

FCC 15.407 2015

DUT Information

Frequencies

WLAN CH 36 (5180 MHz)	WLAN CH 40 (5200 MHz)	WLAN CH 48 (5240 MHz)
WLAN CH 149 (5745 MHz)	WLAN CH 157 (5785 MHz)	WLAN CH 165 (5825 MHz)
WLAN CH 52 (5260 MHz)	WLAN CH 56 (5280 MHz)	WLAN CH 64 (5320 MHz)
WLAN CH 100 (5500 MHz)	WLAN CH 120 (5600 MHz)	WLAN CH 140 (5700 MHz)
WLAN CH 116 (5580 MHz)	WLAN CH 151 (5755 MHz)	WLAN CH 159 (5795 MHz)
WLAN CH 155 (5775 MHz)		

Bandwidths

20 MHz (20 MHz)	40 MHz (40 MHz)	80 MHz (80 MHz)
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Power

20.000 dBm (20 dBm)

Beamforming Gain

20.000 dBm (20 dBm)	0 dB
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Gain Tables

20.000 dBm (20 dBm)	Port 1: 0dBi;
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DUT Settings

No. of transmission chains	1
DFS capability	Yes
DFS Mode	Master
Equipment Type	Portable
TPC	No

Hardware Setup: WMS Measurements\TS8997

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40
Vector Generator:	VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33
Generator:	SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015
OSP:	OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Emission Bandwidth 26 dB	5180.000	20.0	20.000000	PASS
RF output power	5180.000	20.0	20.000000	PASS
Power Spectral Density	5180.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	5180.000	20.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5180.000	20.0	20.000000	PASS
Band Edge low	5180.000	20.0	20.000000	PASS
Emission Bandwidth 26 dB	5200.000	20.0	20.000000	PASS
RF output power	5200.000	20.0	20.000000	PASS
Power Spectral Density	5200.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	5200.000	20.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5200.000	20.0	20.000000	PASS
Emission Bandwidth 26 dB	5240.000	20.0	20.000000	PASS
RF output power	5240.000	20.0	20.000000	PASS
Power Spectral Density	5240.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	5240.000	20.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5240.000	20.0	20.000000	PASS
Band Edge high	5240.000	20.0	20.000000	PASS

Emission Bandwidth 26 dB (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

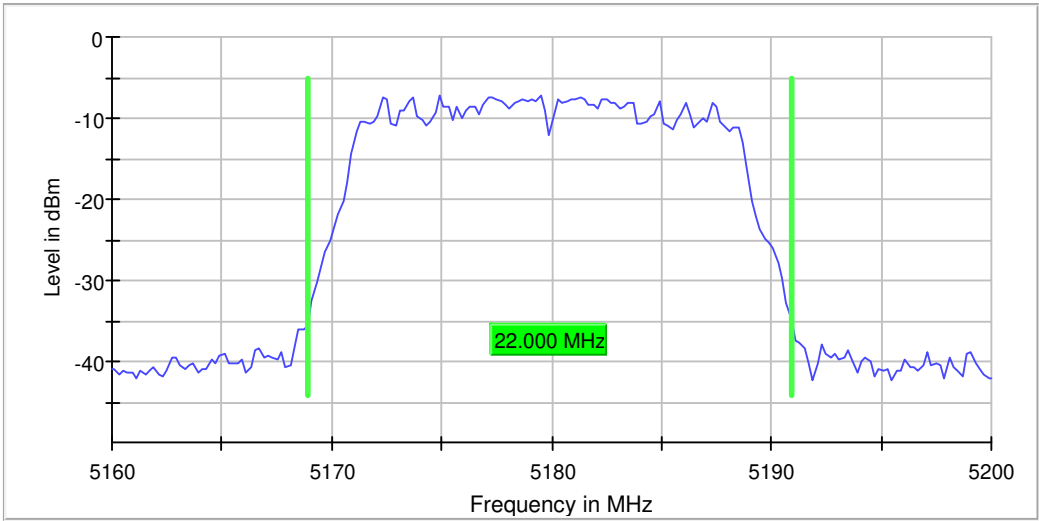
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

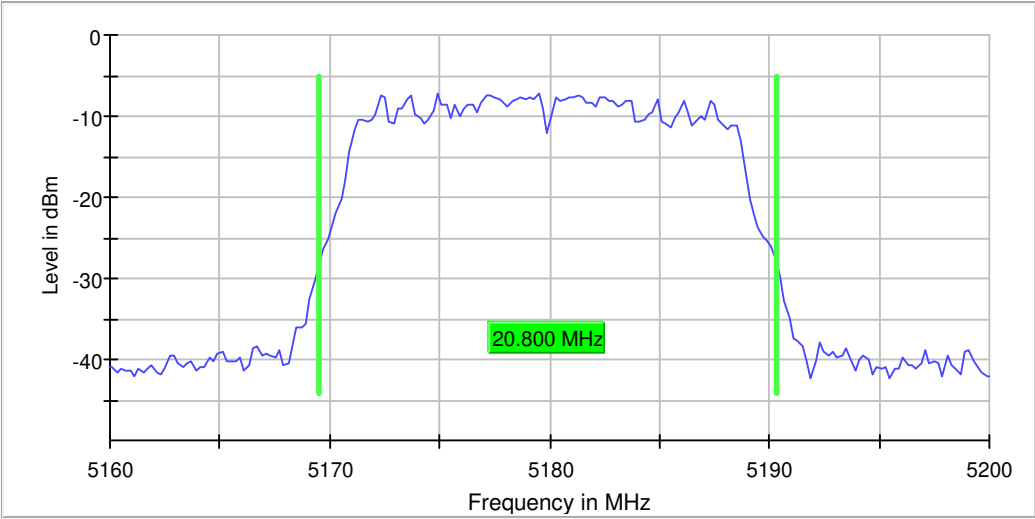
26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	22.000000	---	---	5168.900000	5190.900000

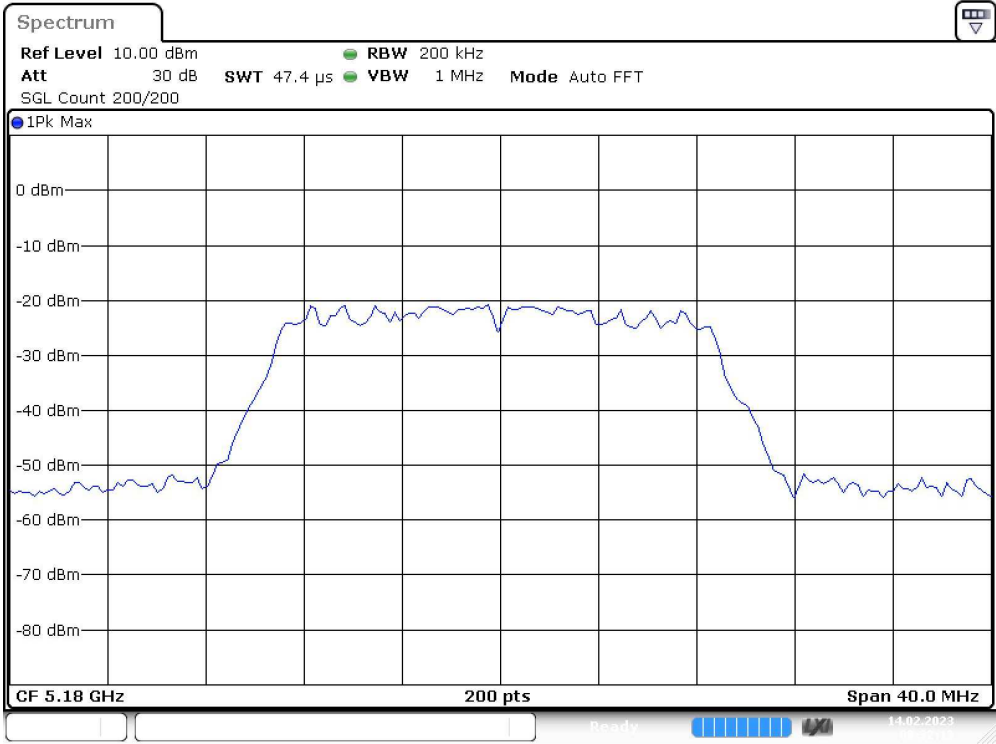
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5180.000000	-7.2	PASS





Bandwidth



Date: 14.FEB.2023 08:32:13

Measurement

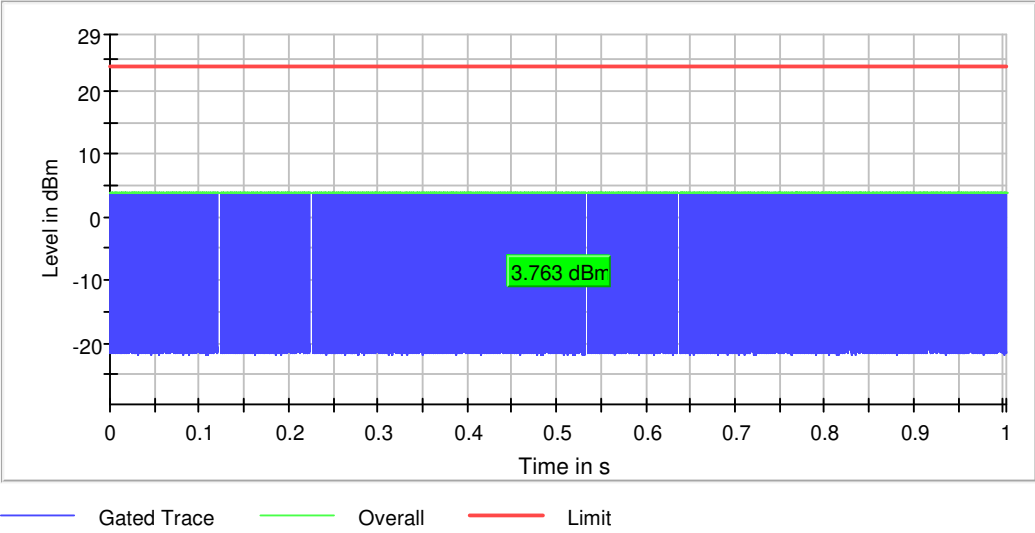
Setting	Instrument Value	Target Value
Start Frequency	5.16000 GHz	5.16000 GHz
Stop Frequency	5.20000 GHz	5.20000 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	~ 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 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
Stablemode	Trace	Trace
Stablevalue	1.00 dB	1.00 dB
Run	4 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.76 dB	1.00 dB

RF output power (5180 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5180.000000	3.8	24.0	3.8	99.861	PASS



Power Spectral Density (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

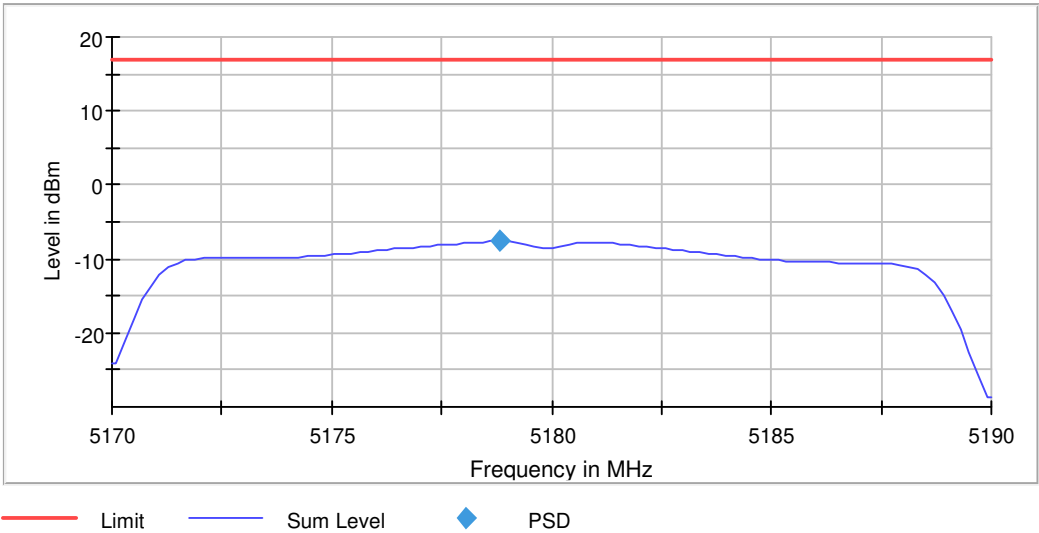
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5180.000000	5178.811881	-7.577	17.0	PASS

Ports

Port	Duty Cycle (%)
1	97.050



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 s	2.020 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB

Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.03 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

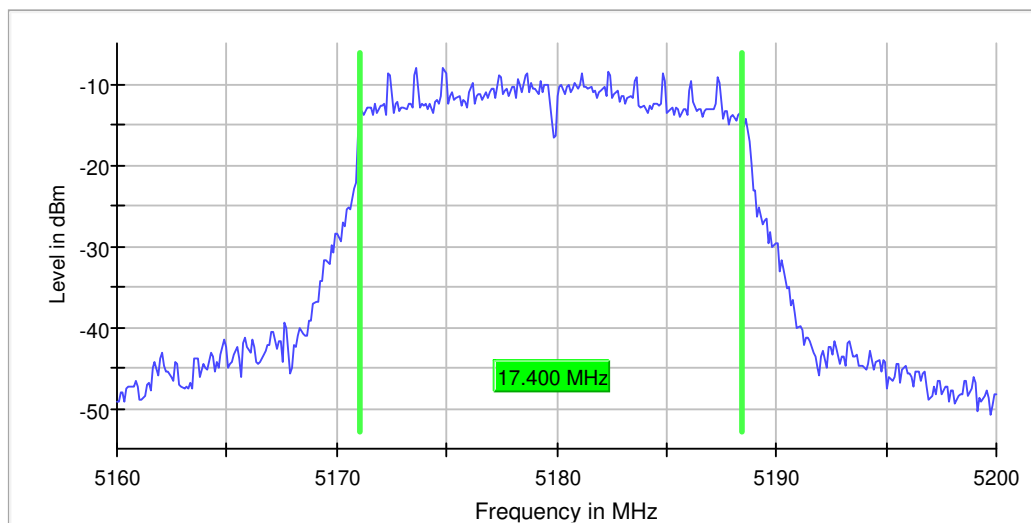
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	17.400000	---	---	5171.050000	5188.450000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5180.000000	-8.1	PASS



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	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	400	~ 400
Sweeptime	94.810 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	29 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.21 dB	0.30 dB

Occupied Channel Bandwidth 99% (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

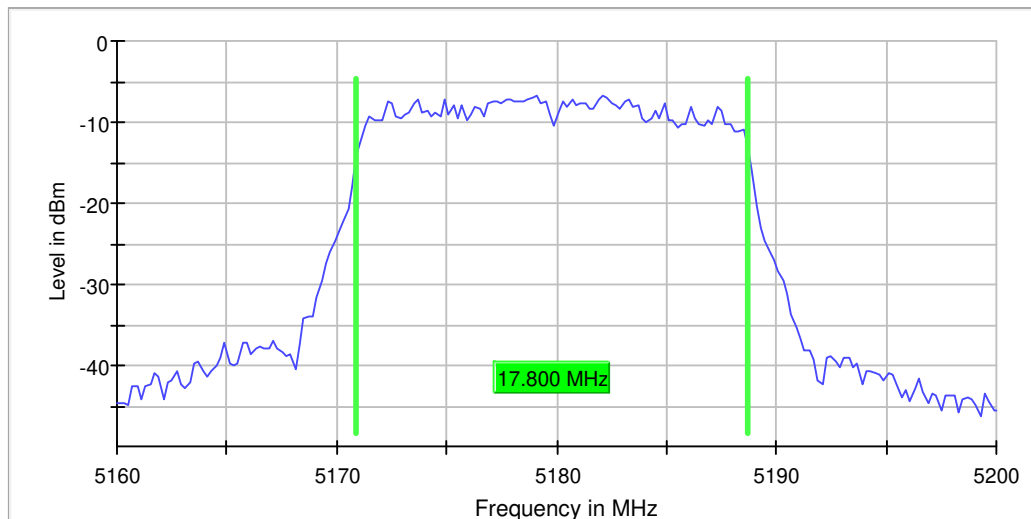
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	17.800000	---	---	5170.900000	5188.700000

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

DUT Frequency (MHz)	Result
5180.000000	PASS



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	<= 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	17 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.04 dB	0.30 dB

Band Edge low (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

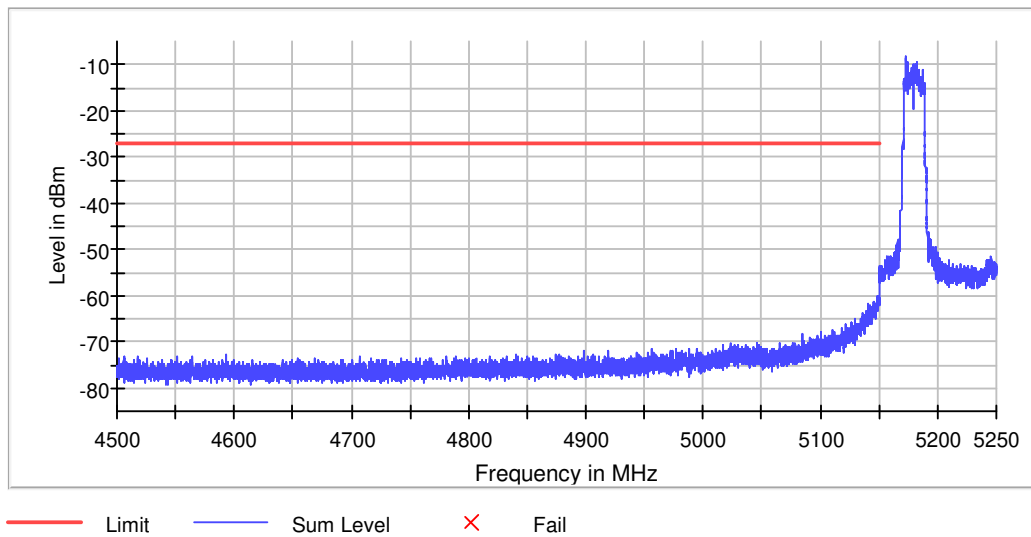
DUT Frequency (MHz)	Result
5180.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
5173.625000	-8.2

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
5149.025000	-60.0	33.0	-27.0	PASS
5148.325000	-60.1	33.1	-27.0	PASS
5148.625000	-60.3	33.3	-27.0	PASS
5148.975000	-60.3	33.3	-27.0	PASS
5148.375000	-60.3	33.3	-27.0	PASS
5148.725000	-60.4	33.4	-27.0	PASS
5148.675000	-60.5	33.5	-27.0	PASS
5149.875000	-60.5	33.5	-27.0	PASS
5148.275000	-60.6	33.6	-27.0	PASS
5149.825000	-60.8	33.8	-27.0	PASS
5149.775000	-60.8	33.8	-27.0	PASS
5149.275000	-61.0	34.0	-27.0	PASS
5149.325000	-61.0	34.0	-27.0	PASS
5149.725000	-61.1	34.1	-27.0	PASS
5149.225000	-61.3	34.3	-27.0	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.25000 GHz	5.25000 GHz
Span	100.000 MHz	100.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	2000	~ 2000
SweepTime	227.813 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	1 / max. 1	max. 1
Stable	0 / 1	1
Max Stable Difference	0.00 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	4.50000 GHz	4.50000 GHz
Stop Frequency	5.15000 GHz	5.15000 GHz
Span	650.000 MHz	650.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	13000	~ 13000
SweepTime	13.000 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	1 / max. 1	max. 1
Stable	0 / 1	1
Max Stable Difference	0.00 dB	0.50 dB

Emission Bandwidth 26 dB (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

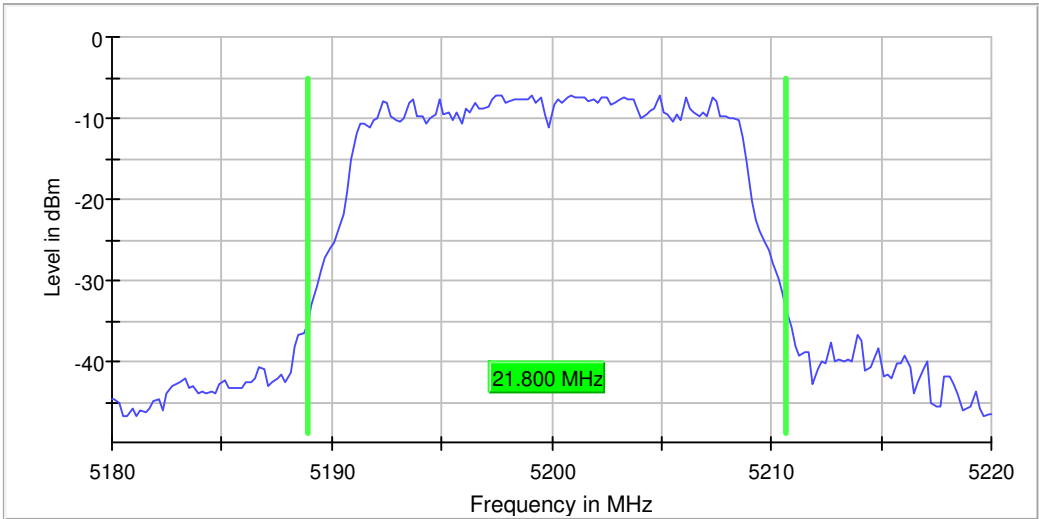
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

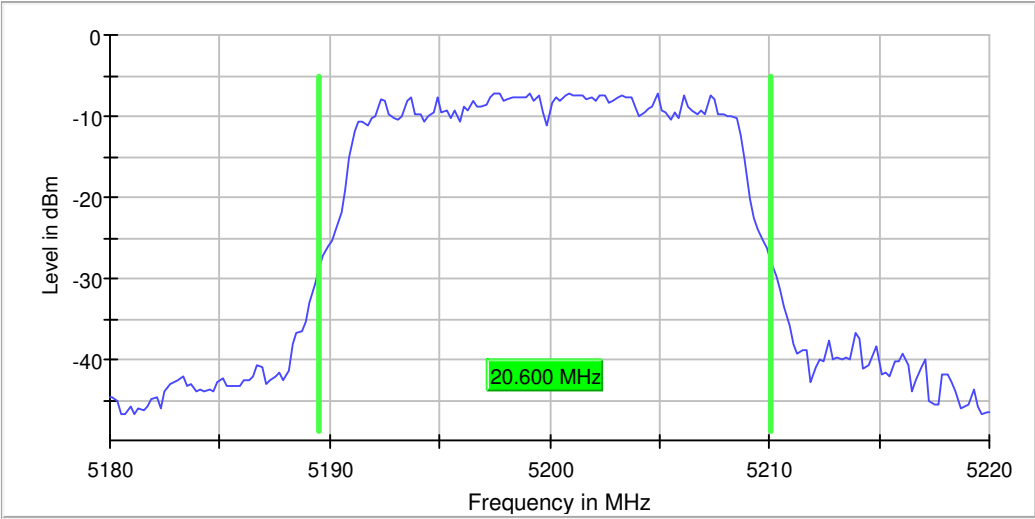
26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5200.000000	21.800000	---	---	5188.900000	5210.700000

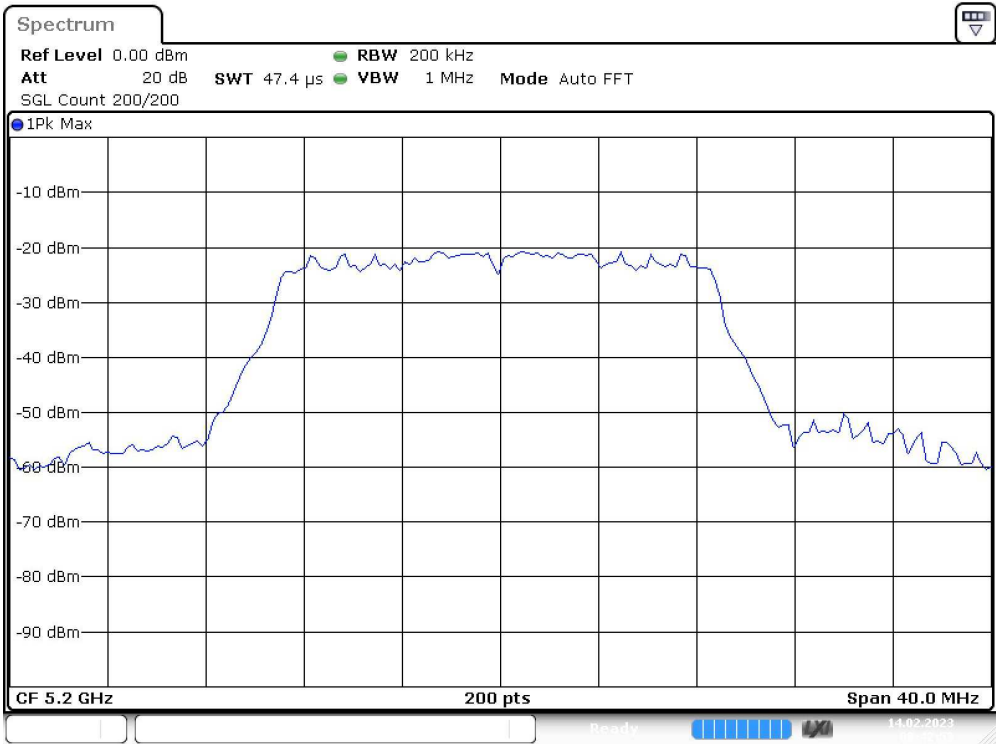
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5200.000000	-7.2	PASS





Bandwidth



Date: 14.FEB.2023 08:42:53

Measurement

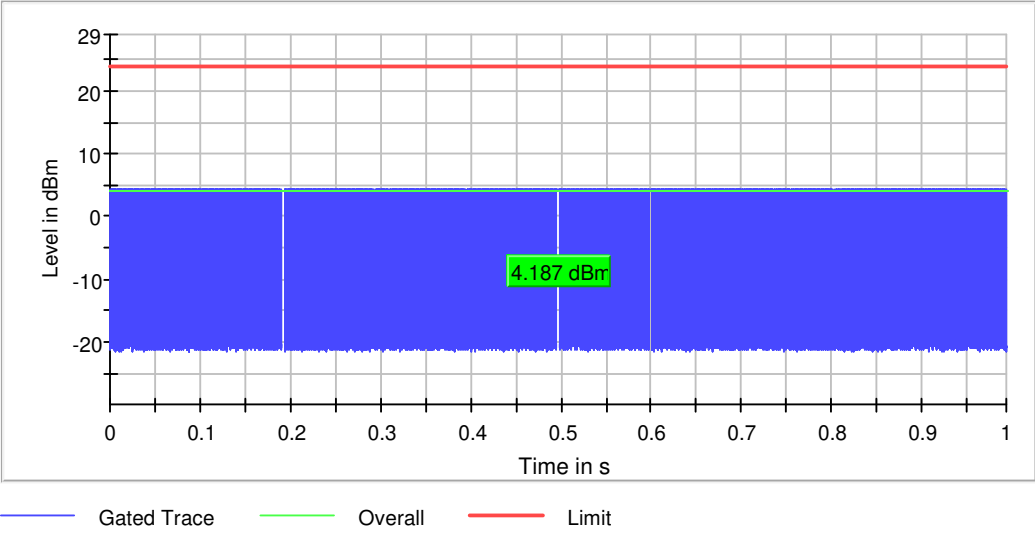
Setting	Instrument Value	Target Value
Start Frequency	5.18000 GHz	5.18000 GHz
Stop Frequency	5.22000 GHz	5.22000 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	~ 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
Sweeptime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	12 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.17 dB	0.30 dB

RF output power (5200 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5200.000000	4.2	24.0	4.2	98.816	PASS



Power Spectral Density (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

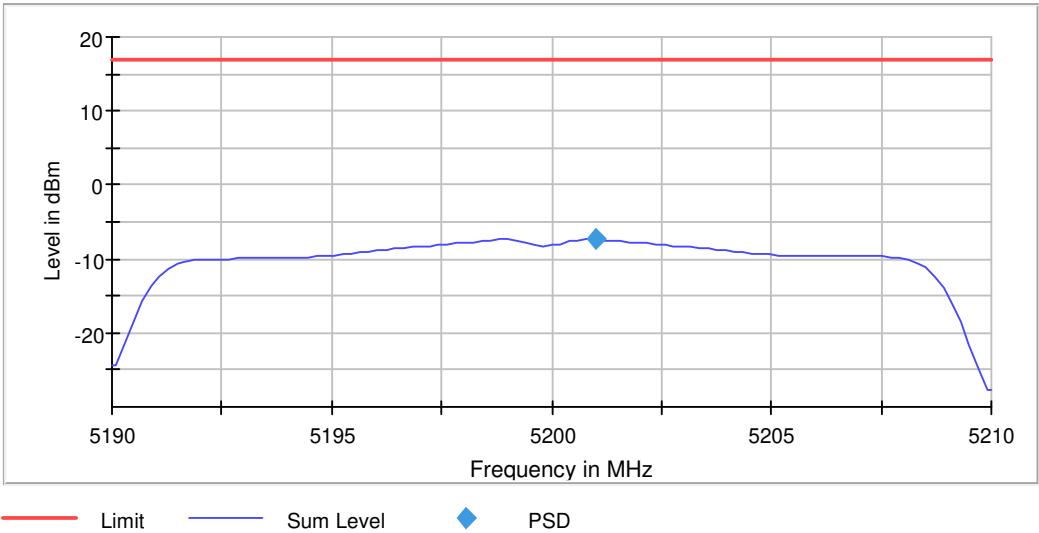
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5200.000000	5200.990099	-7.354	17.0	PASS

Ports

Port	Duty Cycle (%)
1	97.049



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.19000 GHz	5.19000 GHz
Stop Frequency	5.21000 GHz	5.21000 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 s	2.020 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB

Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.03 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

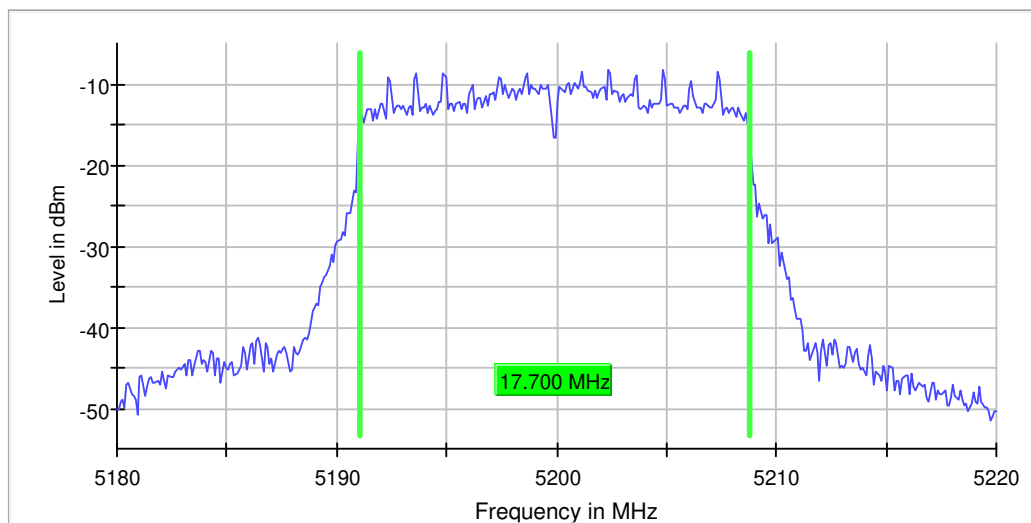
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5200.000000	17.700000	---	---	5191.050000	5208.750000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5200.000000	-8.2	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.18000 GHz	5.18000 GHz
Stop Frequency	5.22000 GHz	5.22000 GHz
Span	40.000 MHz	40.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	400	~ 400
Sweeptime	94.810 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	17 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.30 dB	0.30 dB

Occupied Channel Bandwidth 99% (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

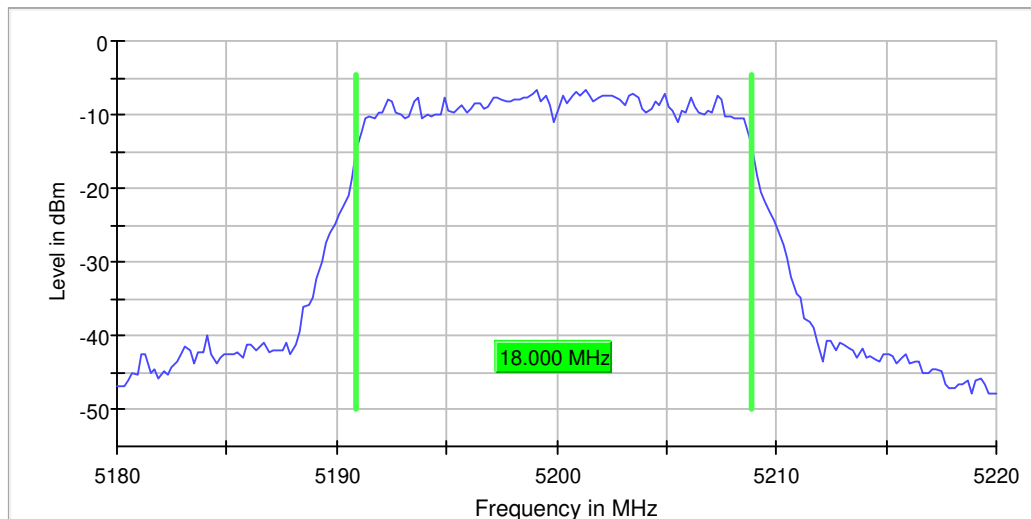
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5200.000000	18.000000	---	---	5190.900000	5208.900000

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

DUT Frequency (MHz)	Result
5200.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.18000 GHz	5.18000 GHz
Stop Frequency	5.22000 GHz	5.22000 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	≤ 200.000 kHz
VBW	1.000 MHz	≥ 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	12 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.30 dB	0.30 dB

Emission Bandwidth 26 dB (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

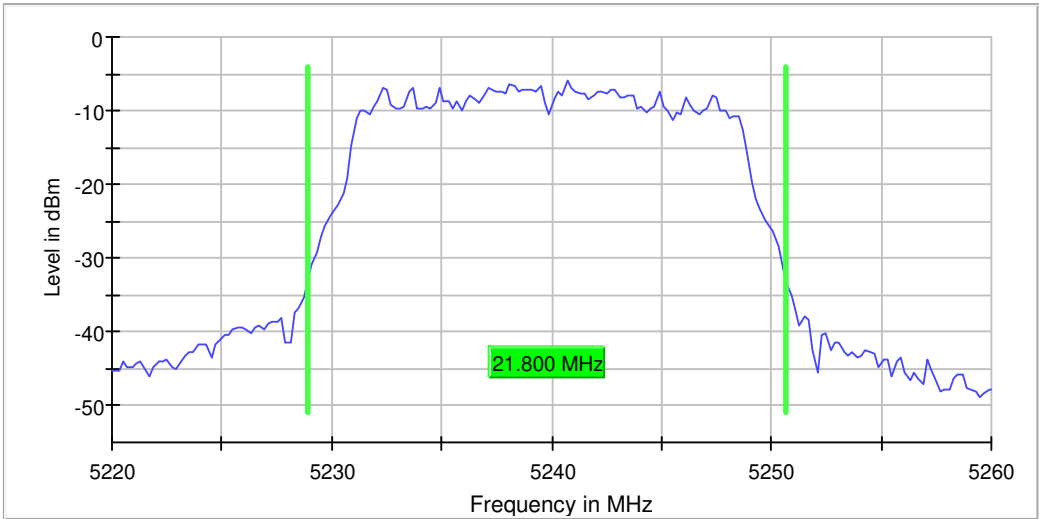
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

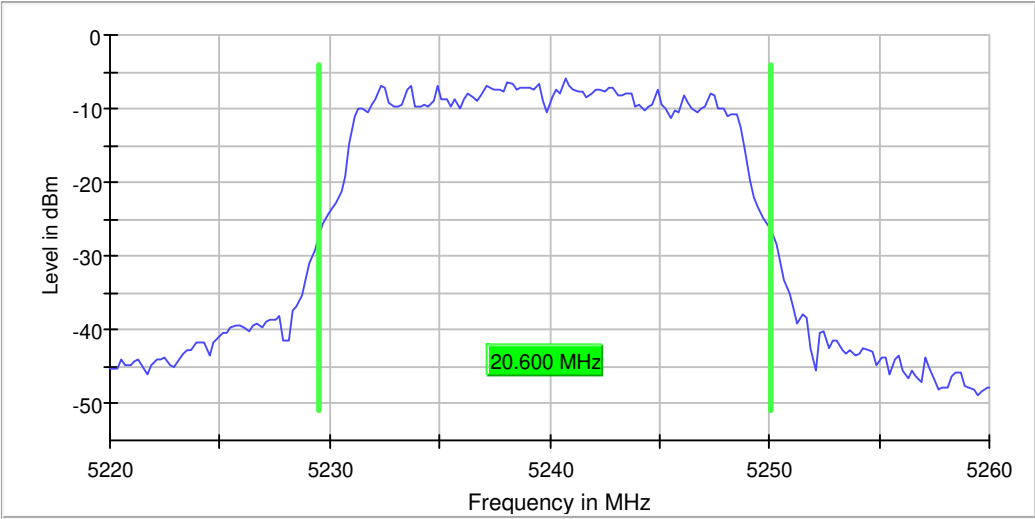
26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	21.800000	---	---	5228.900000	5250.700000

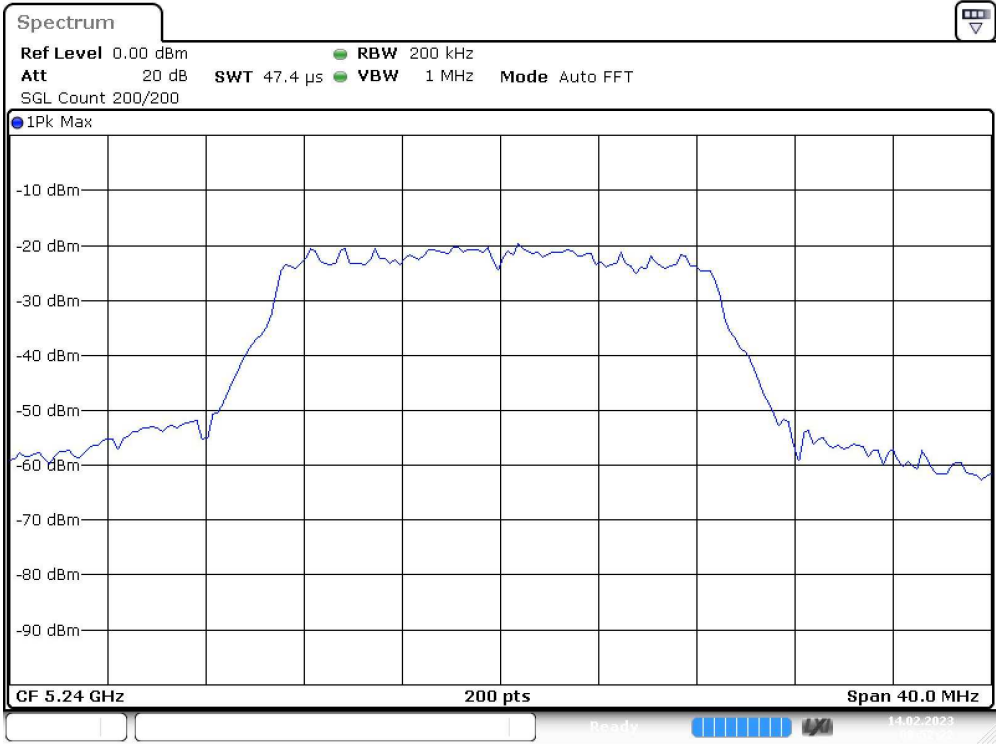
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5240.000000	-6.0	PASS





Bandwidth



Date: 14.FEB.2023 08:52:22

Measurement

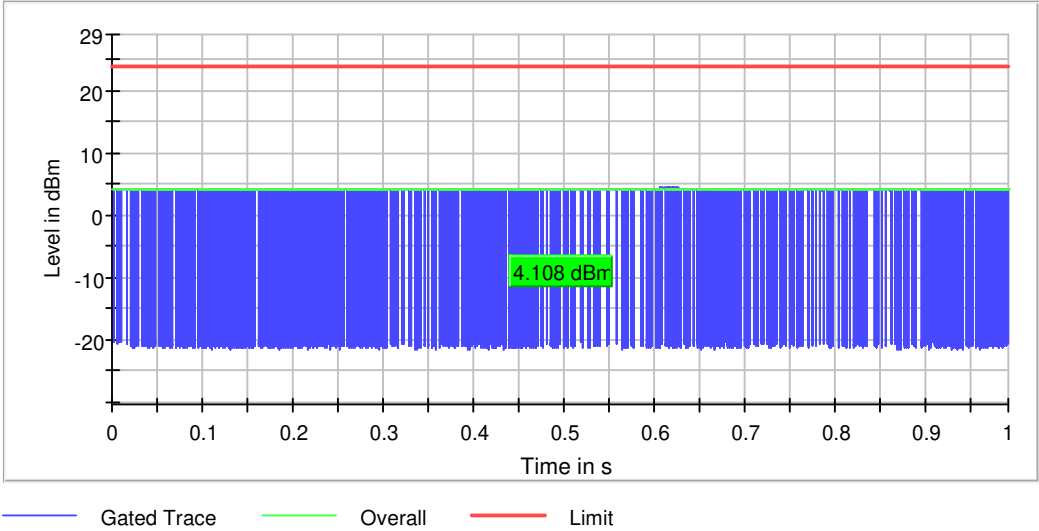
Setting	Instrument Value	Target Value
Start Frequency	5.22000 GHz	5.22000 GHz
Stop Frequency	5.26000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	~ 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	8 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.09 dB	0.30 dB

RF output power (5240 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5240.000000	4.1	24.0	4.1	98.870	PASS



Power Spectral Density (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

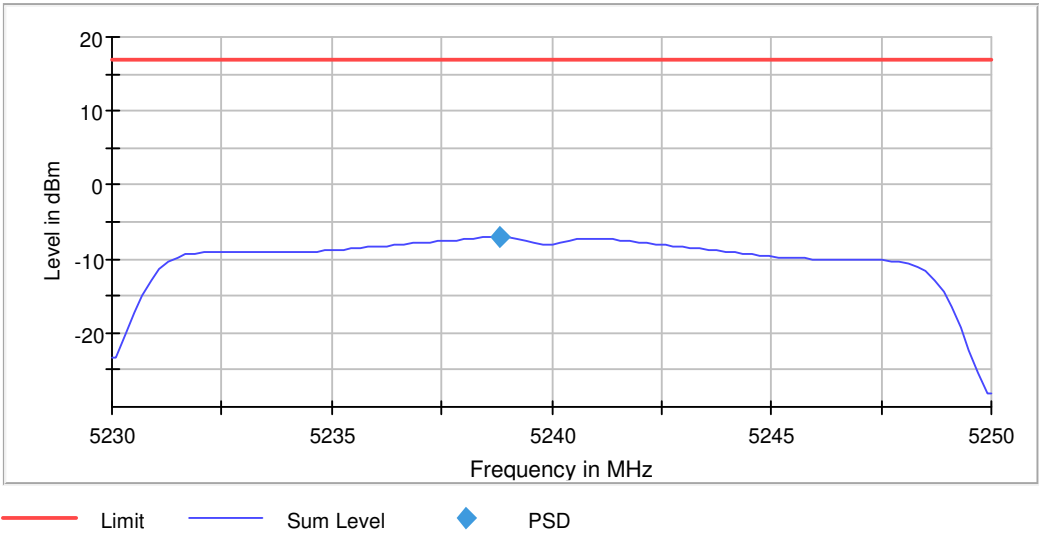
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5240.000000	5238.811881	-7.036	17.0	PASS

Ports

Port	Duty Cycle (%)
1	97.049



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 s	2.020 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB

Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.02 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

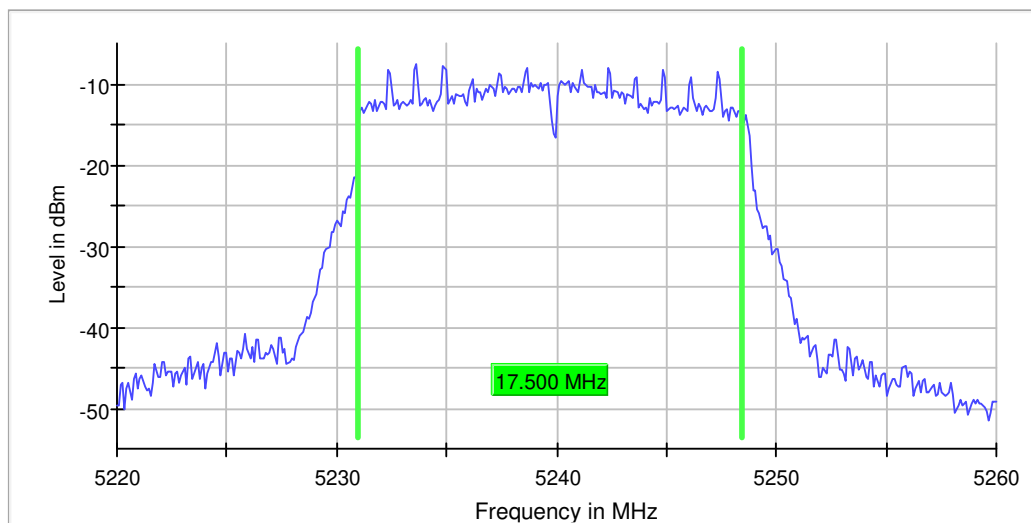
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	17.500000	---	---	5230.950000	5248.450000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5240.000000	-7.6	PASS



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	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	400	~ 400
Sweeptime	94.810 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	16 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.00 dB	0.30 dB

Occupied Channel Bandwidth 99% (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

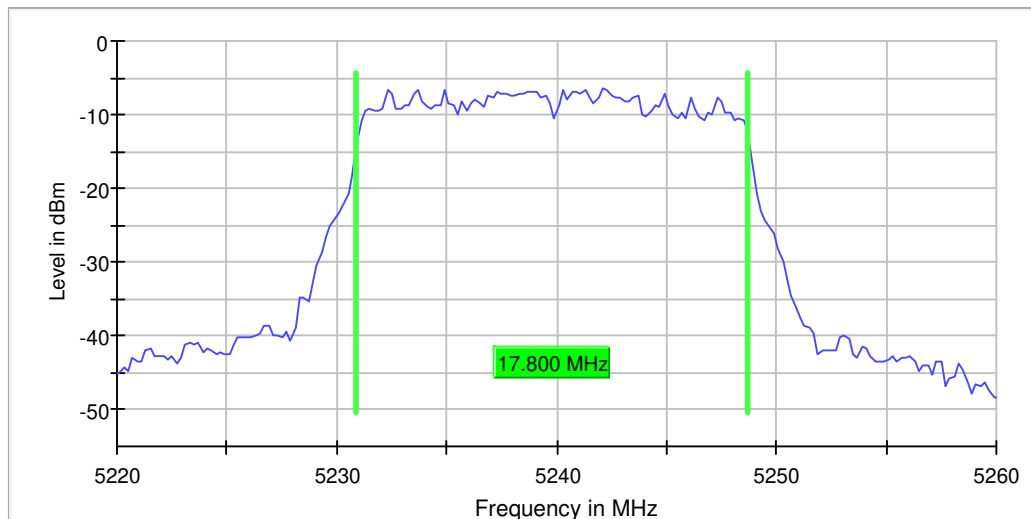
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

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	---	---	5230.900000	5248.700000

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

DUT Frequency (MHz)	Result
5240.000000	PASS



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	200.000 kHz	<= 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	200	~ 200
SweepTime	47.405 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	11 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.28 dB	0.30 dB

Band Edge high (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

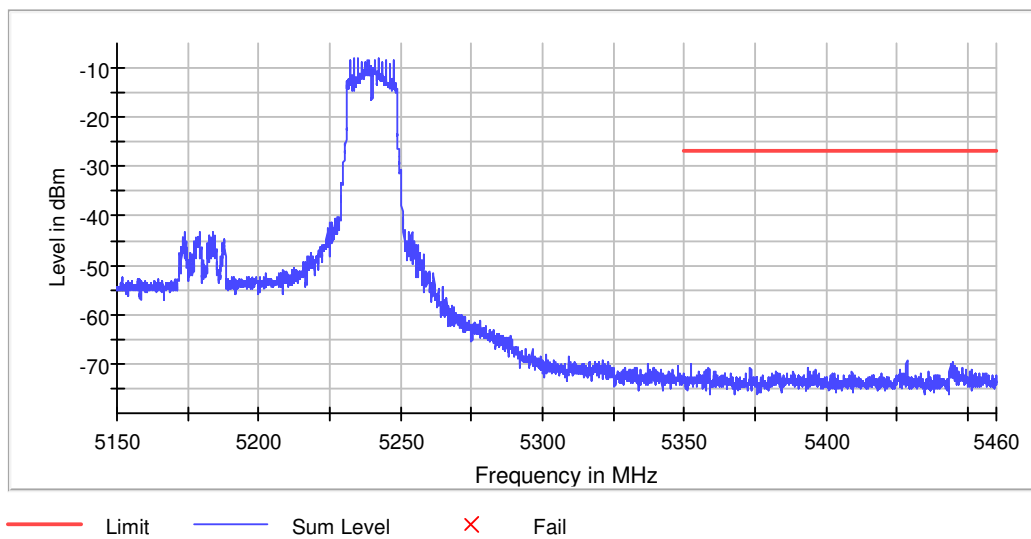
DUT Frequency (MHz)	Result
5240.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
5234.875000	-7.9

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
5428.475000	-69.5	42.5	-27.0	PASS
5444.475000	-69.8	42.8	-27.0	PASS
5444.425000	-69.9	42.9	-27.0	PASS
5443.975000	-70.0	43.0	-27.0	PASS
5428.425000	-70.0	43.0	-27.0	PASS
5428.525000	-70.1	43.1	-27.0	PASS
5352.325000	-70.1	43.1	-27.0	PASS
5352.275000	-70.2	43.2	-27.0	PASS
5443.825000	-70.3	43.3	-27.0	PASS
5443.775000	-70.3	43.3	-27.0	PASS
5444.025000	-70.5	43.5	-27.0	PASS
5445.675000	-70.5	43.5	-27.0	PASS
5445.625000	-70.7	43.7	-27.0	PASS
5445.525000	-70.7	43.7	-27.0	PASS
5445.575000	-70.7	43.7	-27.0	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.25000 GHz	5.25000 GHz
Span	100.000 MHz	100.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	2000	~ 2000
SweepTime	227.813 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	31 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.30 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	5.25000 GHz	5.25000 GHz
Stop Frequency	5.46000 GHz	5.46000 GHz
Span	210.000 MHz	210.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	4200	~ 4200
SweepTime	474.609 μ s	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.45 dB	0.50 dB

FCC 15.407 2015

DUT Information

Frequencies

WLAN CH 38 (5190 MHz)
WLAN CH 159 (5795 MHz)
WLAN CH 102 (5510 MHz)
WLAN CH 134 (5670 MHz)

WLAN CH 46 (5230 MHz)
WLAN CH 54 (5270 MHz)
WLAN CH 110 (5550 MHz)

WLAN CH 151 (5755 MHz)
WLAN CH 62 (5310 MHz)
WLAN CH 118 (5590 MHz)

Bandwidths

40 MHz (40 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

20.000 dBm (20 dBm)

0 dB

Gain Tables

20.000 dBm (20 dBm)

Port 1: 0dBi;

DUT Settings

No. of transmission chains	1
DFS capability	Yes
DFS Mode	Master
Equipment Type	Portable
TPC	No

Hardware Setup: WMS Measurements\Hardware Setup

Spectrum Analyzer:

SA FSV 40 (SA FSV 40) @ VISA (ADR
TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229,
FW 3.40

Vector Generator:

VG SMBV100B (VG SMBV100B) @ VISA (ADR
TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33

Generator:

SMB100Aa (SMB100A) @ VISA (ADR
TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev
2.21.0, 07/2016, CVI 2015

OSP:

OSP-B157W (OSP-B157W) @ VISA (ADR
TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW
1.23.0.2

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Emission Bandwidth 26 dB	5190.000	20.0	40.000000	PASS
RF output power	5190.000	20.0	40.000000	PASS
Power Spectral Density	5190.000	20.0	40.000000	PASS
Minimum Emission Bandwidth 6 dB	5190.000	20.0	40.000000	PASS
Occupied Channel Bandwidth 99%	5190.000	20.0	40.000000	PASS
Band Edge low	5190.000	20.0	40.000000	PASS
Emission Bandwidth 26 dB	5230.000	20.0	40.000000	PASS
RF output power	5230.000	20.0	40.000000	PASS
Power Spectral Density	5230.000	20.0	40.000000	PASS
Minimum Emission Bandwidth 6 dB	5230.000	20.0	40.000000	PASS
Occupied Channel Bandwidth 99%	5230.000	20.0	40.000000	PASS
Band Edge high	5230.000	20.0	40.000000	PASS

Emission Bandwidth 26 dB (5190 MHz; 20.000 dBm; 40 MHz)

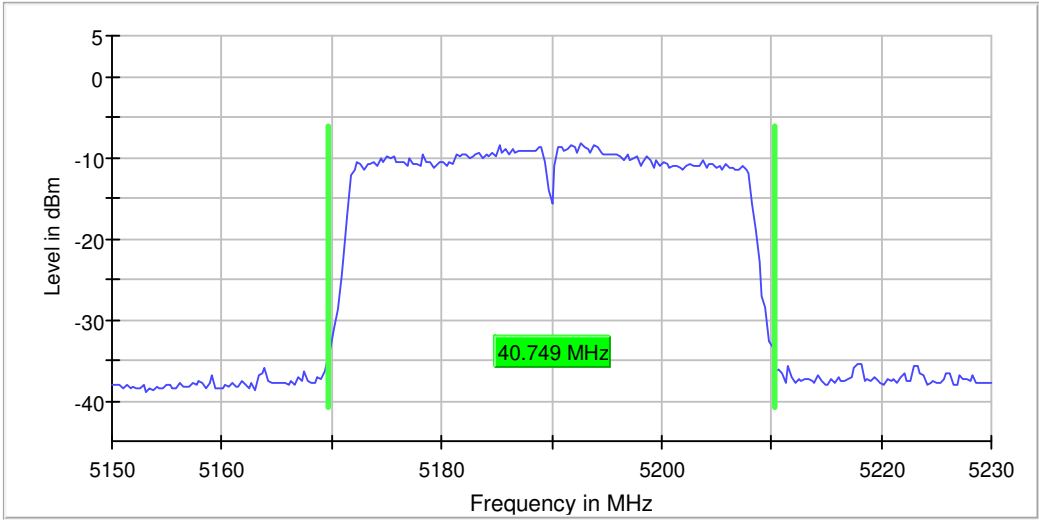
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures
New Rules v01r03 and ANSI C63.10

26 dB Bandwidth

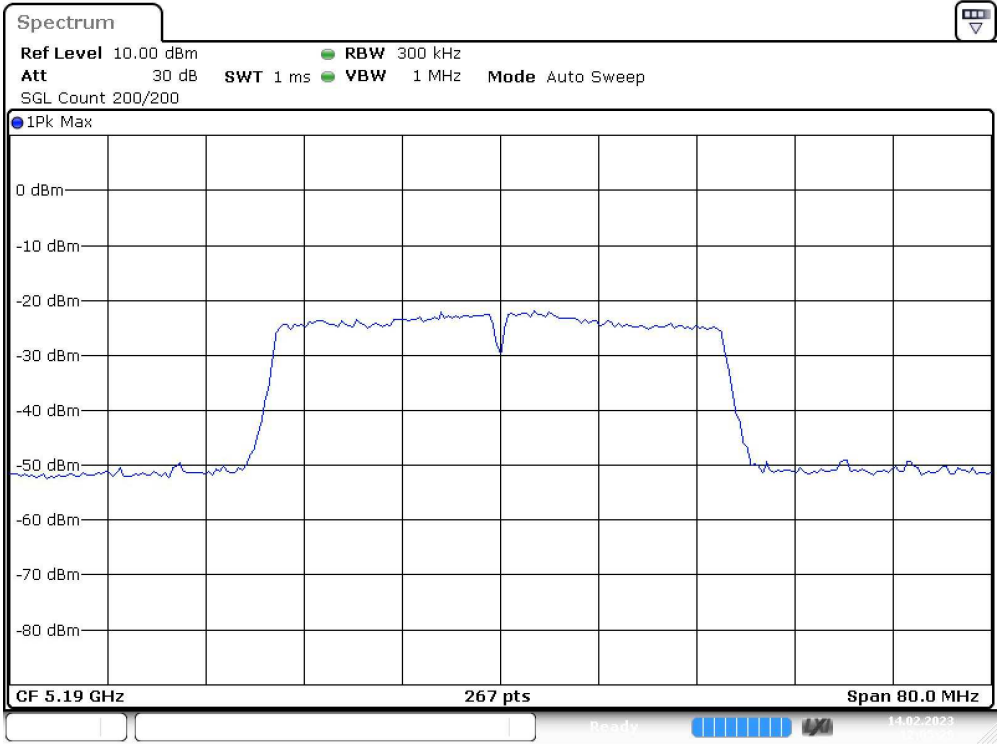
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5190.000000	40.749064	---	---	5169.625468	5210.374532

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5190.000000	-8.3	PASS



Bandwidth



Date: 14.FEB.2023 12:05:30

Measurement

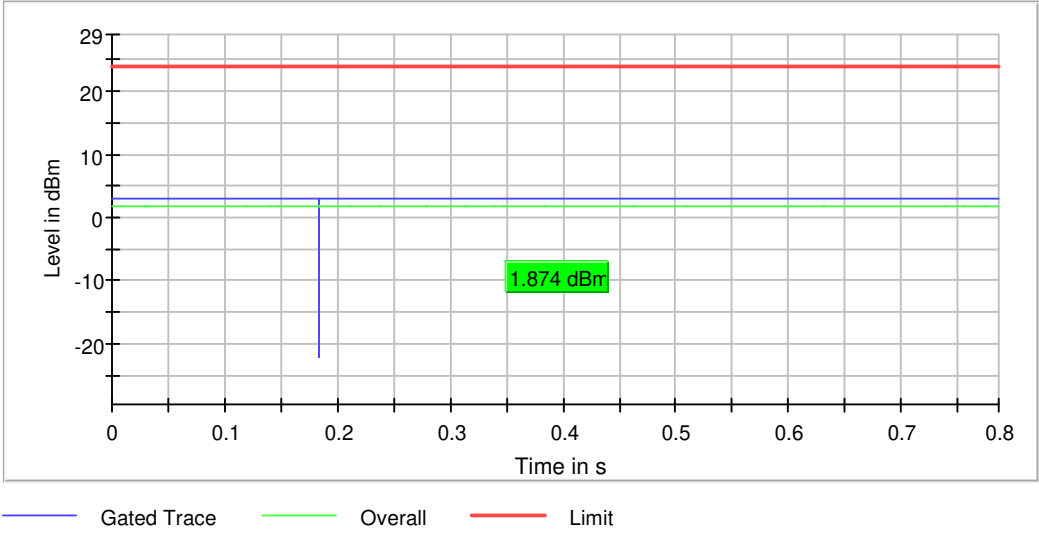
Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.23000 GHz	5.23000 GHz
Span	80.000 MHz	80.000 MHz
RBW	300.000 kHz	~ 400.000 kHz
VBW	1.000 MHz	>= 900.000 kHz
SweepPoints	267	~ 267
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	44 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.29 dB	0.30 dB

RF output power (5190 MHz; 20.000 dBm; 40 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5190.000000	1.9	24.0	1.9	100.000	PASS



Power Spectral Density (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Max level of analyzer (-11.3 dBm) more than 31.0 dB below the nominal power level.

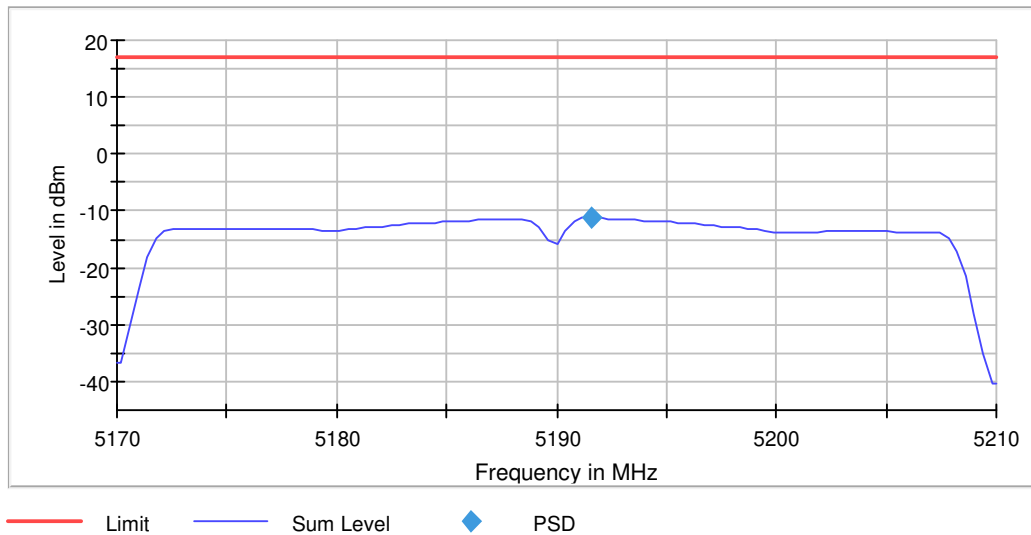
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5190.000000	5191.584158	-11.273	17.0	PASS

Ports

Port	Duty Cycle (%)
1	94.261



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 s	2.020 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO

Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.02 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

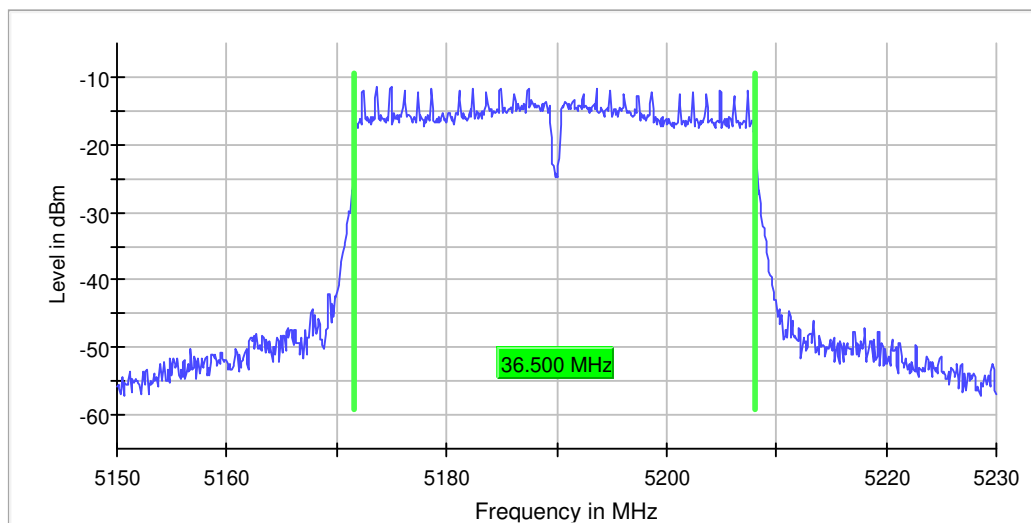
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5190.000000	36.500000	---	---	5171.650000	5208.150000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5190.000000	-11.5	PASS



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	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	800	~ 800
Sweptime	1.070 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	20 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.28 dB	0.30 dB

Occupied Channel Bandwidth 99% (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

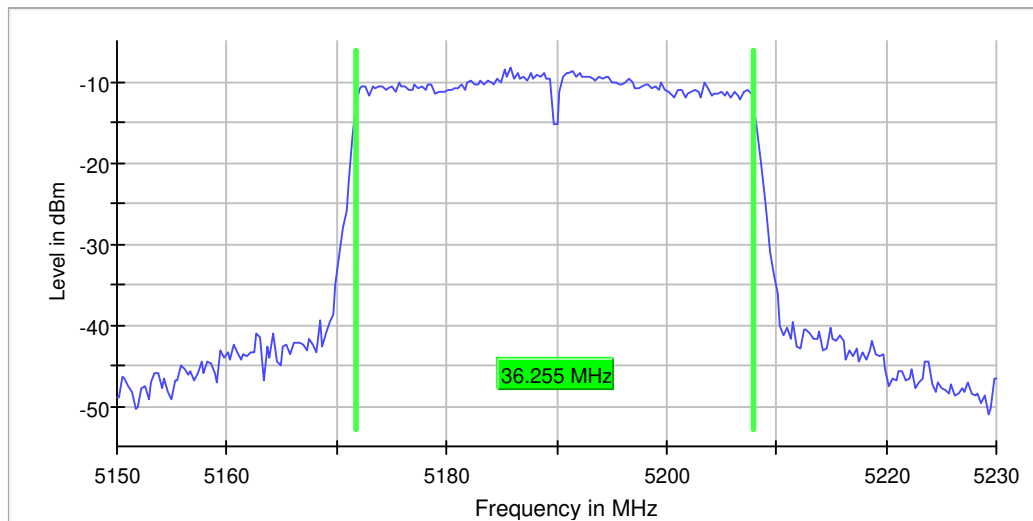
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5190.000000	36.254682	---	---	5171.722846	5207.977528

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

DUT Frequency (MHz)	Result
5190.000000	PASS



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	300.000 kHz	<= 400.000 kHz
VBW	1.000 MHz	>= 900.000 kHz
SweepPoints	267	~ 267
SweepTime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	10 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.26 dB	0.30 dB

Band Edge low (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

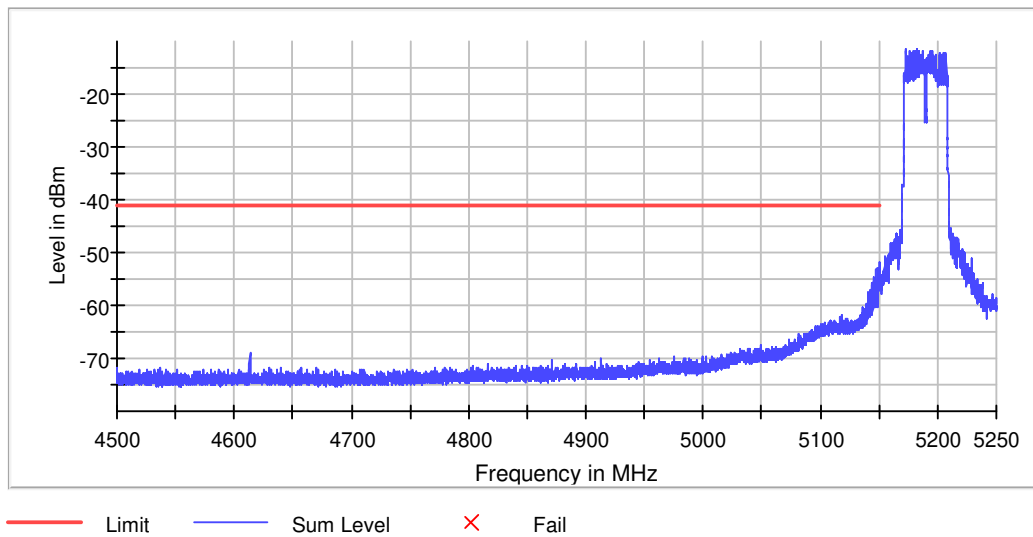
DUT Frequency (MHz)	Result
5190.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
5173.625000	-11.5

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
5148.025000	-52.9	11.7	-41.2	PASS
5148.075000	-53.2	12.0	-41.2	PASS
5147.975000	-53.3	12.1	-41.2	PASS
5149.925000	-53.6	12.4	-41.2	PASS
5149.875000	-53.6	12.4	-41.2	PASS
5146.075000	-54.7	13.5	-41.2	PASS
5146.025000	-55.2	13.9	-41.2	PASS
5149.525000	-55.3	14.1	-41.2	PASS
5149.575000	-55.3	14.1	-41.2	PASS
5149.475000	-55.3	14.1	-41.2	PASS
5148.375000	-55.4	14.1	-41.2	PASS
5149.275000	-55.4	14.2	-41.2	PASS
5149.625000	-55.5	14.3	-41.2	PASS
5148.625000	-55.5	14.3	-41.2	PASS
5146.175000	-55.5	14.3	-41.2	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.25000 GHz	5.25000 GHz
Span	100.000 MHz	100.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	2000	~ 2000
SweepTime	227.813 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	77 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.44 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	4.50000 GHz	4.50000 GHz
Stop Frequency	5.15000 GHz	5.15000 GHz
Span	650.000 MHz	650.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	13000	~ 13000
SweepTime	13.000 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	69 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Emission Bandwidth 26 dB (5230 MHz; 20.000 dBm; 40 MHz)

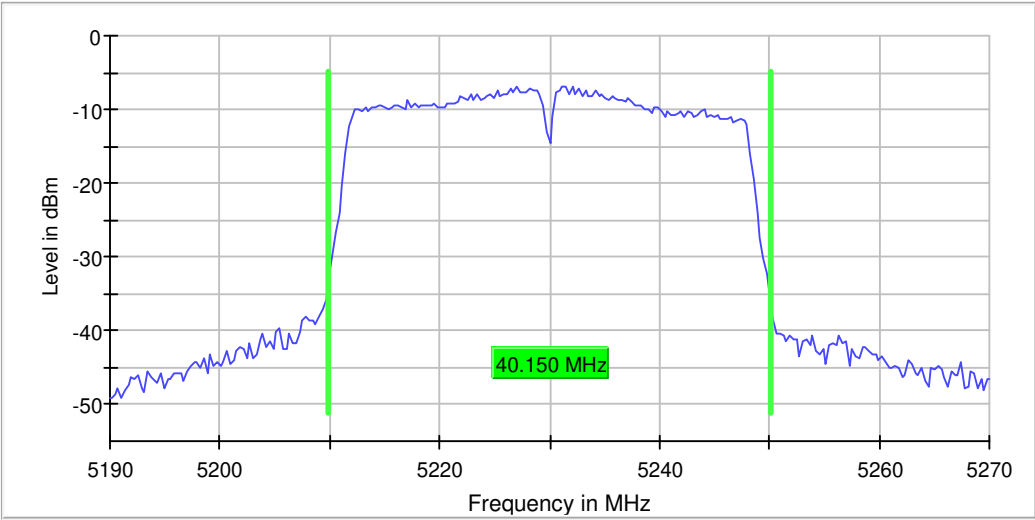
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures
New Rules v01r03 and ANSI C63.10

26 dB Bandwidth

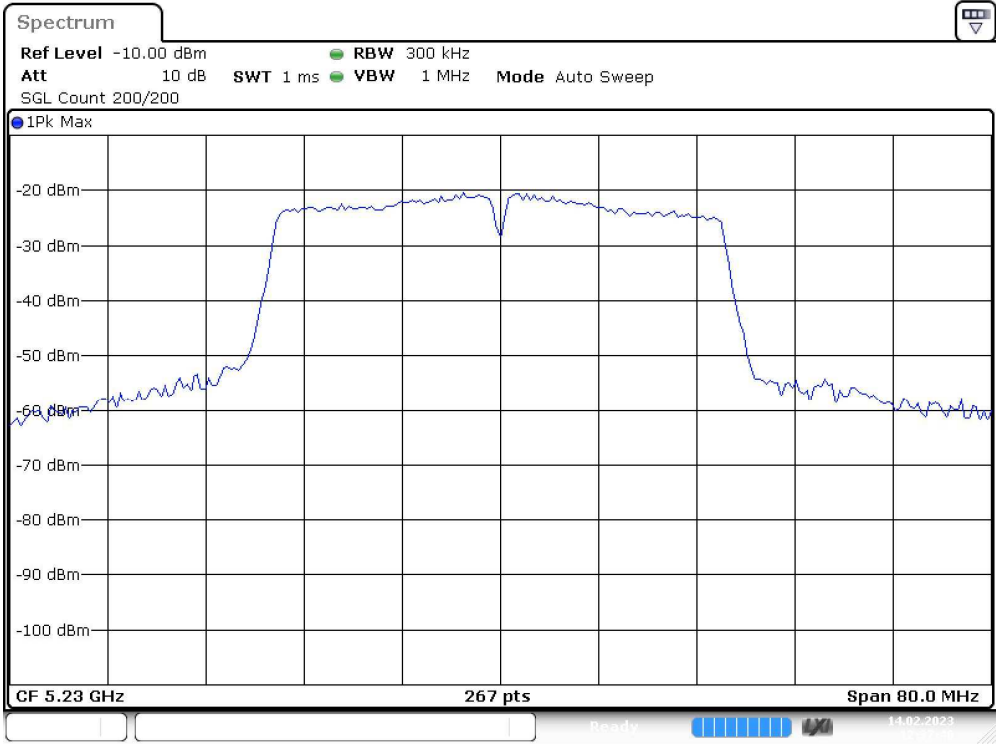
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5230.000000	40.149812	---	---	5209.925094	5250.074906

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5230.000000	-6.8	PASS



Bandwidth



Date: 14.FEB.2023 12:37:40

Measurement

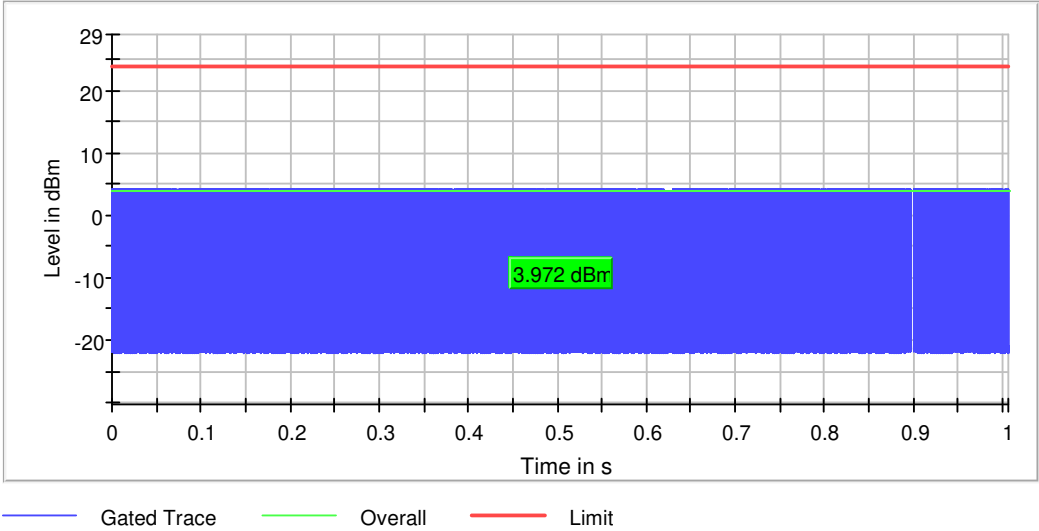
Setting	Instrument Value	Target Value
Start Frequency	5.19000 GHz	5.19000 GHz
Stop Frequency	5.27000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	300.000 kHz	~ 400.000 kHz
VBW	1.000 MHz	>= 900.000 kHz
SweepPoints	267	~ 267
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	58 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.16 dB	0.30 dB

RF output power (5230 MHz; 20.000 dBm; 40 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5230.000000	4.0	24.0	4.0	99.482	PASS



Power Spectral Density (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

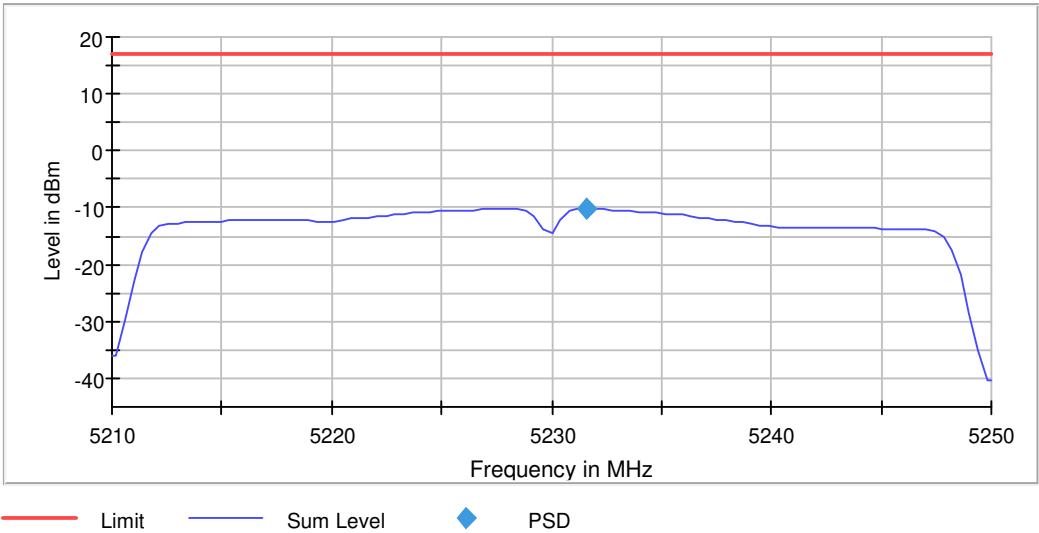
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5230.000000	5231.584158	-10.150	17.0	PASS

Ports

Port	Duty Cycle (%)
1	94.273



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 s	2.020 s
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	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB

Run	2 / max. 15	max. 15
Stable	1 / 1	1
Max Stable Difference	0.02 dB	0.30 dB

Minimum Emission Bandwidth 6 dB (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

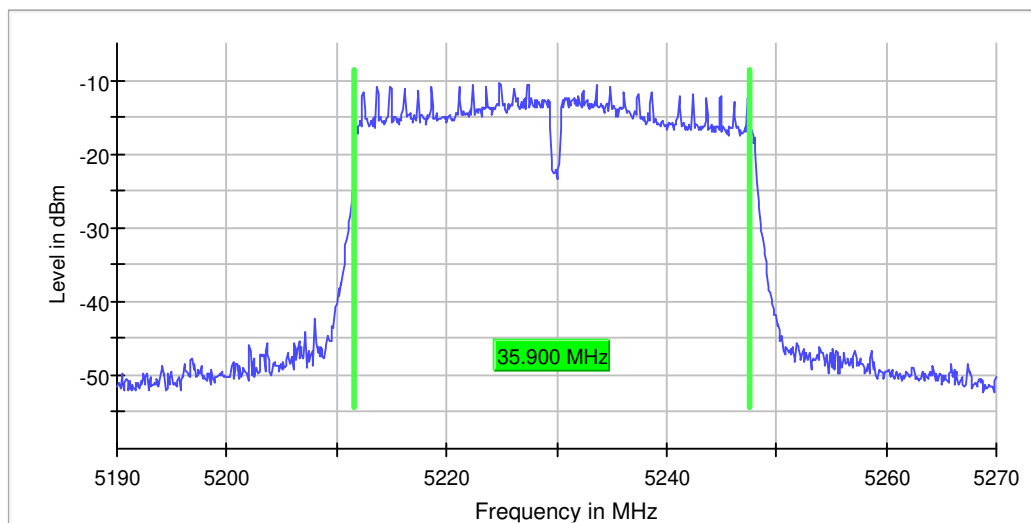
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5230.000000	35.900000	---	---	5211.650000	5247.550000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
5230.000000	-10.5	PASS



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	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	800	~ 800
Sweeptime	1.070 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace

Stablevalue	0.30 dB	0.30 dB
Run	33 / max. 150	max. 150
Stable	1 / 1	1
Max Stable Difference	0.25 dB	0.30 dB

Occupied Channel Bandwidth 99% (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

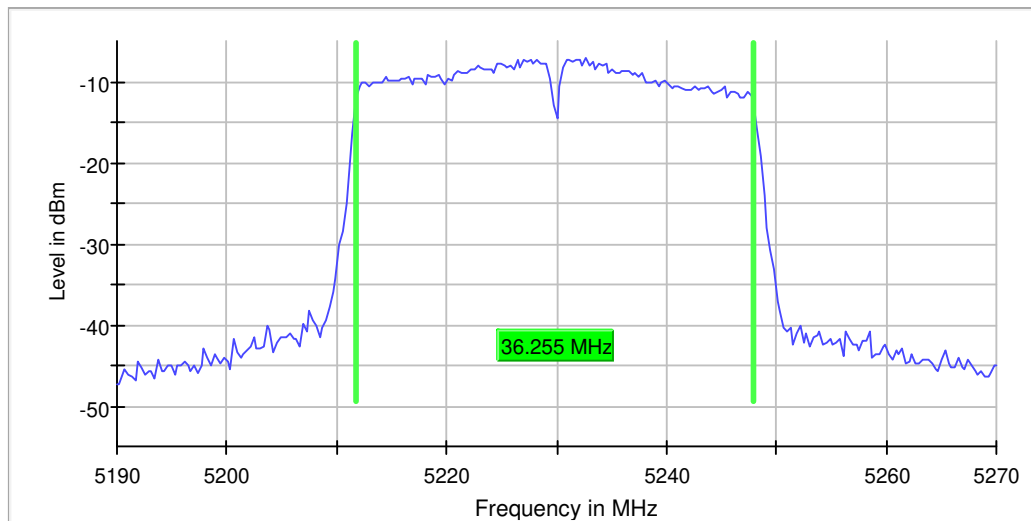
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5230.000000	36.254682	---	---	5211.722846	5247.977528

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

DUT Frequency (MHz)	Result
5230.000000	PASS



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	300.000 kHz	<= 400.000 kHz
VBW	1.000 MHz	>= 900.000 kHz
SweepPoints	267	~ 267
SweepTime	1.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	27 / max. 150	max. 150

Stable	1 / 1	1
Max Stable Difference	0.12 dB	0.30 dB

Band Edge high (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

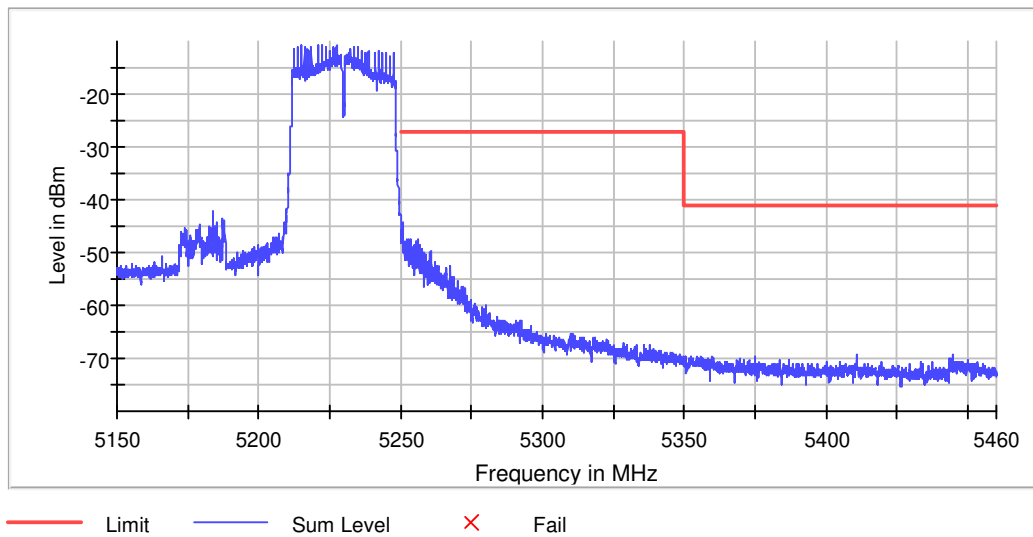
DUT Frequency (MHz)	Result
5230.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
5222.375000	-10.6

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
5251.125000	-44.2	17.2	-27.0	PASS
5251.175000	-44.7	17.7	-27.0	PASS
5251.075000	-44.8	17.8	-27.0	PASS
5250.125000	-45.6	18.6	-27.0	PASS
5250.025000	-45.8	18.8	-27.0	PASS
5250.075000	-46.0	19.0	-27.0	PASS
5250.175000	-46.0	19.0	-27.0	PASS
5250.525000	-46.1	19.1	-27.0	PASS
5250.475000	-46.2	19.2	-27.0	PASS
5250.225000	-46.2	19.2	-27.0	PASS
5250.425000	-46.6	19.6	-27.0	PASS
5250.275000	-47.4	20.4	-27.0	PASS
5256.075000	-47.5	20.5	-27.0	PASS
5252.725000	-47.5	20.5	-27.0	PASS
5252.675000	-47.5	20.5	-27.0	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.25000 GHz	5.25000 GHz
Span	100.000 MHz	100.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	2000	~ 2000
SweepTime	227.813 μ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	55 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.43 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	5.25000 GHz	5.25000 GHz
Stop Frequency	5.46000 GHz	5.46000 GHz
Span	210.000 MHz	210.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	4200	~ 4200
SweepTime	474.609 μ s	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	19 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

FCC 15.407 2015

DUT Information

Frequencies

WLAN CH 36 (5180 MHz)	WLAN CH 40 (5200 MHz)	WLAN CH 48 (5240 MHz)
WLAN CH 149 (5745 MHz)	WLAN CH 157 (5785 MHz)	WLAN CH 165 (5825 MHz)
WLAN CH 52 (5260 MHz)	WLAN CH 56 (5280 MHz)	WLAN CH 64 (5320 MHz)
WLAN CH 100 (5500 MHz)	WLAN CH 120 (5600 MHz)	WLAN CH 140 (5700 MHz)
WLAN CH 116 (5580 MHz)	WLAN CH 151 (5755 MHz)	WLAN CH 159 (5795 MHz)
WLAN CH 155 (5775 MHz)		

Bandwidths

20 MHz (20 MHz)	40 MHz (40 MHz)	80 MHz (80 MHz)
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Power

20.000 dBm (20 dBm)

Beamforming Gain

20.000 dBm (20 dBm)	0 dB
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Gain Tables

20.000 dBm (20 dBm)	Port 1: 0dBi;
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DUT Settings

No. of transmission chains	1
DFS capability	Yes
DFS Mode	Master
Equipment Type	Portable
TPC	No

Hardware Setup: WMS Measurements\Hardware Setup

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40
Vector Generator:	VG SMBV100A (VG SMBV100A) @ VISA (ADR TCPIP::192.168.48.25::INST0::INSTR), SN 260451, FW 4.15.125.49
Generator:	SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015
OSP:	OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. / , FW 1.23.0.2

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Tx Spurious Emission	5180.000	20.0	20.000000	PASS
Tx Spurious Emission	5200.000	20.0	20.000000	PASS
Tx Spurious Emission	5240.000	20.0	20.000000	PASS

Tx Spurious Emission (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5180.000000	PASS

Final measurements

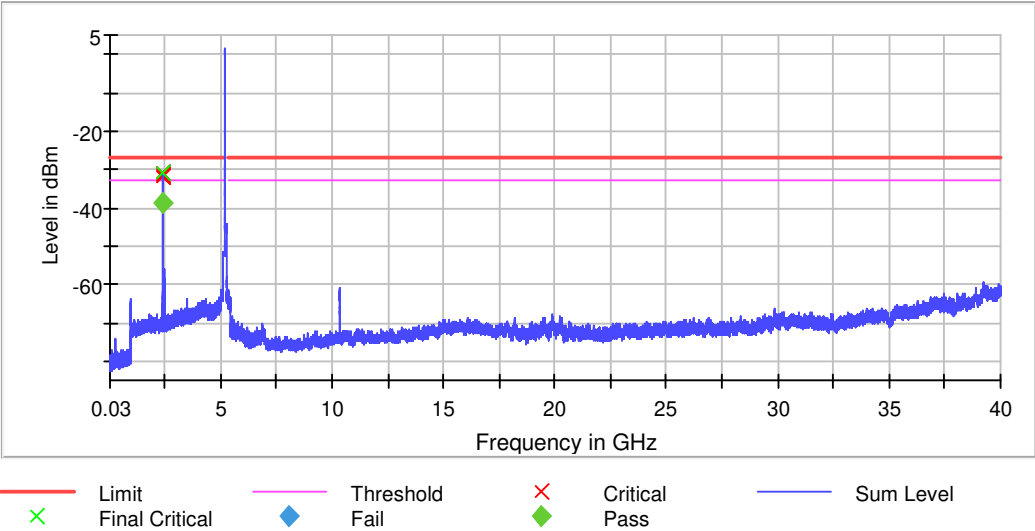
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2412.500000	-31.1	-38.9	-27.0	11.9	PASS

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2412.500000	-31.1	4.1	-27.0
2411.500000	-31.1	4.1	-27.0
2413.500000	-31.6	4.6	-27.0
2414.500000	-31.8	4.8	-27.0
2410.500000	-32.0	5.0	-27.0
2409.500000	-33.8	6.8	-27.0
2415.500000	-35.4	8.4	-27.0
2416.500000	-36.0	9.0	-27.0
2408.500000	-37.1	10.1	-27.0
2417.500000	-39.3	12.3	-27.0
2407.500000	-41.0	14.0	-27.0
2418.500000	-44.3	17.3	-27.0
2406.500000	-44.9	17.9	-27.0
5149.500000	-47.4	20.4	-27.0
5147.500000	-48.7	21.7	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	52 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.36 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	≤ 1.000 MHz
VBW	3.000 MHz	≥ 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	6 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Final Measurement 2

Setting	Instrument Value	Target Value
Span	ZeroSpan	ZeroSpan
RBW	1.000 MHz	~ 1.000 MHz
VBW	3.000 MHz	~ 3.000 MHz
SweepPoints	10001	~ 10001
SweepTime	50.000 ms	50.000 ms
Reference Level	30.000 dBm	30.000 dBm
Attenuation	50.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
SweepType	Sweep	AUTO
Preamp	off	off

Tx Spurious Emission (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5200.000000	PASS

Final measurements

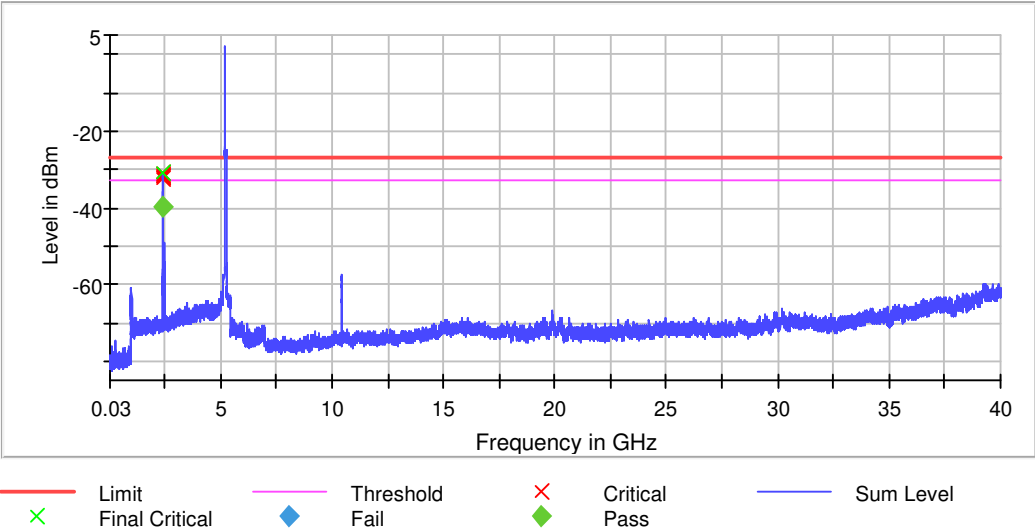
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2412.500000	-30.7	-39.5	-27.0	12.5	PASS

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2412.500000	-30.7	3.7	-27.0
2413.500000	-31.3	4.3	-27.0
2410.500000	-31.8	4.8	-27.0
2414.500000	-32.0	5.0	-27.0
2411.500000	-32.2	5.2	-27.0
2409.500000	-34.0	7.0	-27.0
2416.500000	-36.0	9.0	-27.0
2415.500000	-37.2	10.2	-27.0
2408.500000	-37.7	10.7	-27.0
2417.500000	-39.1	12.1	-27.0
2407.500000	-42.1	15.1	-27.0
2418.500000	-46.4	19.4	-27.0
2406.500000	-46.6	19.6	-27.0
2419.500000	-48.8	21.8	-27.0
2459.500000	-49.0	22.0	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	49 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.36 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	≤ 1.000 MHz
VBW	3.000 MHz	≥ 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Final Measurement 2

Setting	Instrument Value	Target Value
Span	ZeroSpan	ZeroSpan
RBW	1.000 MHz	~ 1.000 MHz
VBW	3.000 MHz	~ 3.000 MHz
SweepPoints	10001	~ 10001
SweepTime	50.000 ms	50.000 ms
Reference Level	30.000 dBm	30.000 dBm
Attenuation	50.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
SweepType	Sweep	AUTO
Preamp	off	off

Tx Spurious Emission (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5240.000000	PASS

Final measurements

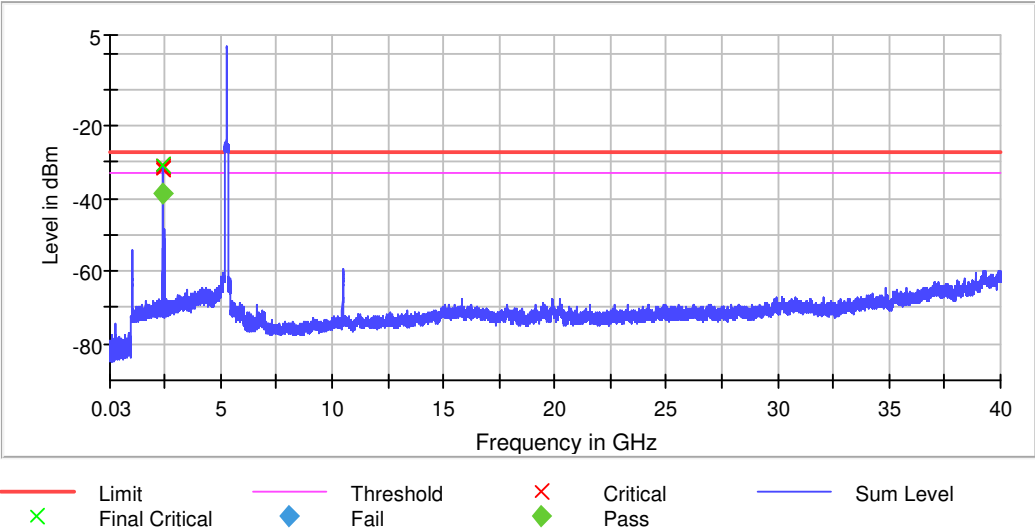
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2412.500000	-30.7	-38.9	-27.0	11.9	PASS

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2412.500000	-30.7	3.7	-27.0
2411.500000	-31.0	4.0	-27.0
2413.500000	-31.1	4.1	-27.0
2414.500000	-31.7	4.7	-27.0
2410.500000	-32.1	5.1	-27.0
2415.500000	-33.7	6.7	-27.0
2409.500000	-33.8	6.8	-27.0
2408.500000	-36.5	9.5	-27.0
2416.500000	-36.5	9.5	-27.0
2417.500000	-38.8	11.8	-27.0
2407.500000	-42.3	15.3	-27.0
2418.500000	-43.3	16.3	-27.0
2445.500000	-48.6	21.6	-27.0
2419.500000	-48.7	21.7	-27.0
2406.500000	-48.8	21.8	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	≤ 1.000 MHz
VBW	3.000 MHz	≥ 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Final Measurement 2

Setting	Instrument Value	Target Value
Span	ZeroSpan	ZeroSpan
RBW	1.000 MHz	~ 1.000 MHz
VBW	3.000 MHz	~ 3.000 MHz
SweepPoints	10001	~ 10001
SweepTime	50.000 ms	50.000 ms
Reference Level	30.000 dBm	30.000 dBm
Attenuation	50.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
SweepType	Sweep	AUTO
Preamp	off	off

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DUT Information

Frequencies

WLAN CH 36 (5180 MHz)	WLAN CH 40 (5200 MHz)	WLAN CH 48 (5240 MHz)
WLAN CH 149 (5745 MHz)	WLAN CH 157 (5785 MHz)	WLAN CH 165 (5825 MHz)
WLAN CH 52 (5260 MHz)	WLAN CH 56 (5280 MHz)	WLAN CH 64 (5320 MHz)
WLAN CH 100 (5500 MHz)	WLAN CH 120 (5600 MHz)	WLAN CH 140 (5700 MHz)
WLAN CH 116 (5580 MHz)	WLAN CH 151 (5755 MHz)	WLAN CH 159 (5795 MHz)
WLAN CH 155 (5775 MHz)		

Bandwidths

20 MHz (20 MHz)	40 MHz (40 MHz)	80 MHz (80 MHz)
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Power

20.000 dBm (20 dBm)

Beamforming Gain

20.000 dBm (20 dBm)	0 dB
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Gain Tables

20.000 dBm (20 dBm)	Port 1: 0dBi;
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DUT Settings

No. of transmission chains	1
DFS capability	Yes
DFS Mode	Master
Equipment Type	Portable
TPC	No

Hardware Setup: WMS Measurements\Hardware Setup

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40
Vector Generator:	VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33
Generator:	SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015
OSP:	OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Tx Spurious Emission	5180.000	20.0	20.000000	PASS
Tx Spurious Emission	5200.000	20.0	20.000000	PASS
Tx Spurious Emission	5240.000	20.0	20.000000	PASS

Tx Spurious Emission (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5180.000000	PASS

Final measurements

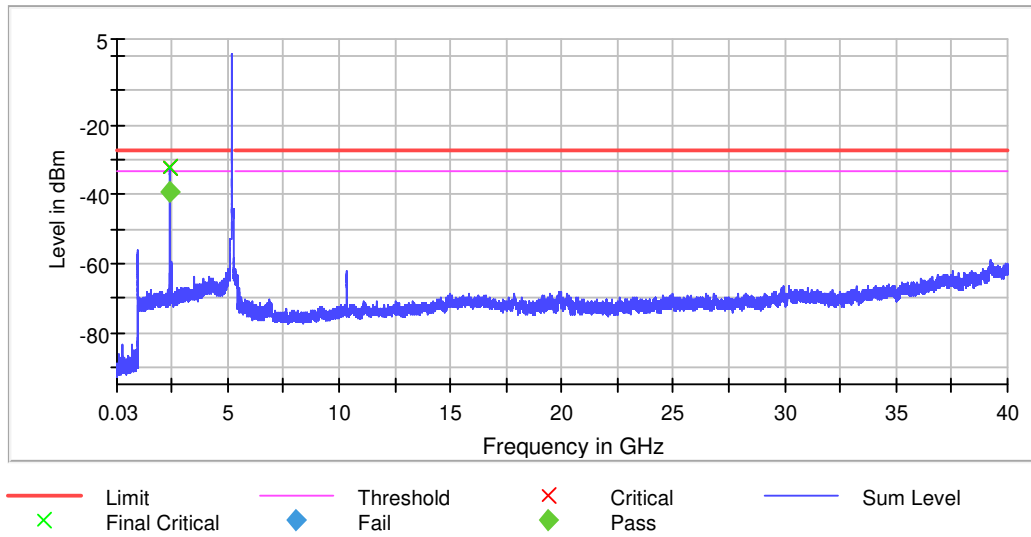
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2414.500000	-32.2	-39.5	-27.0	12.5	PASS

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2414.500000	-32.2	5.2	-27.0
2413.500000	-32.4	5.4	-27.0
2412.500000	-33.4	6.4	-27.0
2416.500000	-33.9	6.9	-27.0
2415.500000	-34.3	7.3	-27.0
2411.500000	-35.7	8.7	-27.0
2410.500000	-36.1	9.1	-27.0
2417.500000	-36.6	9.6	-27.0
2409.500000	-38.3	11.3	-27.0
2418.500000	-39.8	12.8	-27.0
2408.500000	-40.5	13.5	-27.0
2419.500000	-42.6	15.6	-27.0
2407.500000	-44.0	17.0	-27.0
2406.500000	-47.3	20.3	-27.0
2420.500000	-47.3	20.3	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	55 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	≤ 1.000 MHz
VBW	3.000 MHz	≥ 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Final Measurement 2

Setting	Instrument Value	Target Value
Span	ZeroSpan	ZeroSpan
RBW	1.000 MHz	~ 1.000 MHz
VBW	3.000 MHz	~ 3.000 MHz
SweepPoints	10001	~ 10001
SweepTime	50.000 ms	50.000 ms
Reference Level	30.000 dBm	30.000 dBm
Attenuation	50.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
SweepType	Sweep	AUTO
Preamp	off	off

Tx Spurious Emission (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5200.000000	PASS

Final measurements

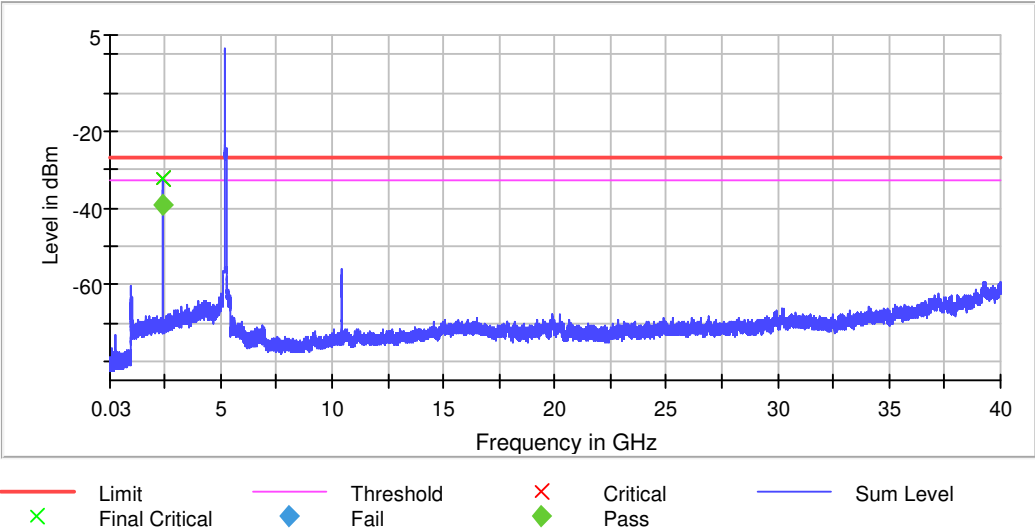
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2414.500000	-32.5	-39.2	-27.0	12.2	PASS

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2414.500000	-32.5	5.5	-27.0
2415.500000	-33.6	6.6	-27.0
2416.500000	-34.9	7.9	-27.0
2411.500000	-35.5	8.5	-27.0
2413.500000	-36.5	9.5	-27.0
2412.500000	-36.9	9.9	-27.0
2410.500000	-37.1	10.1	-27.0
2417.500000	-38.5	11.5	-27.0
2418.500000	-38.7	11.7	-27.0
2408.500000	-40.6	13.6	-27.0
2409.500000	-41.0	14.0	-27.0
2419.500000	-44.9	17.9	-27.0
2407.500000	-45.5	18.5	-27.0
2406.500000	-48.6	21.6	-27.0
2405.500000	-49.3	22.3	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	33 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	≤ 1.000 MHz
VBW	3.000 MHz	≥ 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Final Measurement 2

Setting	Instrument Value	Target Value
Span	ZeroSpan	ZeroSpan
RBW	1.000 MHz	~ 1.000 MHz
VBW	3.000 MHz	~ 3.000 MHz
SweepPoints	10001	~ 10001
SweepTime	50.000 ms	50.000 ms
Reference Level	30.000 dBm	30.000 dBm
Attenuation	50.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
SweepType	Sweep	AUTO
Preamp	off	off

Tx Spurious Emission (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5240.000000	PASS

Final measurements

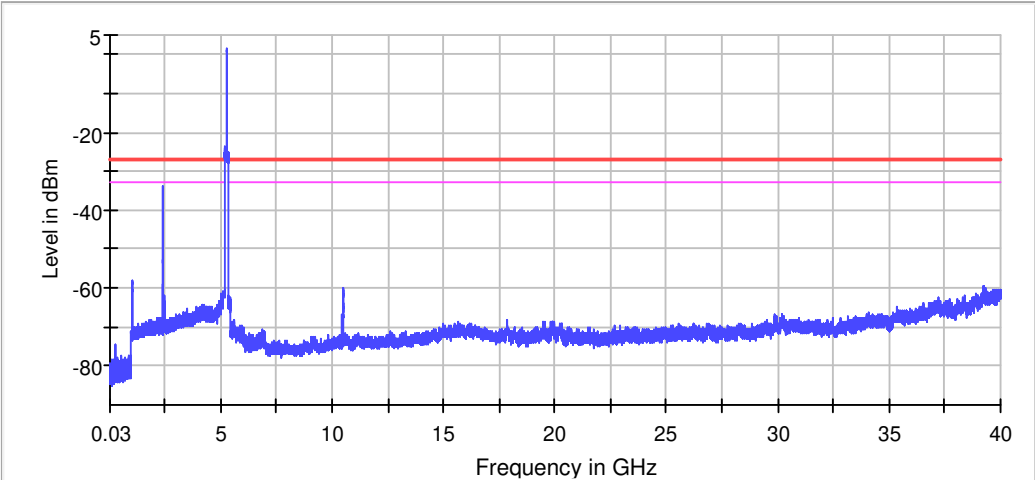
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
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Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2413.500000	-33.7	6.7	-27.0
2415.500000	-33.9	6.9	-27.0
2414.500000	-33.9	6.9	-27.0
2416.500000	-34.8	7.8	-27.0
2412.500000	-35.5	8.5	-27.0
2417.500000	-36.4	9.4	-27.0
2418.500000	-39.7	12.7	-27.0
2411.500000	-40.2	13.2	-27.0
2410.500000	-40.6	13.6	-27.0
2419.500000	-43.3	16.3	-27.0
2409.500000	-47.1	20.1	-27.0
2420.500000	-48.4	21.4	-27.0
2407.500000	-52.5	25.5	-27.0
2406.500000	-53.6	26.6	-27.0
2408.500000	-53.6	26.6	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



— Limit — Threshold × Critical — Sum Level × Final Critical

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	9 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

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DUT Information

Frequencies

WLAN CH 38 (5190 MHz)
WLAN CH 159 (5795 MHz)
WLAN CH 102 (5510 MHz)
WLAN CH 134 (5670 MHz)

WLAN CH 46 (5230 MHz)
WLAN CH 54 (5270 MHz)
WLAN CH 110 (5550 MHz)

WLAN CH 151 (5755 MHz)
WLAN CH 62 (5310 MHz)
WLAN CH 118 (5590 MHz)

Bandwidths

40 MHz (40 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

20.000 dBm (20 dBm)

0 dB

Gain Tables

20.000 dBm (20 dBm)

Port 1: 0dBi;

DUT Settings

No. of transmission chains	1
DFS capability	Yes
DFS Mode	Master
Equipment Type	Portable
TPC	No

Hardware Setup: WMS Measurements\Hardware Setup

Spectrum Analyzer:

SA FSV 40 (SA FSV 40) @ VISA (ADR
TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229,
FW 3.40

Vector Generator:

VG SMBV100B (VG SMBV100B) @ VISA (ADR
TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33

Generator:

SMB100Aa (SMB100A) @ VISA (ADR
TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev
2.21.0, 07/2016, CVI 2015

OSP:

OSP-B157W (OSP-B157W) @ VISA (ADR
TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW
1.23.0.2

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Tx Spurious Emission	5190.000	20.0	40.000000	PASS
Tx Spurious Emission	5230.000	20.0	40.000000	PASS

Tx Spurious Emission (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5190.000000	PASS

Final measurements

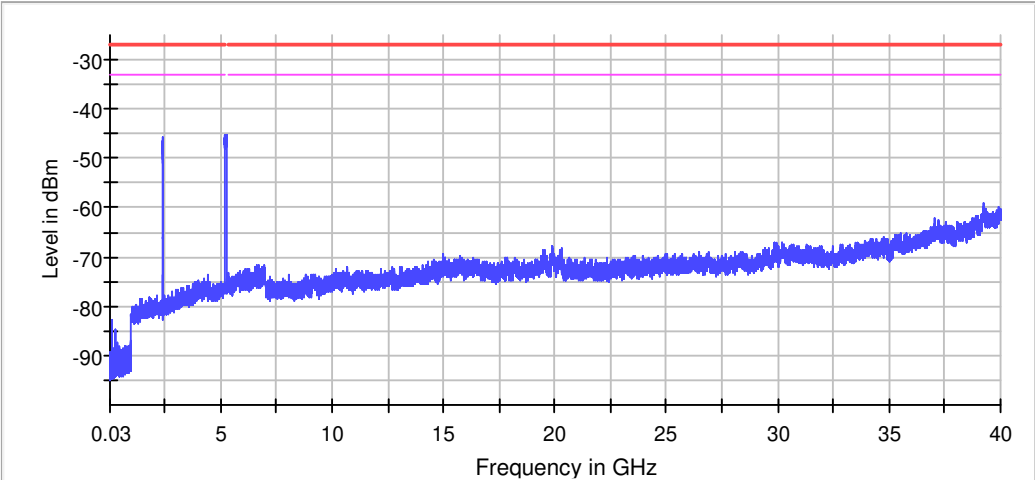
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
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Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2406.500000	-45.5	18.5	-27.0
2405.500000	-45.6	18.6	-27.0
2410.500000	-46.5	19.5	-27.0
2416.500000	-46.5	19.5	-27.0
2419.500000	-46.6	19.6	-27.0
2411.500000	-47.0	20.0	-27.0
2415.500000	-47.5	20.5	-27.0
2414.500000	-47.8	20.8	-27.0
2404.500000	-47.9	20.9	-27.0
2413.500000	-48.0	21.0	-27.0
2407.500000	-48.7	21.7	-27.0
2412.500000	-49.0	22.0	-27.0
2409.500000	-49.4	22.4	-27.0
2417.500000	-50.3	23.3	-27.0
2408.500000	-50.3	23.3	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



— Limit — Threshold × Critical — Sum Level × Final Critical

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Tx Spurious Emission (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5230.000000	PASS

Final measurements

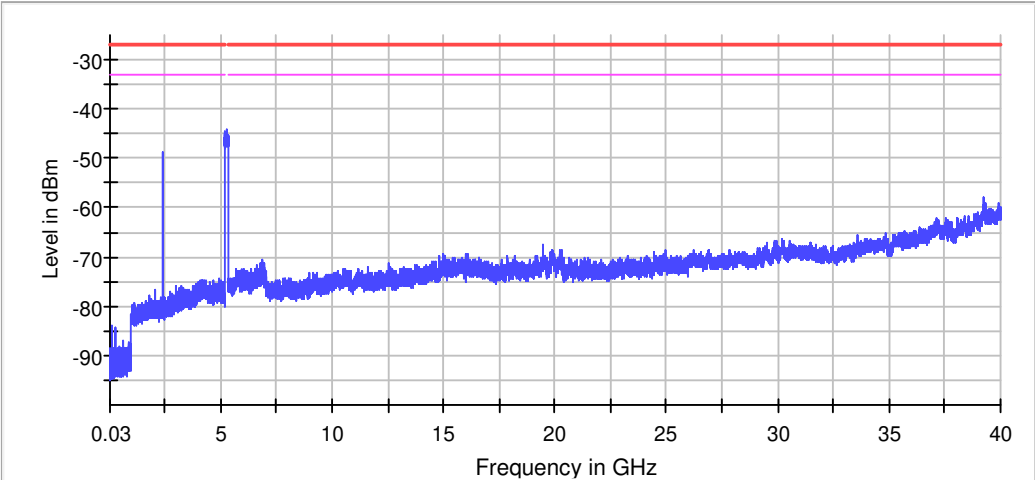
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
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Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2411.500000	-48.6	21.6	-27.0
2410.500000	-48.8	21.8	-27.0
2412.500000	-48.9	21.9	-27.0
2409.500000	-49.5	22.5	-27.0
2413.500000	-50.2	23.2	-27.0
2408.500000	-50.9	23.9	-27.0
2414.500000	-51.3	24.3	-27.0
2415.500000	-53.1	26.1	-27.0
2407.500000	-53.5	26.5	-27.0
2416.500000	-55.7	28.7	-27.0
2406.500000	-57.0	30.0	-27.0
2417.500000	-57.2	30.2	-27.0
39244.500000	-58.0	31.0	-27.0
39945.500000	-59.0	32.0	-27.0
39284.500000	-59.2	32.2	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



— Limit — Threshold × Critical — Sum Level × Final Critical

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

FCC 15.407 2015

DUT Information

Frequencies

WLAN CH 42 (5210 MHz)
WLAN CH 106 (5530 MHz)

WLAN CH 155 (5775 MHz)
WLAN CH 122 (5610 MHz)

WLAN CH 58 (5290 MHz)

Bandwidths

80 MHz (80 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

20.000 dBm (20 dBm)

0 dB

Gain Tables

20.000 dBm (20 dBm)

Port 1: 0dBi;

DUT Settings

No. of transmission chains
DFS capability
DFS Mode
Equipment Type
TPC

1
Yes
Master
Portable
No

Hardware Setup: WMS Measurements\Hardware Setup

Spectrum Analyzer:

SA FSV 40 (SA FSV 40) @ VISA (ADR
TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229,
FW 3.40

Vector Generator:

VG SMBV100B (VG SMBV100B) @ VISA (ADR
TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33

Generator:

SMB100Aa (SMB100A) @ VISA (ADR
TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev
2.21.0, 07/2016, CVI 2015

OSP:

OSP-B157W (OSP-B157W) @ VISA (ADR
TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW
1.23.0.2

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Tx Spurious Emission	5210.000	20.0	80.000000	PASS

Tx Spurious Emission (5210 MHz; 20.000 dBm; 80 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5210.000000	PASS

Final measurements

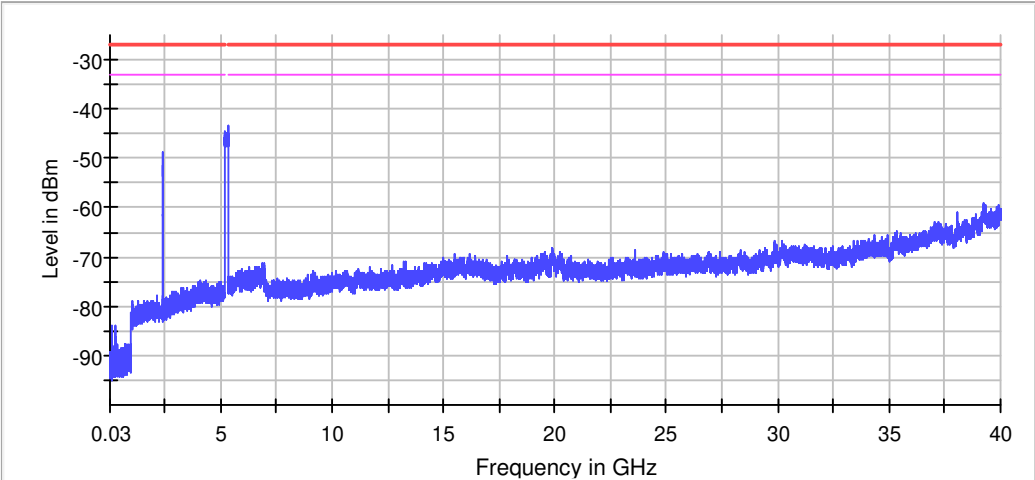
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2411.500000	-48.6	21.6	-27.0
2410.500000	-49.0	22.0	-27.0
2409.500000	-50.6	23.6	-27.0
2408.500000	-50.6	23.6	-27.0
2413.500000	-51.3	24.3	-27.0
2414.500000	-51.3	24.3	-27.0
2407.500000	-53.3	26.3	-27.0
2415.500000	-53.3	26.3	-27.0
2412.500000	-53.8	26.8	-27.0
2416.500000	-56.4	29.4	-27.0
2406.500000	-59.0	32.0	-27.0
39244.500000	-59.2	32.2	-27.0
39929.500000	-59.4	32.4	-27.0
39250.500000	-59.5	32.5	-27.0
39285.500000	-59.6	32.6	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



— Limit — Threshold × Critical — Sum Level × Final Critical

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.25 dB	0.50 dB

FCC 15.407 2015

DUT Information

Frequencies

WLAN CH 36 (5180 MHz)	WLAN CH 40 (5200 MHz)	WLAN CH 48 (5240 MHz)
WLAN CH 149 (5745 MHz)	WLAN CH 157 (5785 MHz)	WLAN CH 165 (5825 MHz)
WLAN CH 52 (5260 MHz)	WLAN CH 56 (5280 MHz)	WLAN CH 64 (5320 MHz)
WLAN CH 100 (5500 MHz)	WLAN CH 120 (5600 MHz)	WLAN CH 140 (5700 MHz)
WLAN CH 116 (5580 MHz)	WLAN CH 151 (5755 MHz)	WLAN CH 159 (5795 MHz)
WLAN CH 155 (5775 MHz)		

Bandwidths

20 MHz (20 MHz)	40 MHz (40 MHz)	80 MHz (80 MHz)
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Power

20.000 dBm (20 dBm)

Beamforming Gain

20.000 dBm (20 dBm)	0 dB
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Gain Tables

20.000 dBm (20 dBm)	Port 1: 0dBi;
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DUT Settings

No. of transmission chains	1
DFS capability	Yes
DFS Mode	Master
Equipment Type	Portable
TPC	No

Hardware Setup: WMS Measurements\Hardware Setup

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40
Vector Generator:	VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33
Generator:	SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015
OSP:	OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Tx Spurious Emission	5180.000	20.0	20.000000	PASS
Tx Spurious Emission	5200.000	20.0	20.000000	PASS
Tx Spurious Emission	5240.000	20.0	20.000000	PASS

Tx Spurious Emission (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5180.000000	PASS

Final measurements

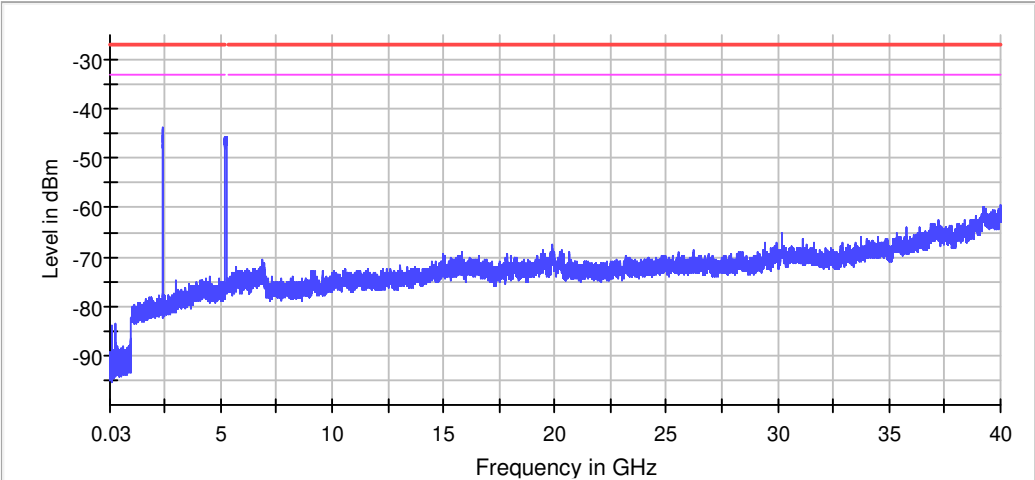
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
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Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2410.500000	-43.8	16.8	-27.0
2411.500000	-44.1	17.1	-27.0
2416.500000	-44.2	17.2	-27.0
2405.500000	-45.4	18.4	-27.0
2406.500000	-45.5	18.5	-27.0
2414.500000	-45.6	18.6	-27.0
2415.500000	-45.6	18.6	-27.0
2407.500000	-45.8	18.8	-27.0
2412.500000	-46.3	19.3	-27.0
2404.500000	-46.4	19.4	-27.0
2408.500000	-46.4	19.4	-27.0
2417.500000	-46.7	19.7	-27.0
2409.500000	-46.7	19.7	-27.0
2420.500000	-47.2	20.2	-27.0
2419.500000	-47.5	20.5	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



— Limit — Threshold × Critical — Sum Level × Final Critical

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Tx Spurious Emission (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5200.000000	PASS

Final measurements

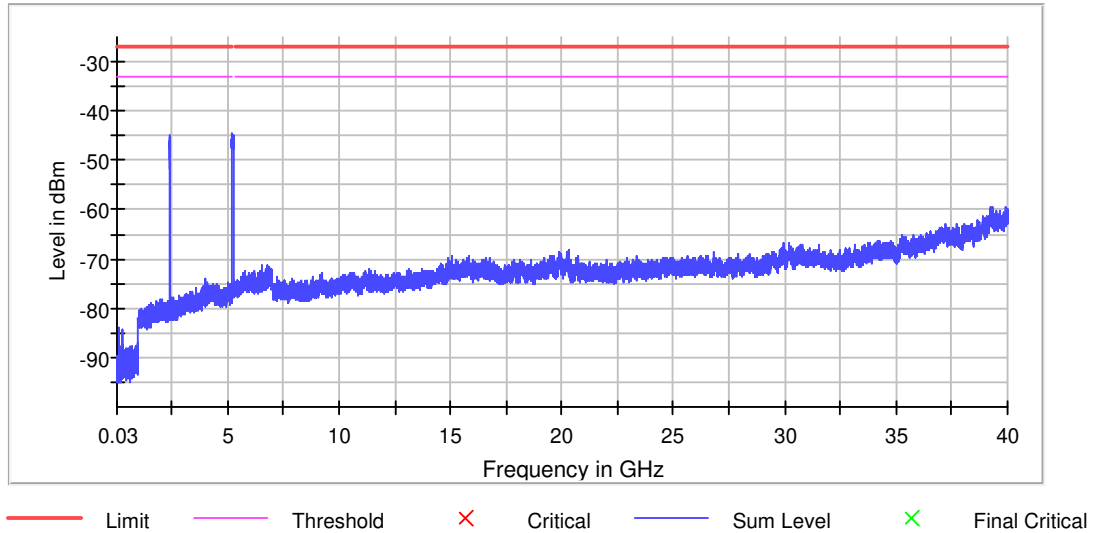
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
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Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2414.500000	-45.0	18.0	-27.0
2406.500000	-45.3	18.3	-27.0
2405.500000	-45.4	18.4	-27.0
2415.500000	-45.9	18.9	-27.0
2420.500000	-46.0	19.0	-27.0
2409.500000	-46.1	19.1	-27.0
2410.500000	-46.2	19.2	-27.0
2416.500000	-46.9	19.9	-27.0
2413.500000	-47.3	20.3	-27.0
2412.500000	-47.5	20.5	-27.0
2411.500000	-47.7	20.7	-27.0
2404.500000	-48.8	21.8	-27.0
2419.500000	-49.1	22.1	-27.0
2407.500000	-49.6	22.6	-27.0
2408.500000	-49.8	22.8	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	≤ 1.000 MHz
VBW	3.000 MHz	≥ 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Tx Spurious Emission (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5240.000000	PASS

Final measurements

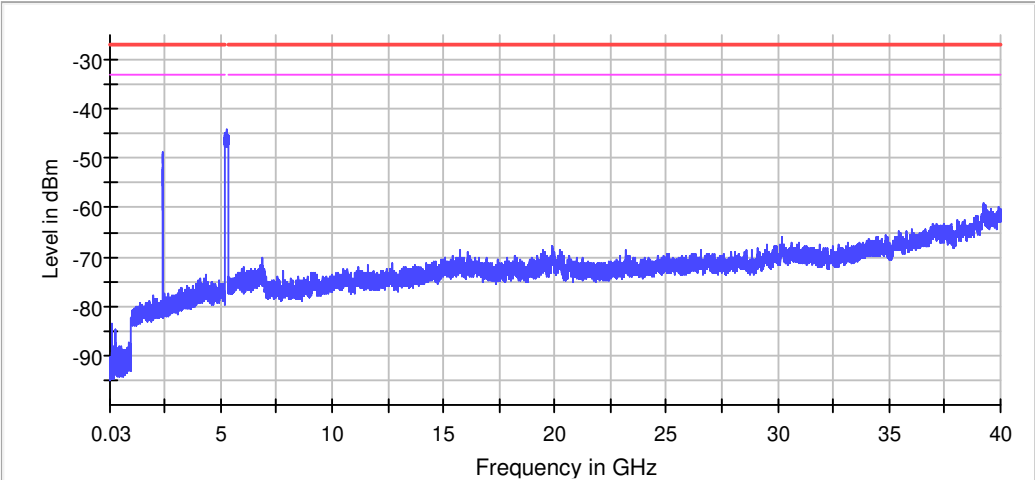
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
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Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2411.500000	-48.8	21.8	-27.0
2410.500000	-49.0	22.0	-27.0
2406.500000	-49.1	22.1	-27.0
2412.500000	-49.8	22.8	-27.0
2409.500000	-49.9	22.9	-27.0
2413.500000	-50.1	23.1	-27.0
2408.500000	-50.7	23.7	-27.0
2407.500000	-50.9	23.9	-27.0
2414.500000	-51.2	24.2	-27.0
2417.500000	-51.8	24.8	-27.0
2419.500000	-52.0	25.0	-27.0
2405.500000	-52.6	25.6	-27.0
2415.500000	-53.5	26.5	-27.0
2420.500000	-54.4	27.4	-27.0
2421.500000	-54.4	27.4	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



— Limit — Threshold × Critical — Sum Level × Final Critical

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

FCC 15.407 2015

DUT Information

Frequencies

WLAN CH 38 (5190 MHz)
WLAN CH 159 (5795 MHz)
WLAN CH 102 (5510 MHz)
WLAN CH 134 (5670 MHz)

WLAN CH 46 (5230 MHz)
WLAN CH 54 (5270 MHz)
WLAN CH 110 (5550 MHz)

WLAN CH 151 (5755 MHz)
WLAN CH 62 (5310 MHz)
WLAN CH 118 (5590 MHz)

Bandwidths

40 MHz (40 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

20.000 dBm (20 dBm)

0 dB

Gain Tables

20.000 dBm (20 dBm)

Port 1: 0dBi;

DUT Settings

No. of transmission chains	1
DFS capability	Yes
DFS Mode	Master
Equipment Type	Portable
TPC	No

Hardware Setup: WMS Measurements\Hardware Setup

Spectrum Analyzer:

SA FSV 40 (SA FSV 40) @ VISA (ADR
TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229,
FW 3.40

Vector Generator:

VG SMBV100B (VG SMBV100B) @ VISA (ADR
TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33

Generator:

SMB100Aa (SMB100A) @ VISA (ADR
TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev
2.21.0, 07/2016, CVI 2015

OSP:

OSP-B157W (OSP-B157W) @ VISA (ADR
TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW
1.23.0.2

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Tx Spurious Emission	5190.000	20.0	40.000000	PASS
Tx Spurious Emission	5230.000	20.0	40.000000	PASS

Tx Spurious Emission (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5190.000000	PASS

Final measurements

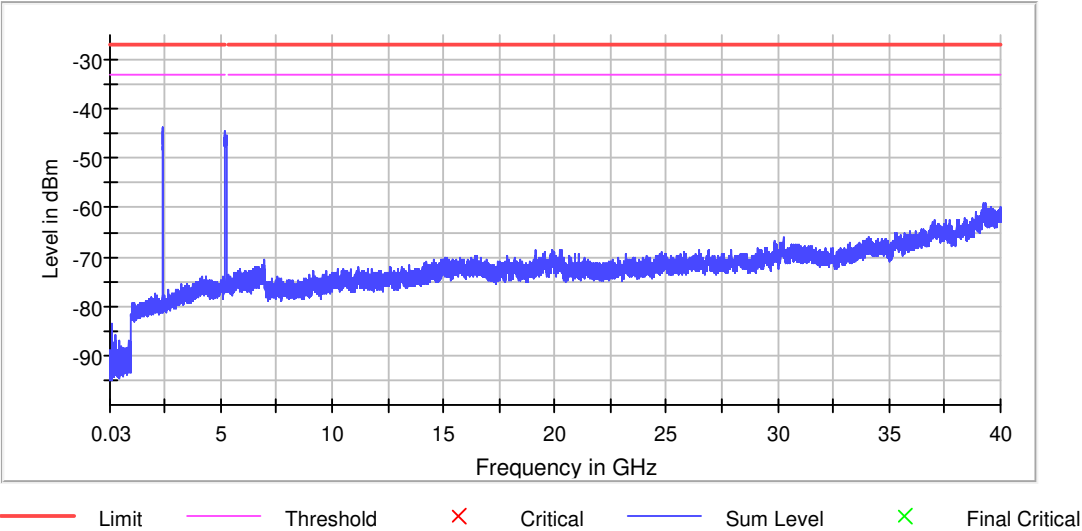
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
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Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2410.500000	-43.6	16.6	-27.0
2415.500000	-43.8	16.8	-27.0
2411.500000	-43.9	16.9	-27.0
2405.500000	-44.6	17.6	-27.0
2409.500000	-44.7	17.7	-27.0
2407.500000	-44.8	17.8	-27.0
2406.500000	-44.8	17.8	-27.0
2412.500000	-45.2	18.2	-27.0
2416.500000	-45.8	18.8	-27.0
2404.500000	-46.2	19.2	-27.0
2414.500000	-46.4	19.4	-27.0
2408.500000	-47.1	20.1	-27.0
2417.500000	-47.3	20.3	-27.0
2420.500000	-47.6	20.6	-27.0
2419.500000	-48.1	21.1	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	18 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Tx Spurious Emission (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5230.000000	PASS

Final measurements

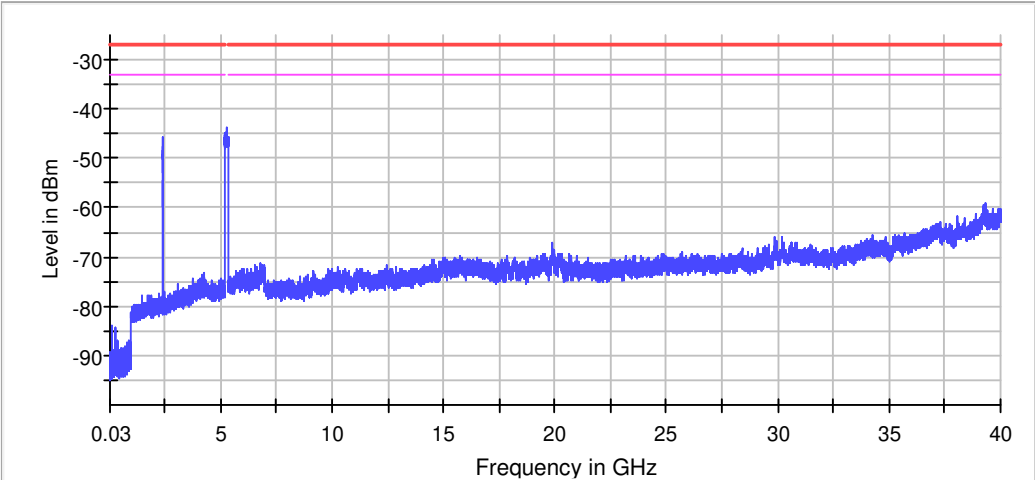
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
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Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2407.500000	-45.7	18.7	-27.0
2406.500000	-46.2	19.2	-27.0
2409.500000	-47.4	20.4	-27.0
2411.500000	-48.0	21.0	-27.0
2410.500000	-48.0	21.0	-27.0
2414.500000	-48.3	21.3	-27.0
2416.500000	-49.3	22.3	-27.0
2412.500000	-49.4	22.4	-27.0
2408.500000	-49.7	22.7	-27.0
2405.500000	-50.2	23.2	-27.0
2413.500000	-50.4	23.4	-27.0
2404.500000	-51.8	24.8	-27.0
2415.500000	-53.1	26.1	-27.0
2417.500000	-53.6	26.6	-27.0
2420.500000	-54.4	27.4	-27.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



— Limit — Threshold × Critical — Sum Level × Final Critical

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB