FCC Part 47 §15.247 2400-2483.5 MHz 2015

DUT Information

Frequencies

2402 MHz (2402 MHz)	WLAN CH 3 (2422 MHz)	WLAN CH 6 (2437 MHz)
WLAN CH 9 (2452 MHz)	2440 MHz (2440 MHz)	2480 MHz (2480 MHz)
WLAN CH 2 (2417 MHz)	WLAN CH 4 (2427 MHz)	WLAN CH 5 (2432 MHz)
WLAN CH 7 (2442 MHz)	WLAN CH 8 (2447 MHz)	WLAN CH 10 (2457 MHz)
WLAN CH 11 (2462 MHz)	WLAN CH 12 (2467 MHz)	WLAN CH 13 (2472 MHz)
WLAN CH 1 (2412 MHz)		

Bandwidths

2 MHz (2 MHz)	1 MHz (1 MHz)	20 MHz (20 MHz)
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: ---;

DUT Settings

No. of transmission chains	1
Equipment Type	Other
Digital Modulation	Yes
Frequency Hopping	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
Minimum Emission Bandwidth 6 dB	2412.000	20.0	20.000000	PASS
Emission Bandwidth 20 dB	2412.000	20.0	20.000000	PASS
Peak Power Spectral Density	2412.000	20.0	20.000000	PASS
Band Edge low	2412.000	20.0	20.000000	PASS
Tx Spurious Emission	2412.000	20.0	20.000000	PASS
Emission Bandwidth 20 dB	2437.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	2437.000	20.0	20.000000	PASS
Peak Power Spectral Density	2437.000	20.0	20.000000	PASS
Tx Spurious Emission	2437.000	20.0	20.000000	PASS
Emission Bandwidth 20 dB	2462.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	2462.000	20.0	20.000000	PASS
RF output power	2462.000	20.0	20.000000	PASS
Peak Power Spectral Density	2462.000	20.0	20.000000	PASS
Band Edge high	2462.000	20.0	20.000000	PASS
Tx Spurious Emission	2462.000	20.0	20.000000	PASS

Minimum Emission Bandwidth 6 dB (2412 MHz; 20.000 dBm; 20 MHz)

Customized settings.

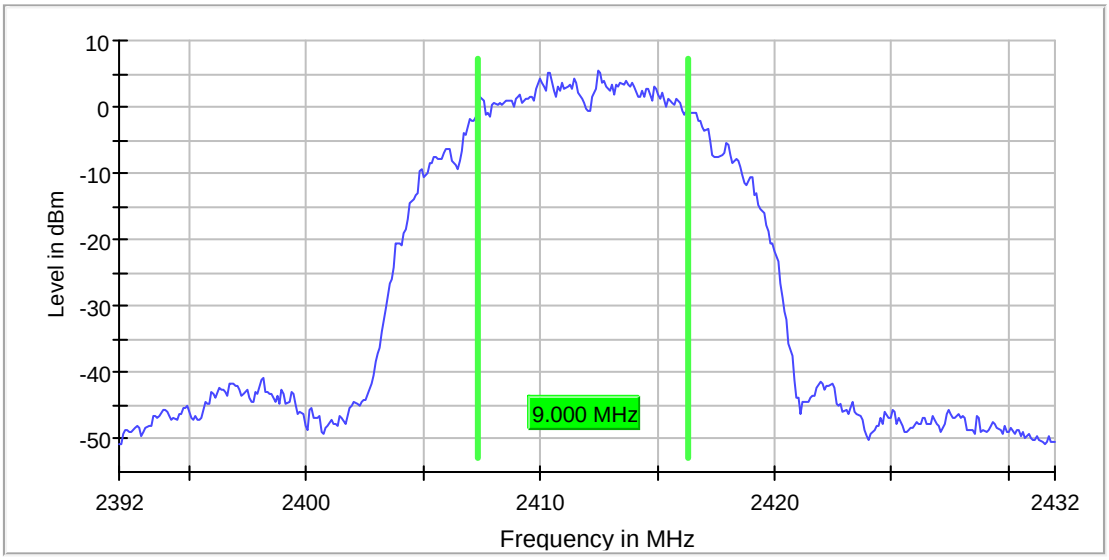
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

6 dB Bandwidth

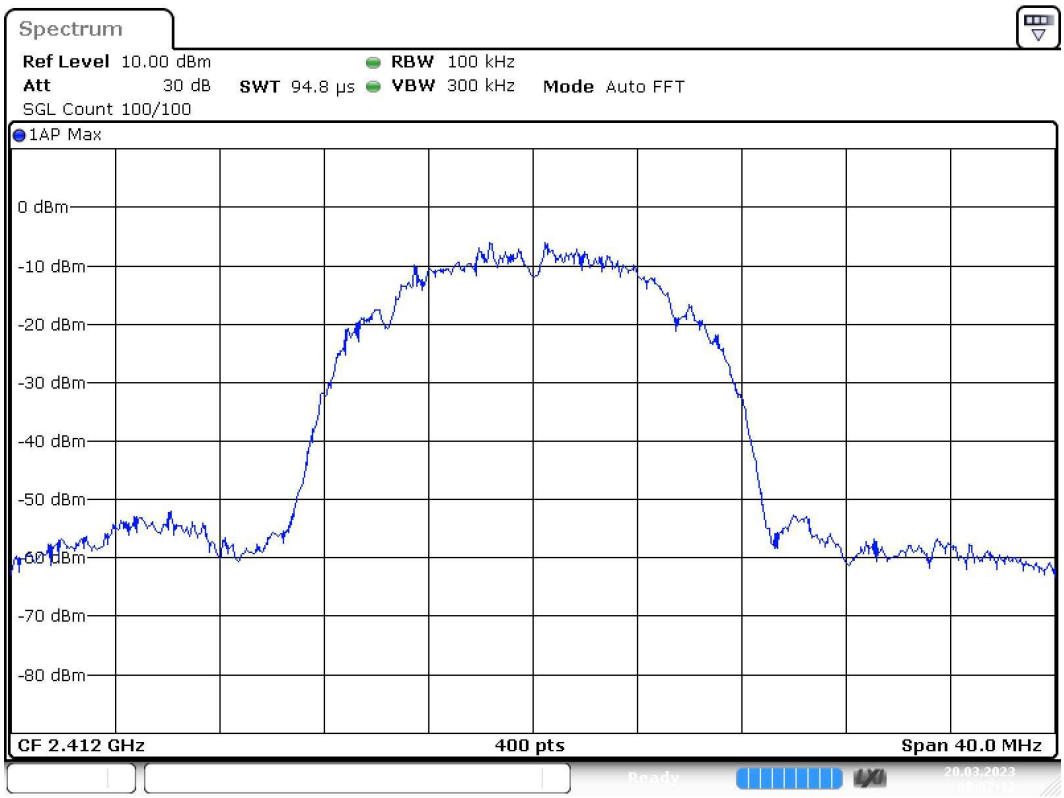
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2412.000000	9.000000	0.500000	---	2407.350000	2416.350000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2412.000000	5.4	PASS



Bandwidth



Date: 20.MAR.2023 08:52:11

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.39200 GHz	2.39200 GHz
Stop Frequency	2.43200 GHz	2.43200 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	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	Peak	Peak
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

Emission Bandwidth 20 dB (2412 MHz; 20.000 dBm; 20 MHz)

Customized settings.

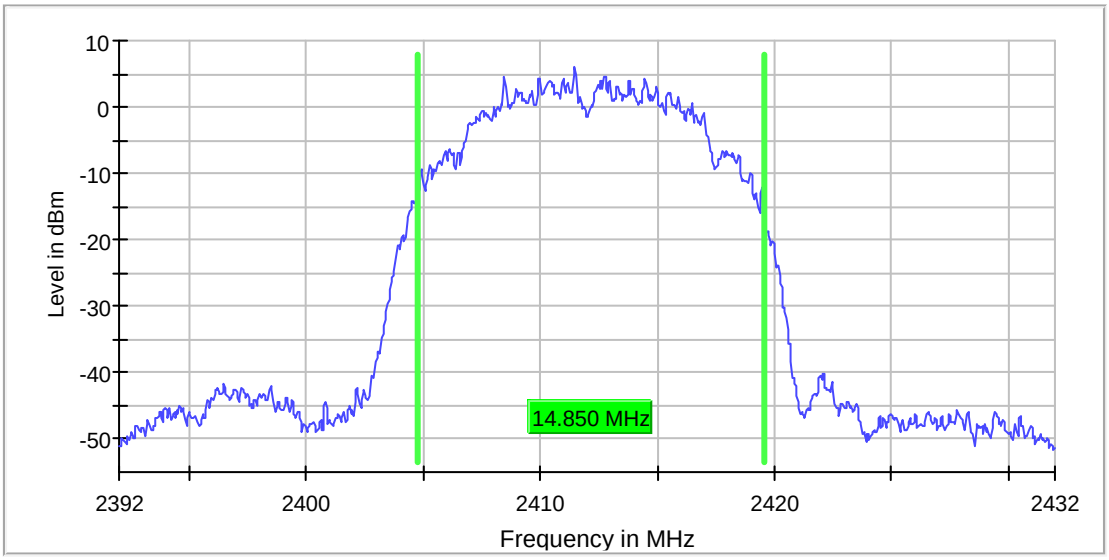
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

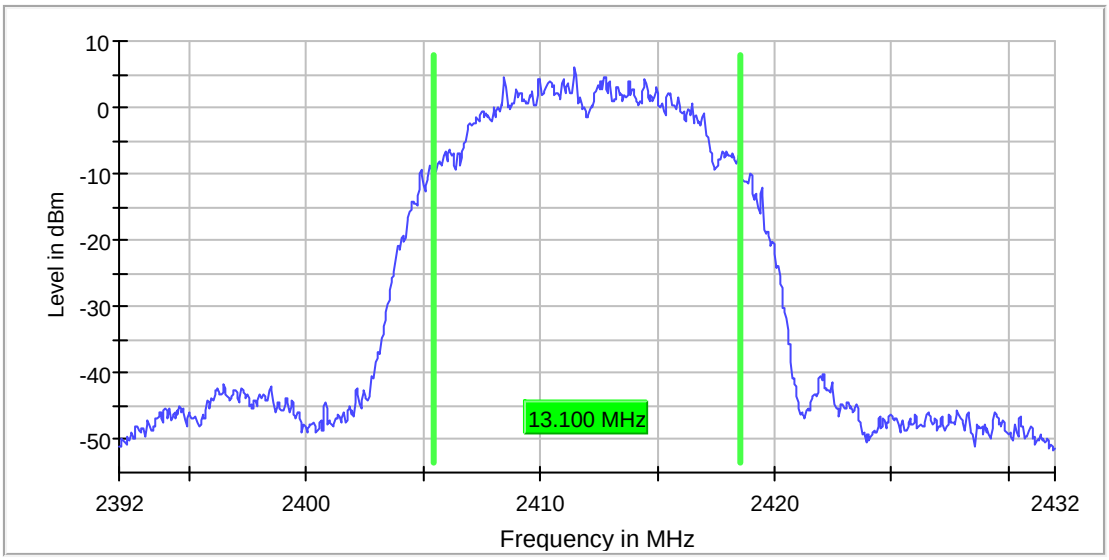
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2412.000000	14.850000	---	---	2404.725000	2419.575000

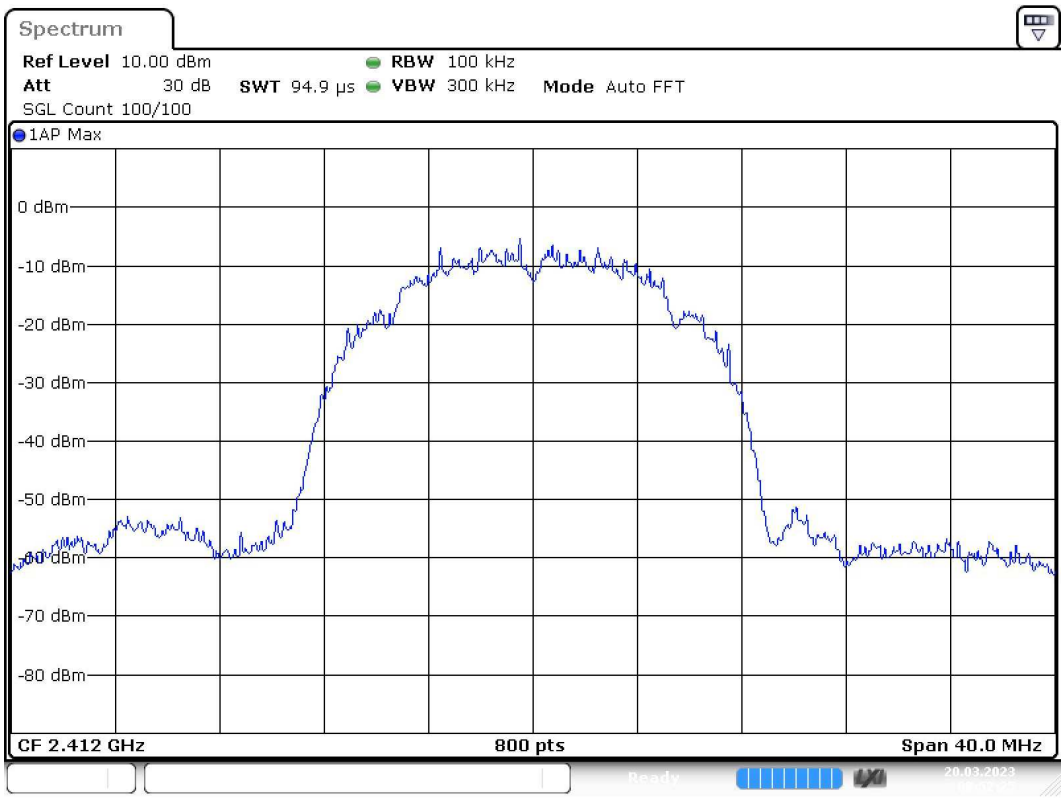
(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2412.000000	5.9	PASS




10
0
-10
-20
-30
-40
-50
Level in dBm
13.100 MHz
2392
2400
2410
2420
2432
Frequency in MHz

Bandwidth



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Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.39200 GHz	2.39200 GHz
Stop Frequency	2.43200 GHz	2.43200 GHz
Span	40.000 MHz	40.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	800	~ 800
Sweeptime	94.922 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	Peak	Peak
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

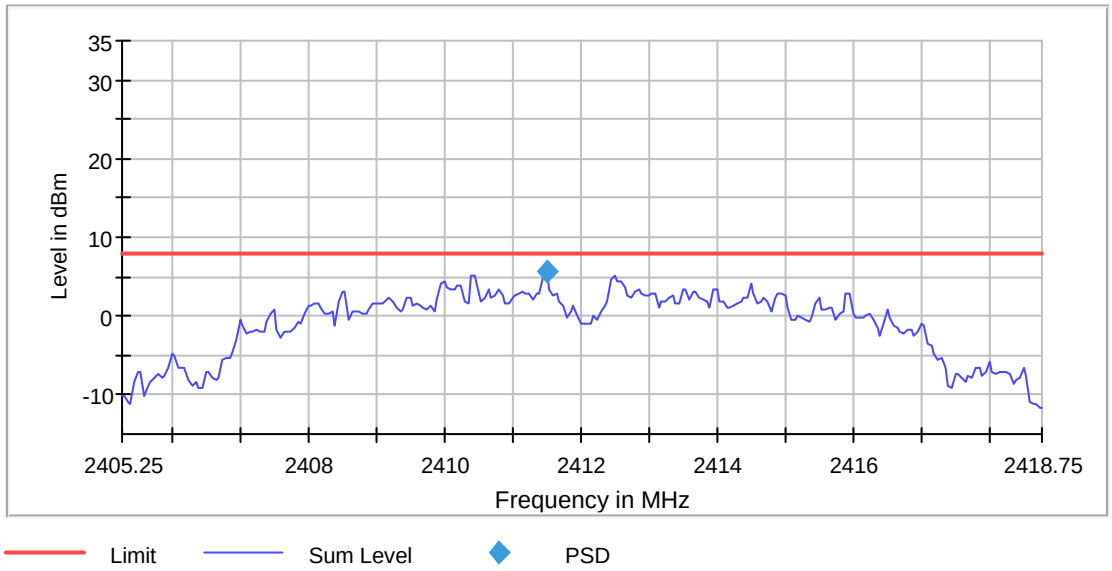
Peak Power Spectral Density (2412 MHz; 20.000 dBm; 20 MHz)

Customized settings.

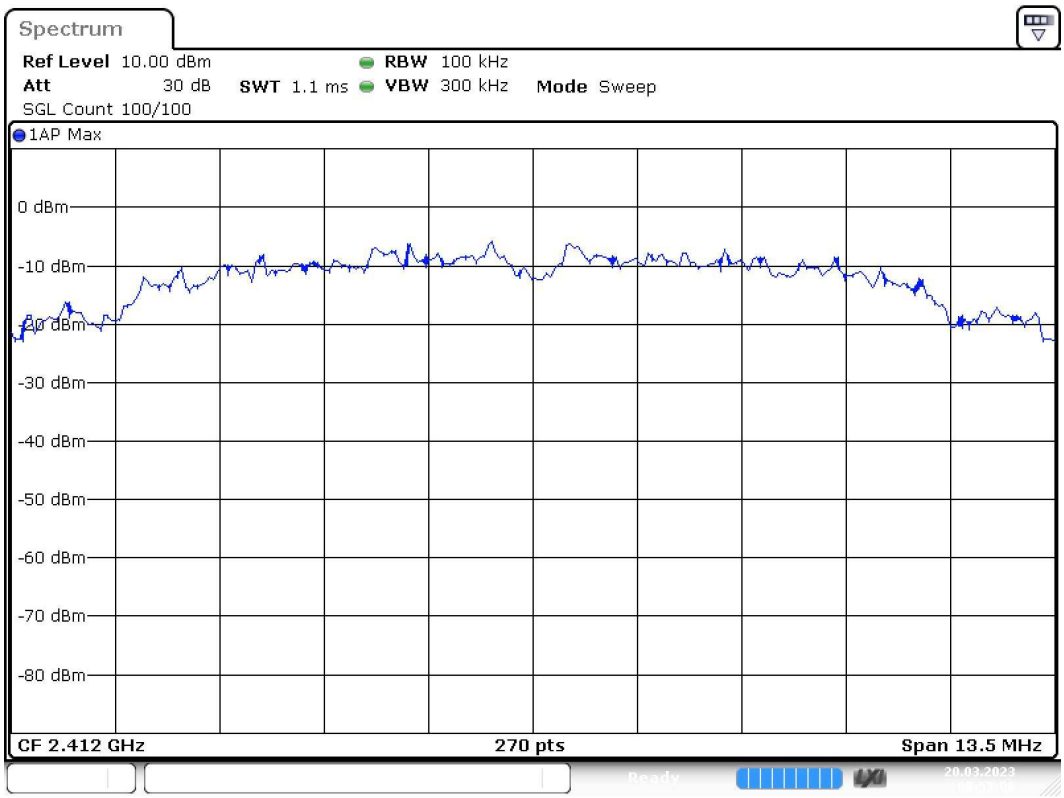
Test according to FCC title 47 part 15 §15.247(a),(e), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2412.000000	2411.475000	5.547	8.0	PASS



PSD Connector 1



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Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40525 GHz	2.40525 GHz
Stop Frequency	2.41875 GHz	2.41875 GHz
Span	13.500 MHz	13.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	270	~ 270
Sweeptime	1.100 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	Peak	Peak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
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

Band Edge low (2412 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Result

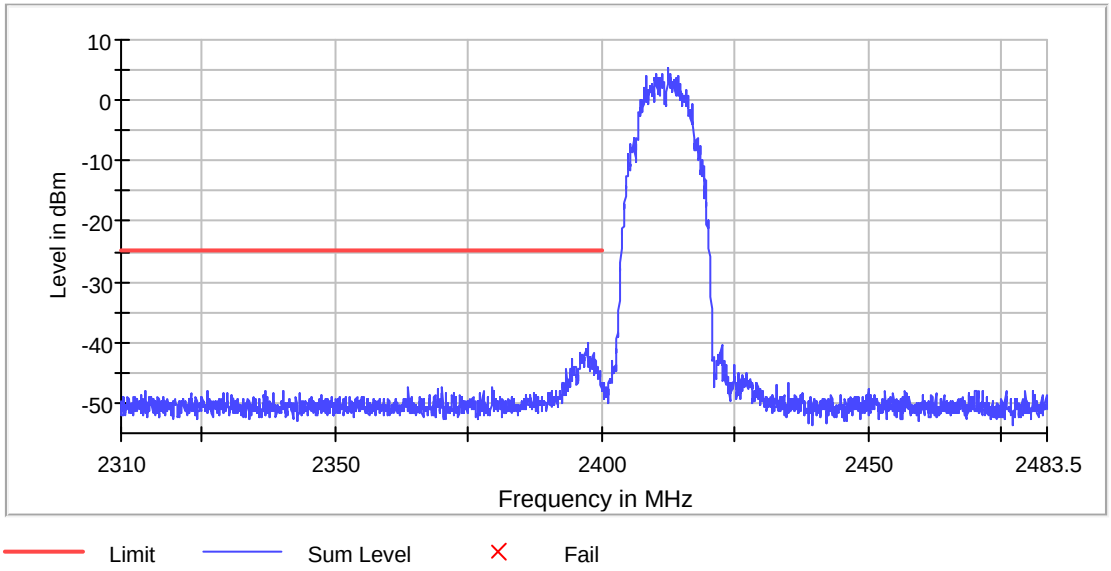
DUT Frequency (MHz)	Result
2412.000000	PASS

Inband Peak

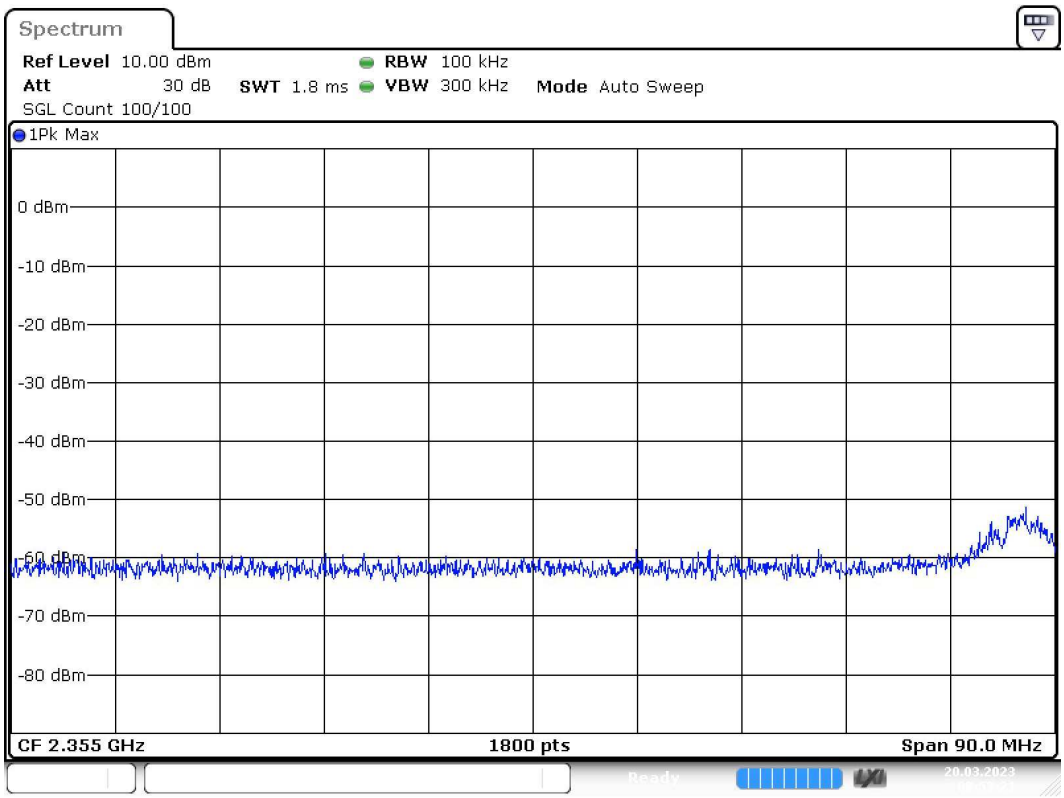
Frequency (MHz)	Level (dBm)
2412.475000	5.2

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2397.475000	-40.0	15.2	-24.8	PASS
2397.525000	-40.0	15.2	-24.8	PASS
2397.225000	-41.1	16.3	-24.8	PASS
2397.275000	-41.3	16.5	-24.8	PASS
2396.975000	-41.4	16.6	-24.8	PASS
2395.925000	-41.6	16.8	-24.8	PASS
2395.975000	-41.7	16.9	-24.8	PASS
2397.175000	-41.8	17.0	-24.8	PASS
2398.475000	-41.8	17.0	-24.8	PASS
2397.025000	-41.8	17.0	-24.8	PASS
2396.025000	-41.9	17.1	-24.8	PASS
2396.525000	-41.9	17.1	-24.8	PASS
2396.475000	-42.0	17.2	-24.8	PASS
2397.075000	-42.1	17.3	-24.8	PASS
2397.125000	-42.1	17.3	-24.8	PASS



Band Edge Connector 1_0



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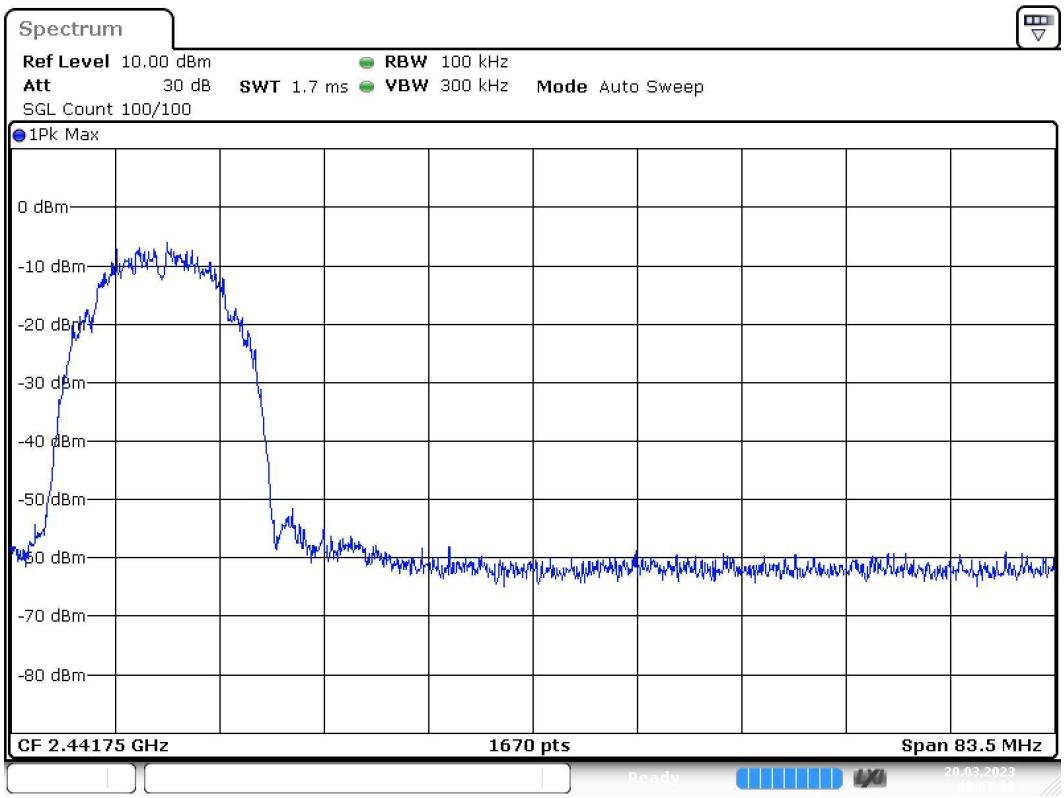
Band Edge Connector 1_1



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Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	1.800 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 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	2 / max. 11	max. 11
Stable	1 / 1	1
Max Stable Difference	0.00 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz

SweepPoints	**1670**	**~ 1670**
Sweeptime	**1.670 ms**	**AUTO**
Reference Level	**10.000 dBm**	**10.000 dBm**
Attenuation	**30.000 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**

Tx Spurious Emission (2412 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
2412.000000	PASS

Final measurements

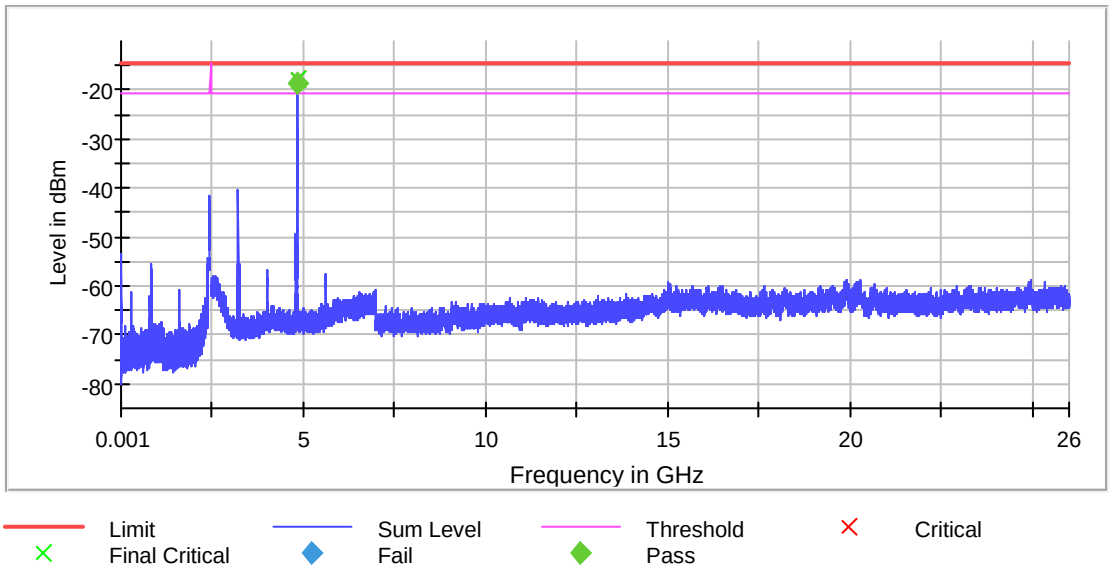
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
4823.686064	-17.9	-18.6	-14.5	4.2	PASS

Pre Measurements

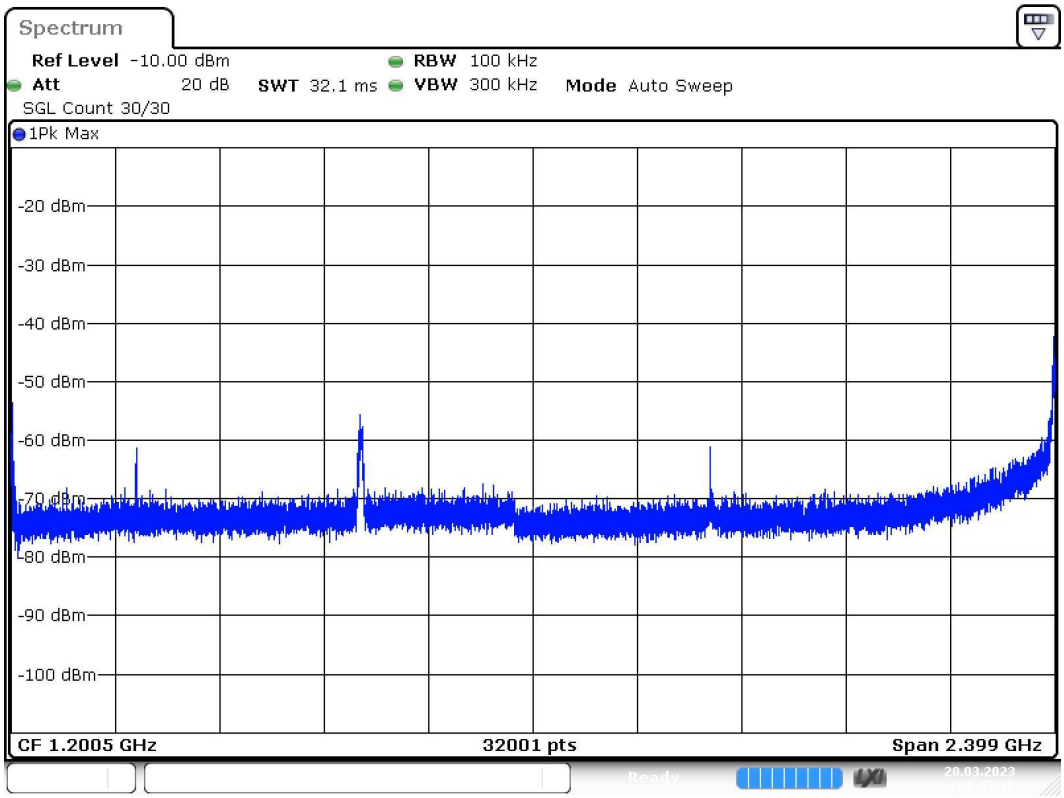
Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
4823.686064	-17.9	3.5	-14.5
4824.420932	-22.4	7.9	-14.5
4826.625535	-28.2	13.7	-14.5
4822.951197	-28.4	13.9	-14.5
4825.155800	-28.5	14.0	-14.5
4828.095270	-28.7	14.3	-14.5
4827.360403	-28.8	14.3	-14.5
4820.746594	-29.2	14.7	-14.5
4820.011726	-29.3	14.9	-14.5
4831.034741	-30.5	16.1	-14.5
4825.890667	-30.8	16.3	-14.5
4821.481462	-32.6	18.2	-14.5
4822.216329	-32.6	18.2	-14.5
4831.769609	-32.7	18.3	-14.5
4816.337388	-33.6	19.2	-14.5

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
1.000000	2400.000000	1	1
2483.500000	26000.000000	2	2



Spurious Connector 1_0



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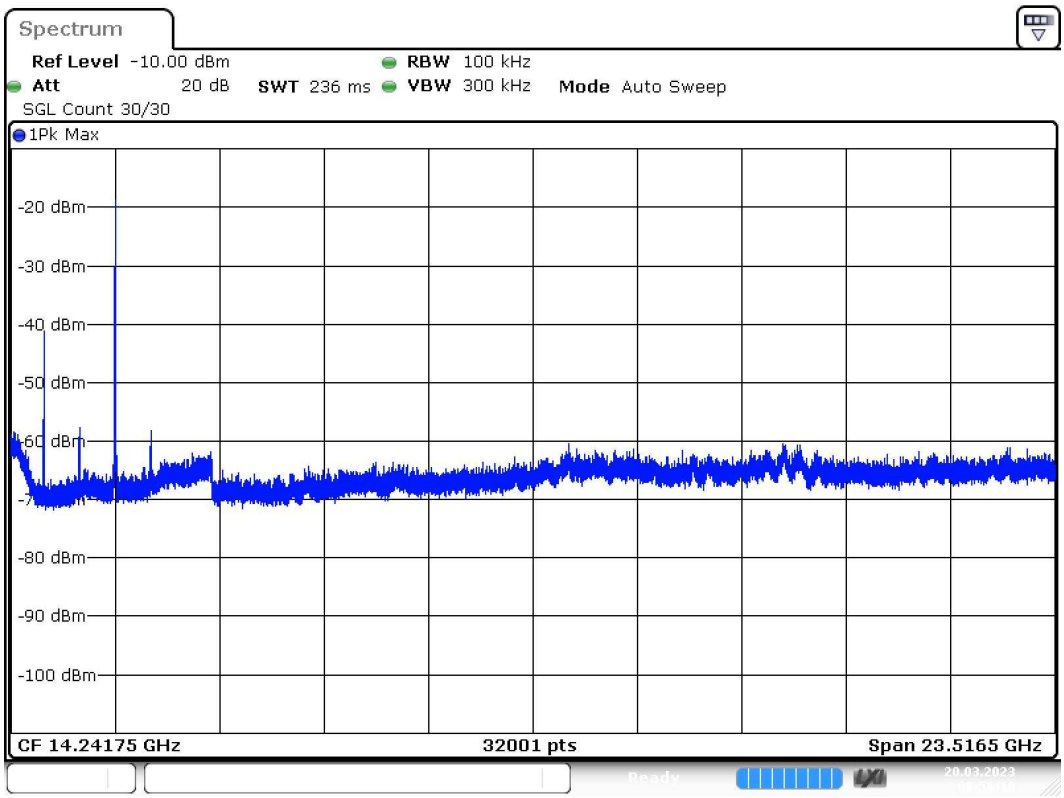
Spurious Connector 1_1



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Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	32001	~ 47980
Sweeptime	32.100 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 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	1 / max. 1	max. 1
Stable	0 / 1	1
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	32001	~ 470330
Sweeptime	236.000 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 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	**1.00 dB**	**1.00 dB**
Run	**1 / max. 1**	**max. 1**
Stable	**0 / 3**	**3**
Max Stable Difference	**0.00 dB**	**1.00 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	**1.000 s**	**1.000 s**
Reference Level	**0.000 dBm**	**0.000 dBm**
Attenuation	**20.000 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**

Emission Bandwidth 20 dB (2437 MHz; 20.000 dBm; 20 MHz)

Customized settings.

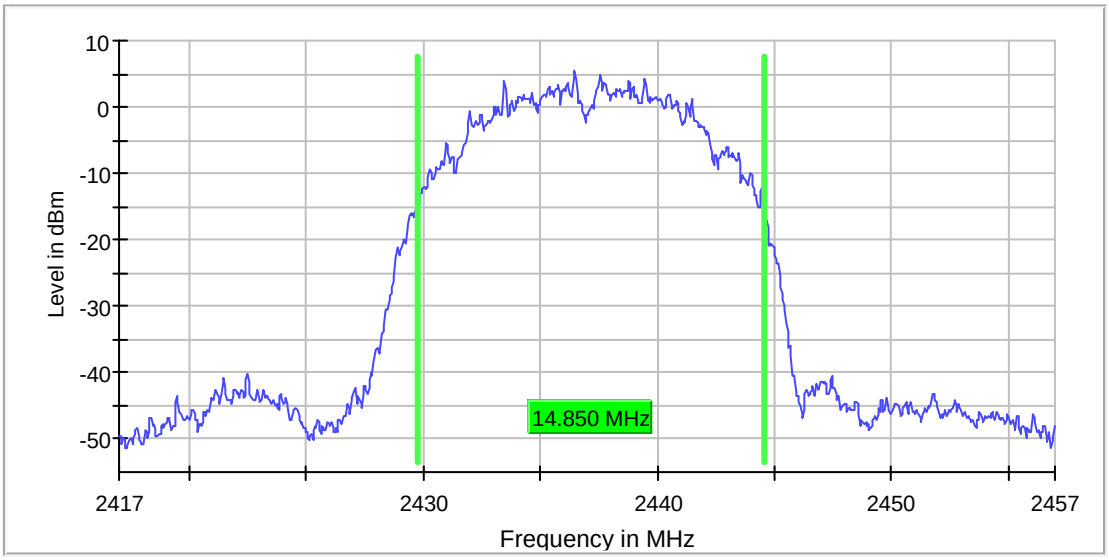
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

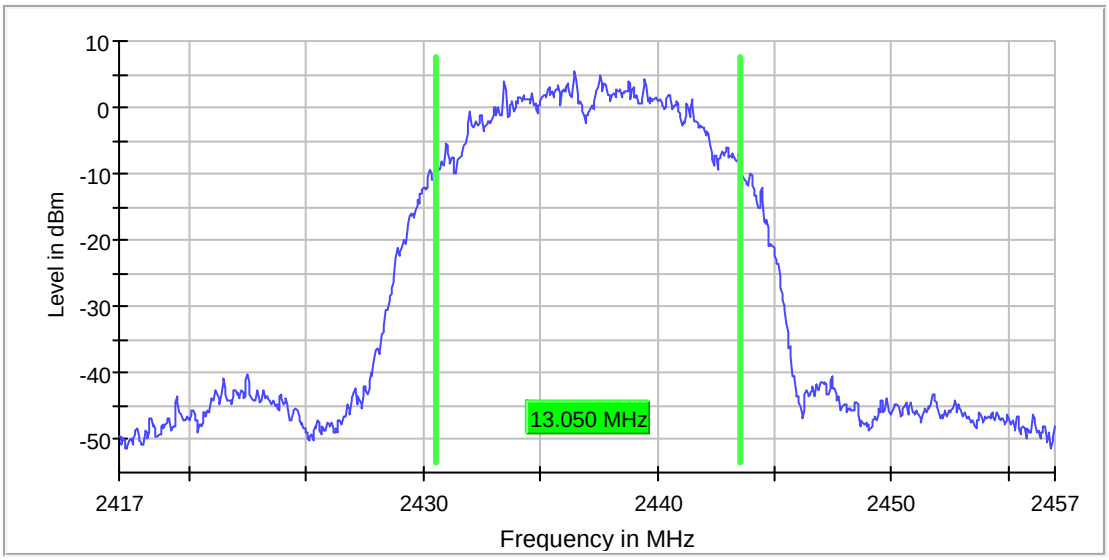
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2437.000000	14.850000	---	---	2429.725000	2444.575000

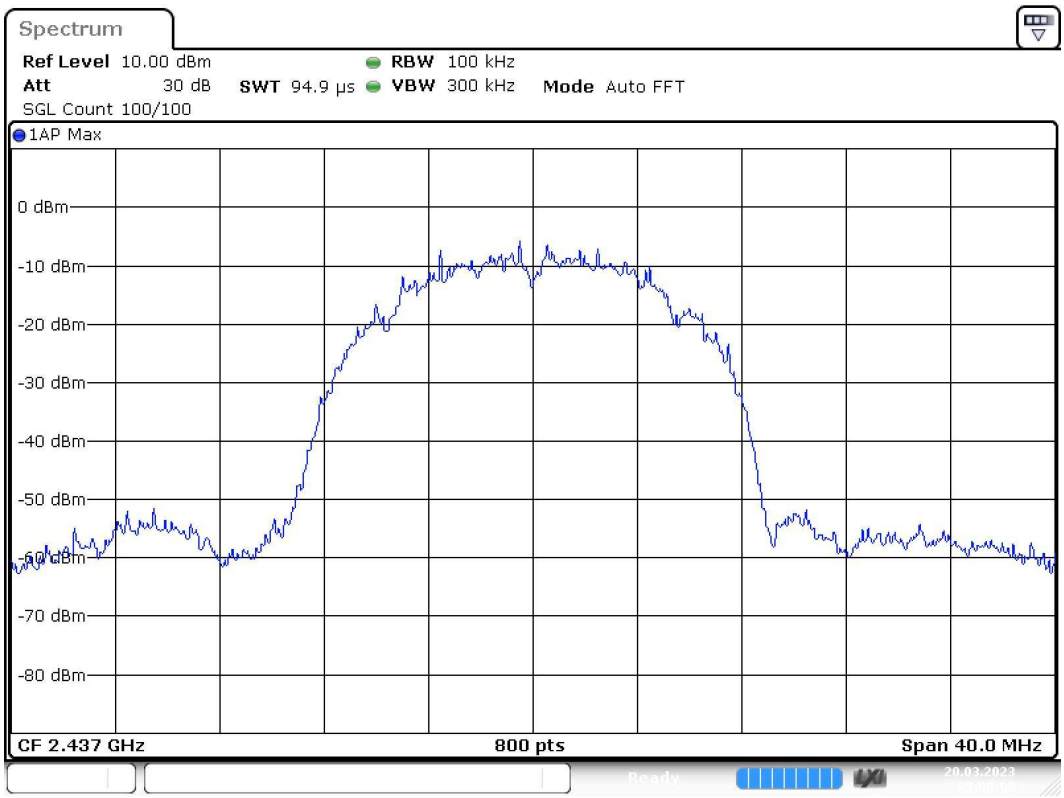
(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2437.000000	5.5	PASS




10
0
-10
-20
-30
-40
-50
Level in dBm
13.050 MHz
2417
2430
2440
2450
2457
Frequency in MHz

Bandwidth



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Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.41700 GHz	2.41700 GHz
Stop Frequency	2.45700 GHz	2.45700 GHz
Span	40.000 MHz	40.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	800	~ 800
Sweeptime	94.922 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	Peak	Peak
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

Minimum Emission Bandwidth 6 dB (2437 MHz; 20.000 dBm; 20 MHz)

Customized settings.

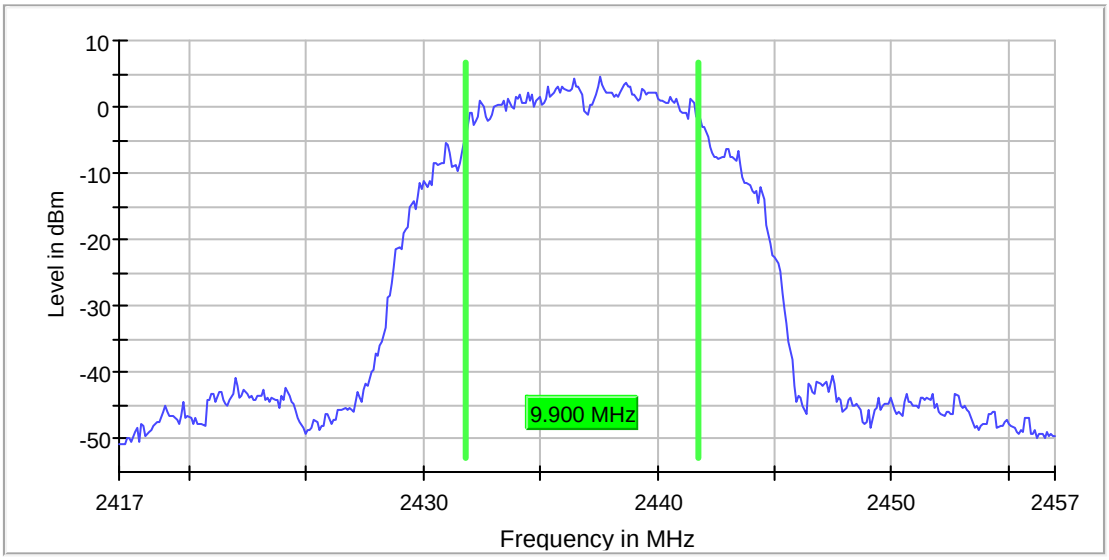
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

6 dB Bandwidth

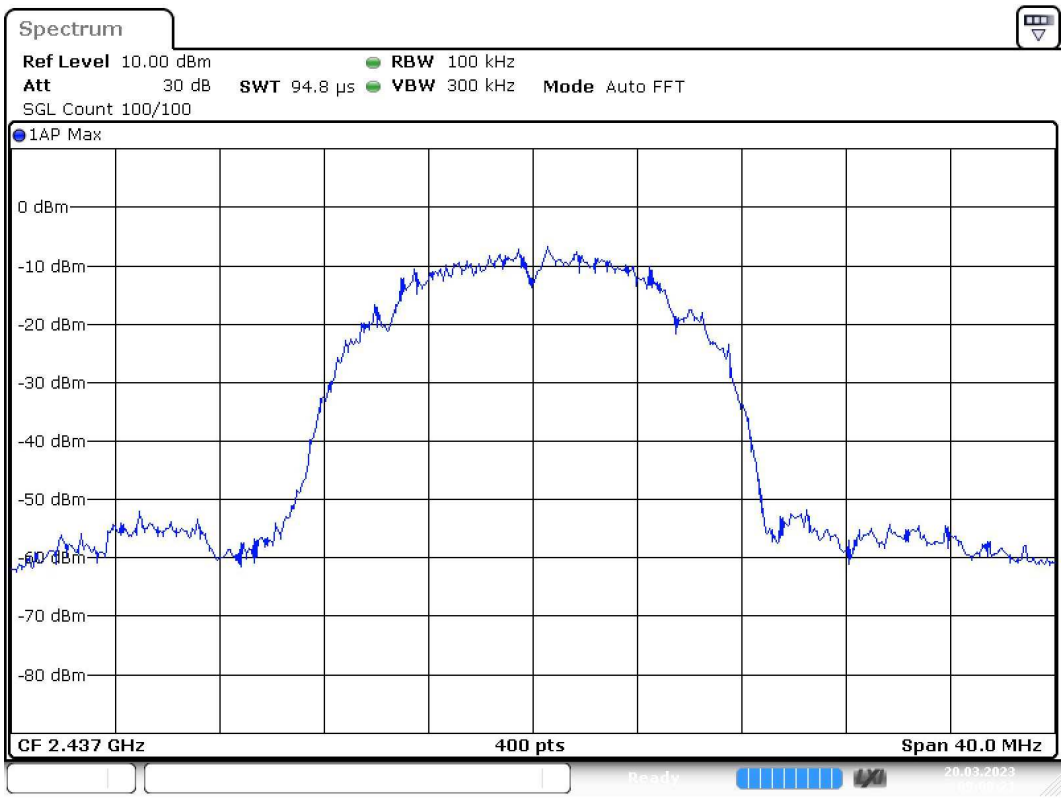
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2437.000000	9.900000	0.500000	---	2431.850000	2441.750000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2437.000000	4.6	PASS



Bandwidth



Date: 20.MAR.2023 09:00:21

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.41700 GHz	2.41700 GHz
Stop Frequency	2.45700 GHz	2.45700 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	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	Peak	Peak
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

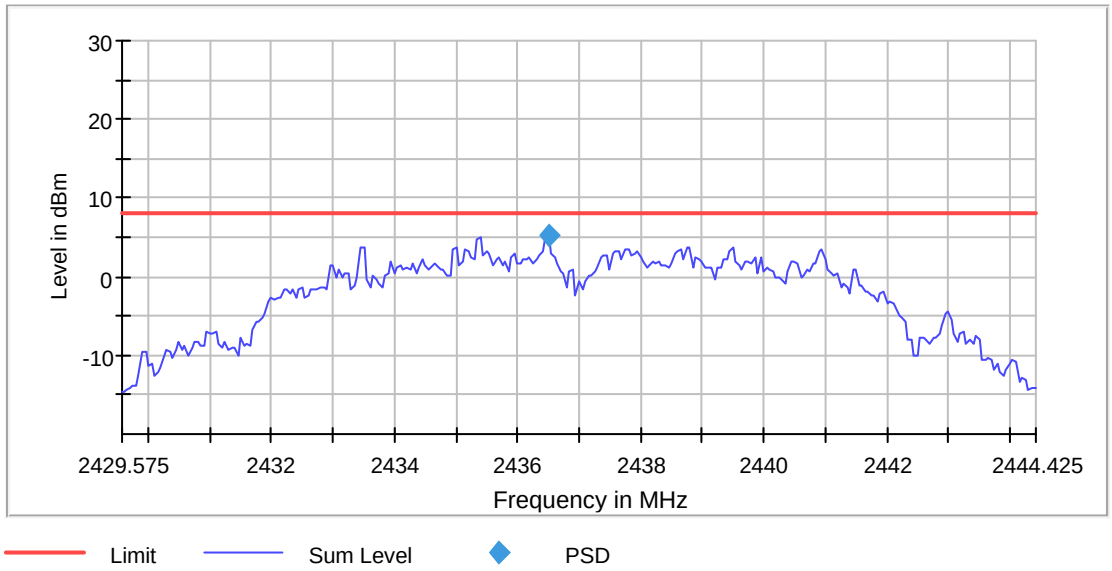
Peak Power Spectral Density (2437 MHz; 20.000 dBm; 20 MHz)

Customized settings.

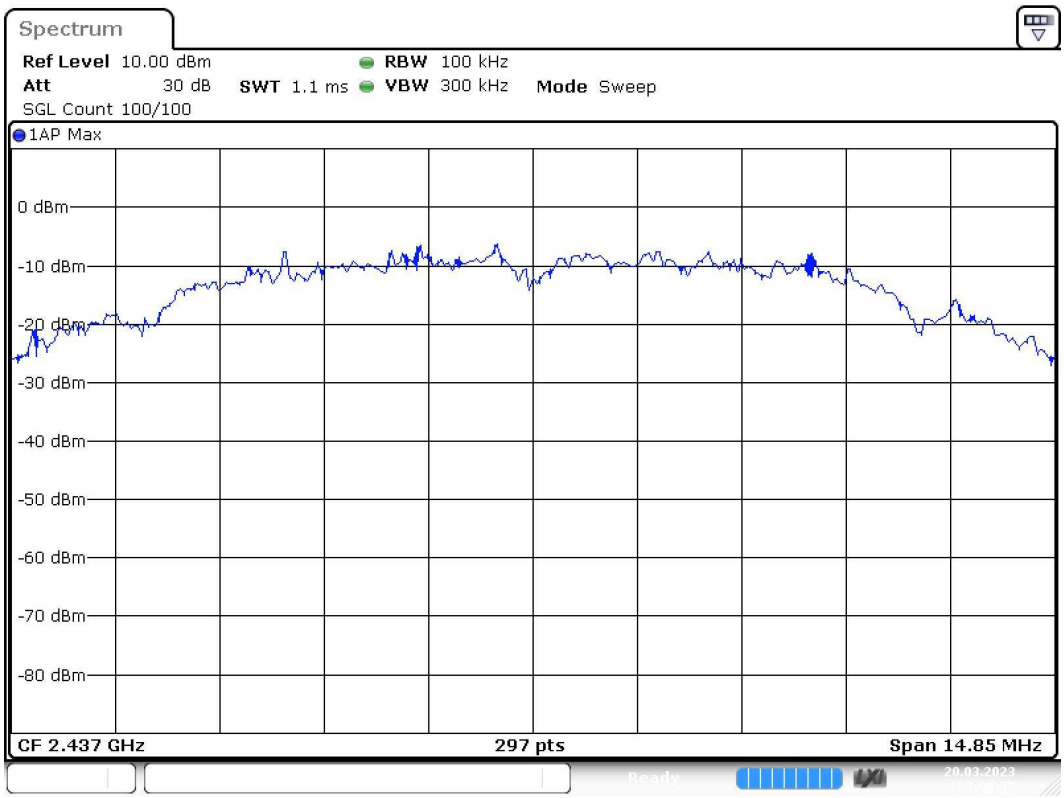
Test according to FCC title 47 part 15 §15.247(a),(e), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2437.000000	2436.500000	5.132	8.0	PASS



PSD Connector 1



Date: 20.MAR.2023 09:00:56

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.42958 GHz	2.42958 GHz
Stop Frequency	2.44443 GHz	2.44443 GHz
Span	14.850 MHz	14.850 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	297	~ 297
Sweeptime	1.100 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	Peak	Peak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
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

Tx Spurious Emission (2437 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
2437.000000	PASS

Final measurements

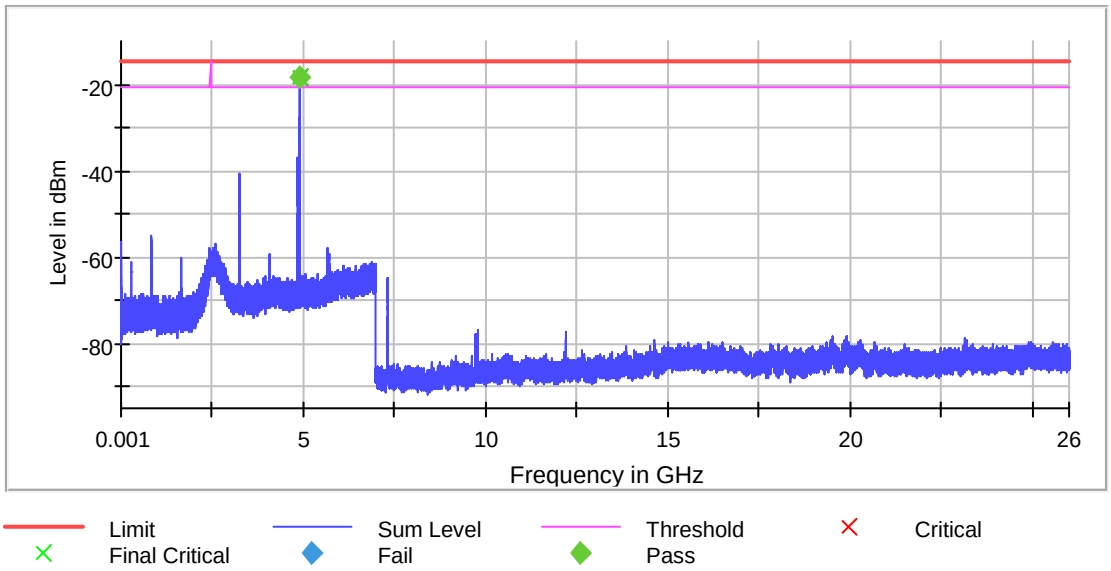
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
4873.994633	-18.4	-18.5	-14.9	3.6	PASS

Pre Measurements

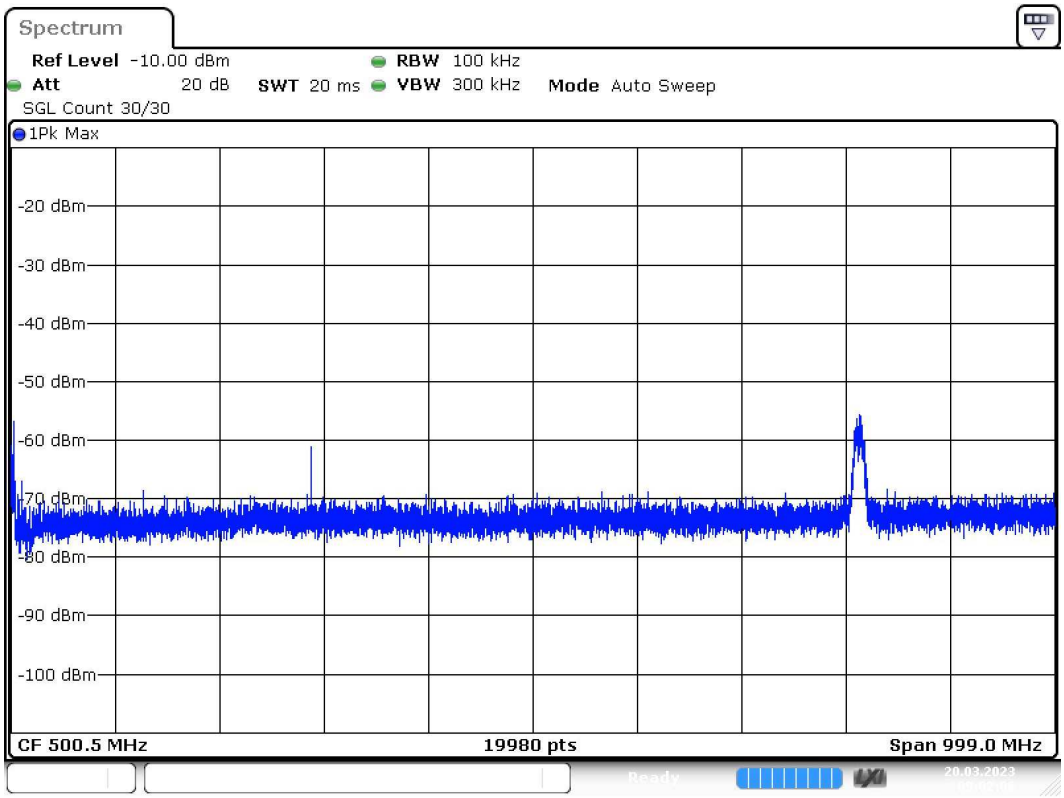
Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
4873.994633	-18.4	3.6	-14.9
4873.853497	-21.9	7.0	-14.9
4874.135769	-27.1	12.3	-14.9
4874.418042	-27.5	12.7	-14.9
4873.571224	-27.8	12.9	-14.9
4874.982586	-28.3	13.4	-14.9
4870.748500	-28.4	13.5	-14.9
4874.276905	-28.4	13.5	-14.9
4873.006679	-28.6	13.7	-14.9
4873.430088	-28.8	14.0	-14.9
4876.958493	-28.9	14.1	-14.9
4872.865543	-29.2	14.3	-14.9
4877.523038	-29.4	14.6	-14.9
4877.240766	-29.5	14.6	-14.9
4871.030772	-29.8	14.9	-14.9

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
1.000000	1000.000000	1	1
1000.000000	2400.000000	2	2
2483.500000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2

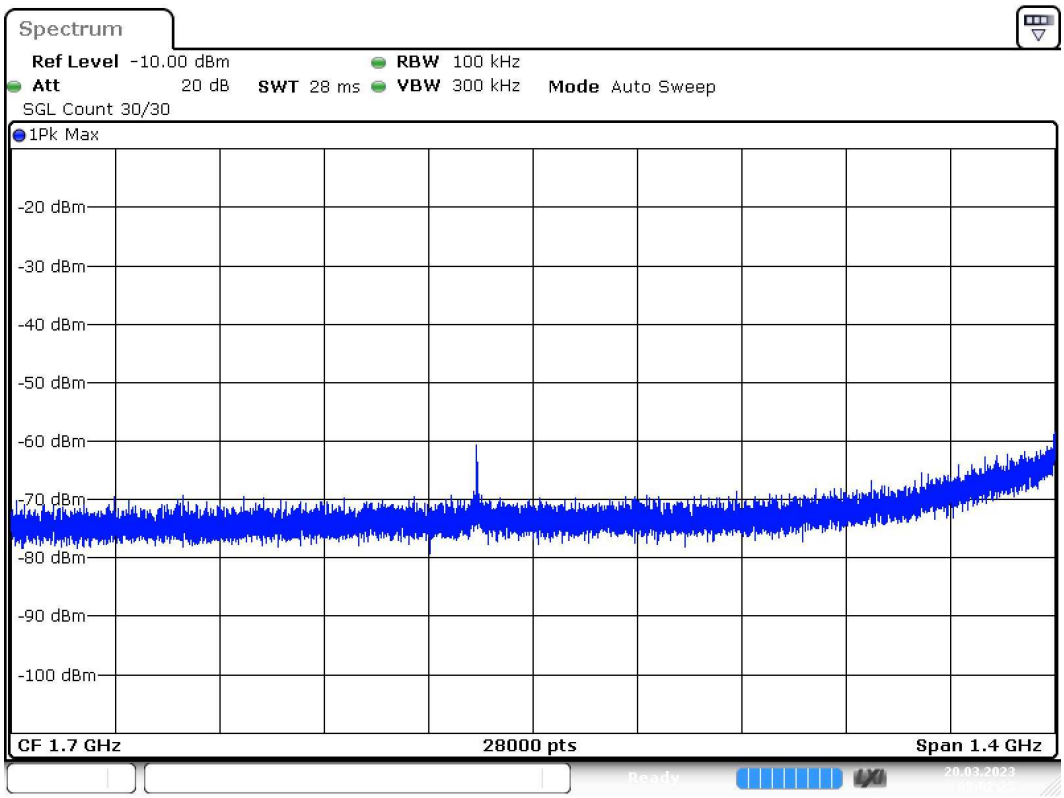


Spurious Connector 1_0



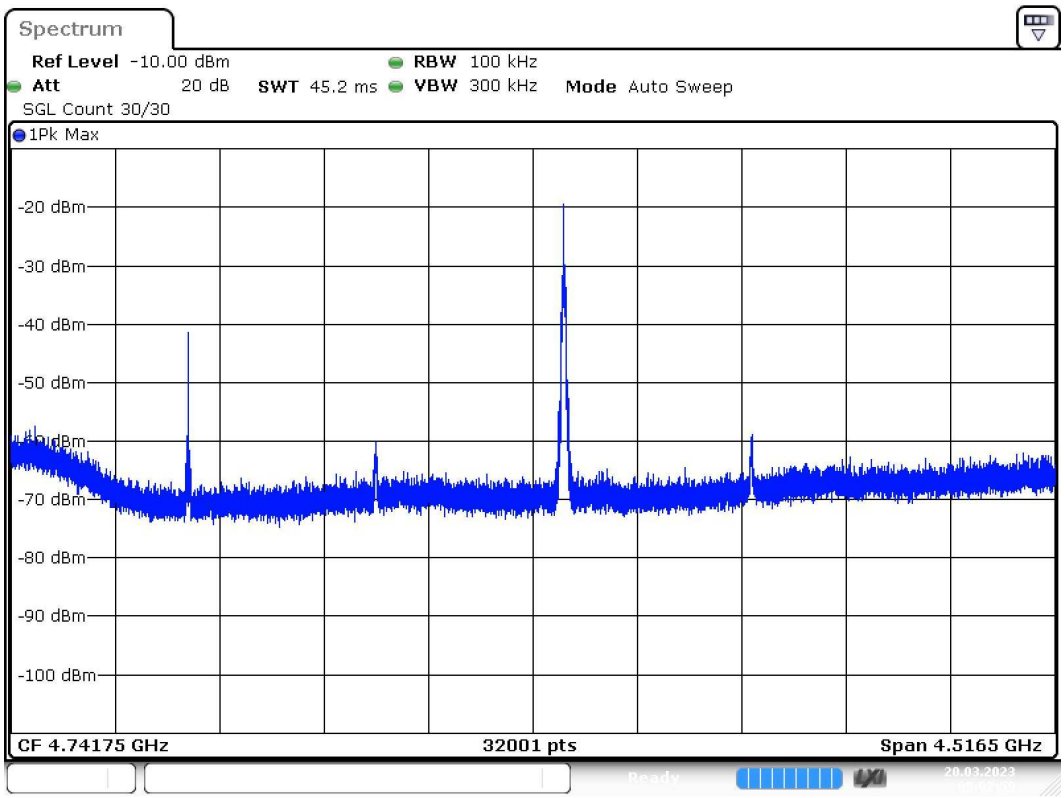
Date: 20.MAR.2023 09:02:06

Spurious Connector 1_1



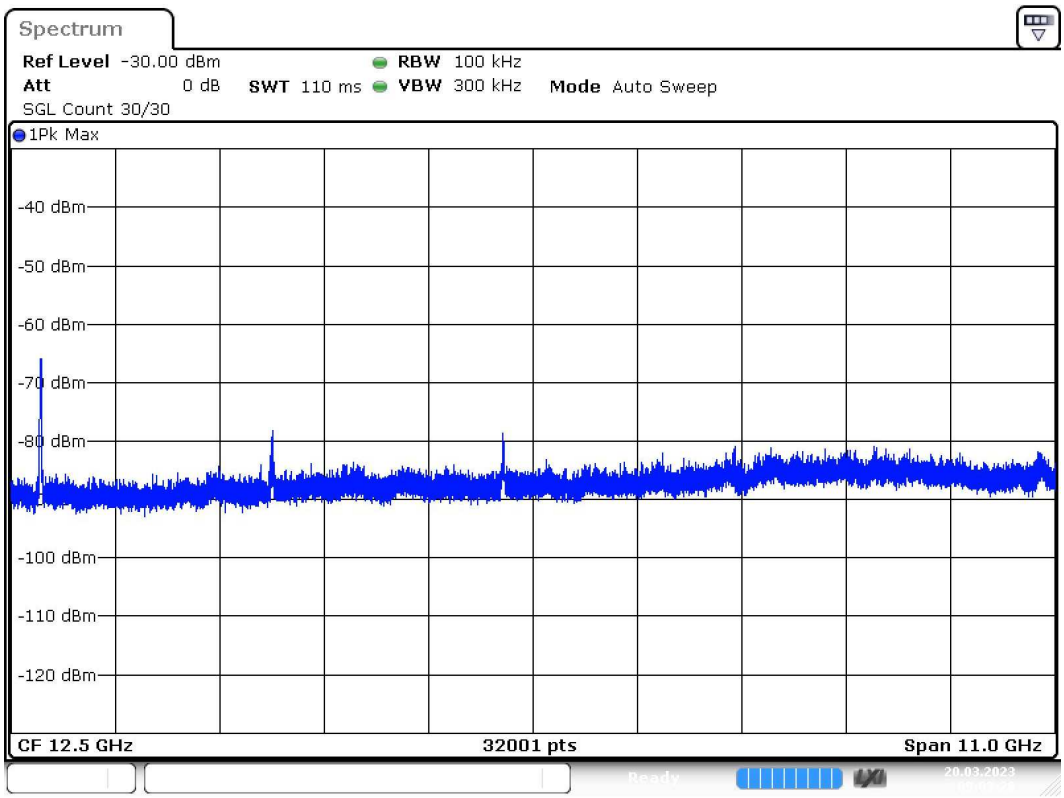
Date: 20.MAR.2023 09:02:26

Spurious Connector 1_2



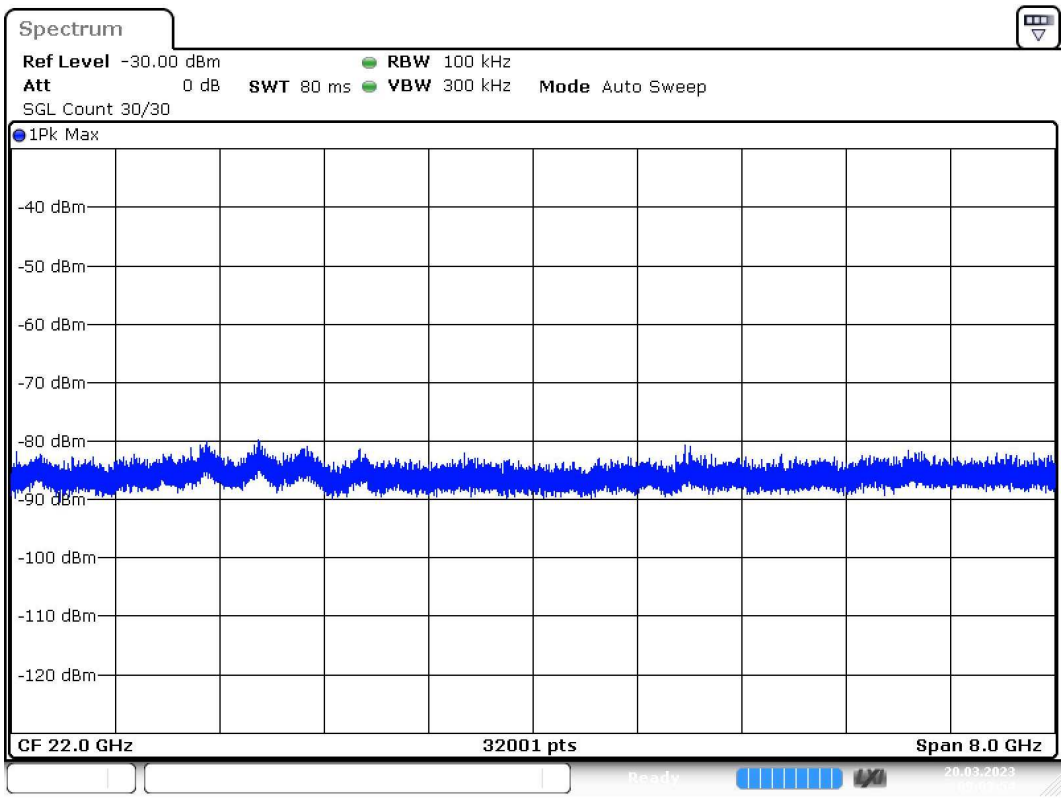
Date: 20.MAR.2023 09:02:59

Spurious Connector 1_3



Date: 20.MAR.2023 09:03:29

Spurious Connector 1_4



Date: 20.MAR.2023 09:03:55

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	19980	~ 19980
Sweeptime	20.000 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 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	1.00 dB	1.00 dB
Run	1 / max. 1	max. 1
Stable	0 / 1	1
Max Stable Difference	0.00 dB	1.00 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	28000	~ 28000
Sweeptime	28.000 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 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	**1.00 dB**	**1.00 dB**
Run	**1 / max. 1**	**max. 1**
Stable	**0 / 3**	**3**
Max Stable Difference	**0.00 dB**	**1.00 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	**1.000 s**	**1.000 s**
Reference Level	**0.000 dBm**	**0.000 dBm**
Attenuation	**20.000 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**

Emission Bandwidth 20 dB (2462 MHz; 20.000 dBm; 20 MHz)

Customized settings.

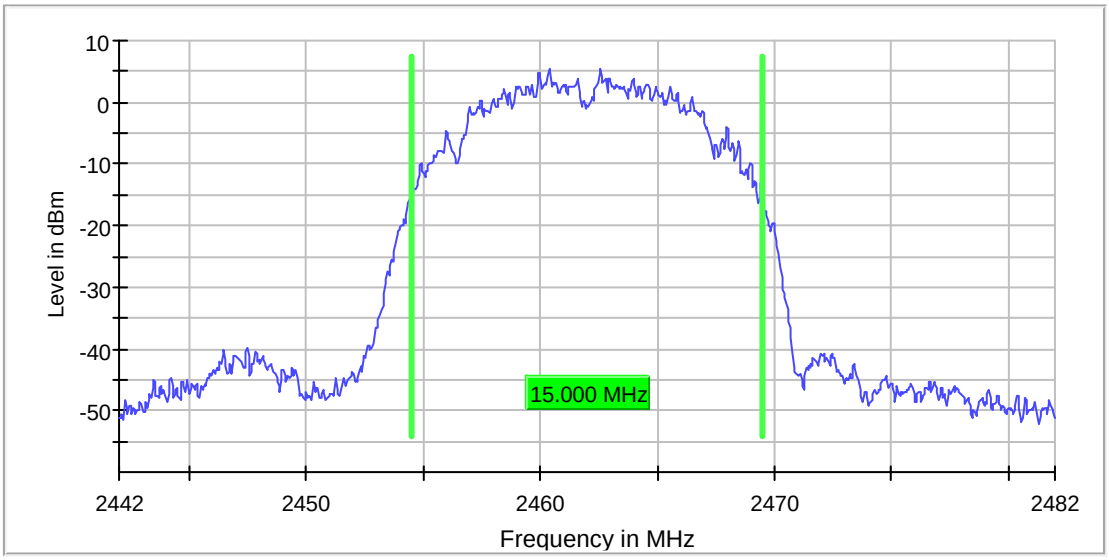
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

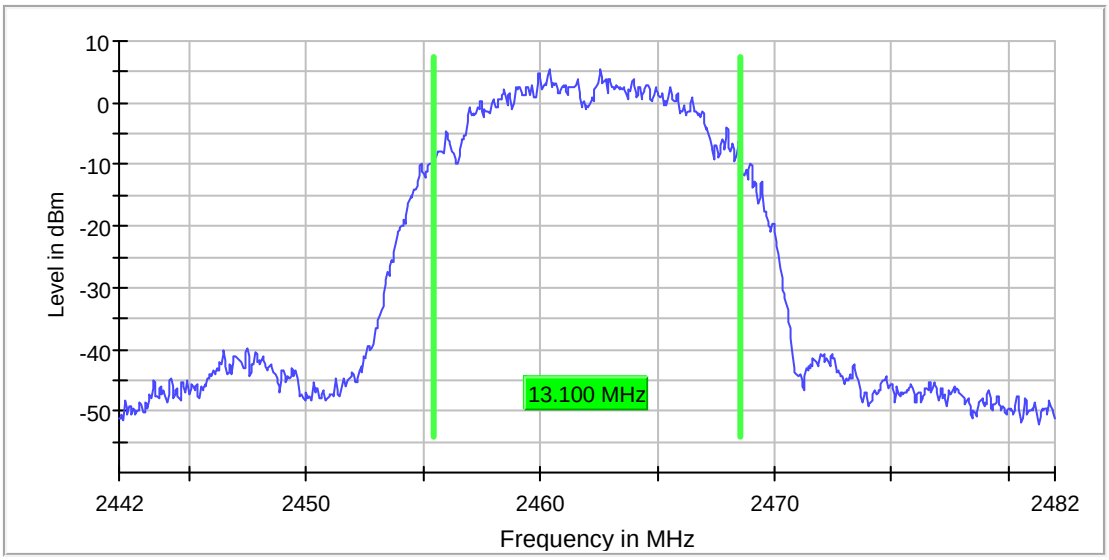
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2462.000000	15.000000	---	---	2454.525000	2469.525000

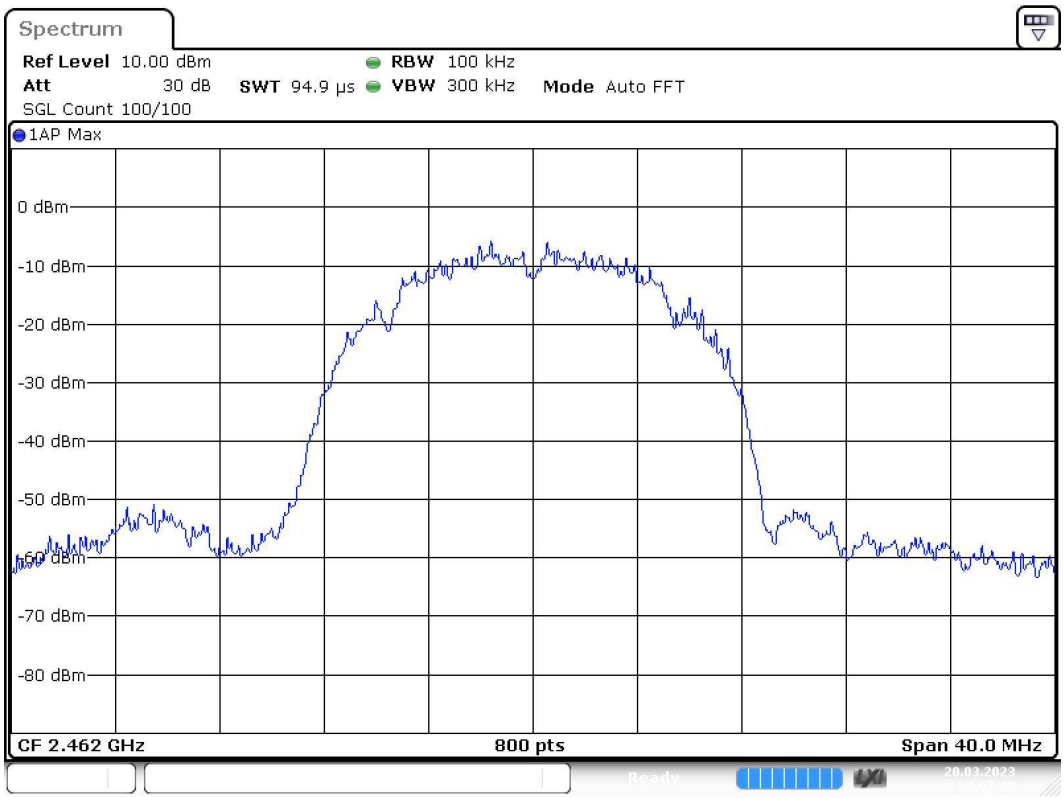
(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2462.000000	5.4	PASS




10
0
-10
-20
-30
-40
-50
Level in dBm
13.100 MHz
2442
2450
2460
2470
2482
Frequency in MHz

Bandwidth



Date: 20.MAR.2023 09:07:45

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44200 GHz	2.44200 GHz
Stop Frequency	2.48200 GHz	2.48200 GHz
Span	40.000 MHz	40.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	800	~ 800
Sweeptime	94.922 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	Peak	Peak
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

Minimum Emission Bandwidth 6 dB (2462 MHz; 20.000 dBm; 20 MHz)

Customized settings.

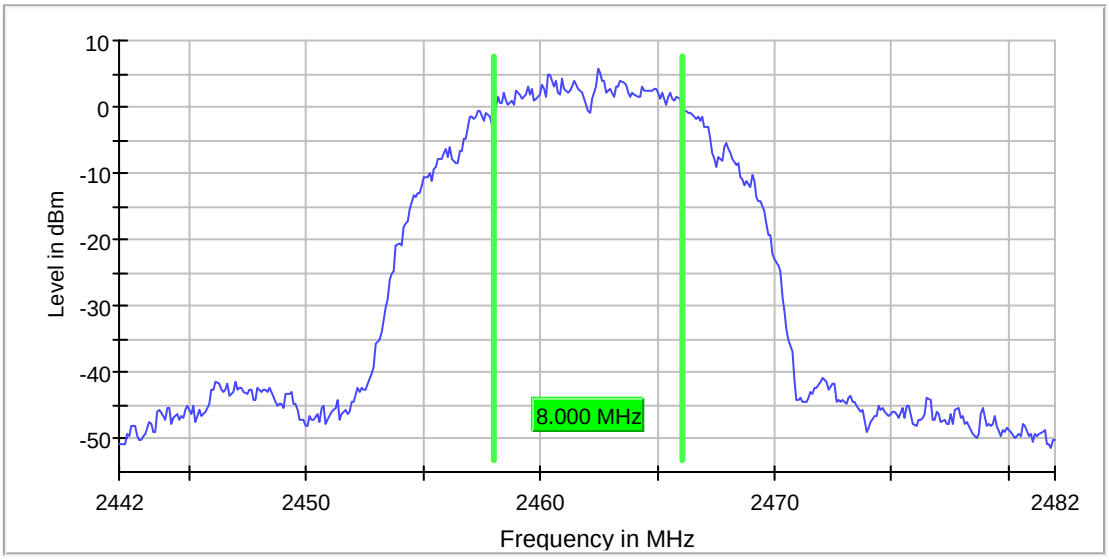
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

6 dB Bandwidth

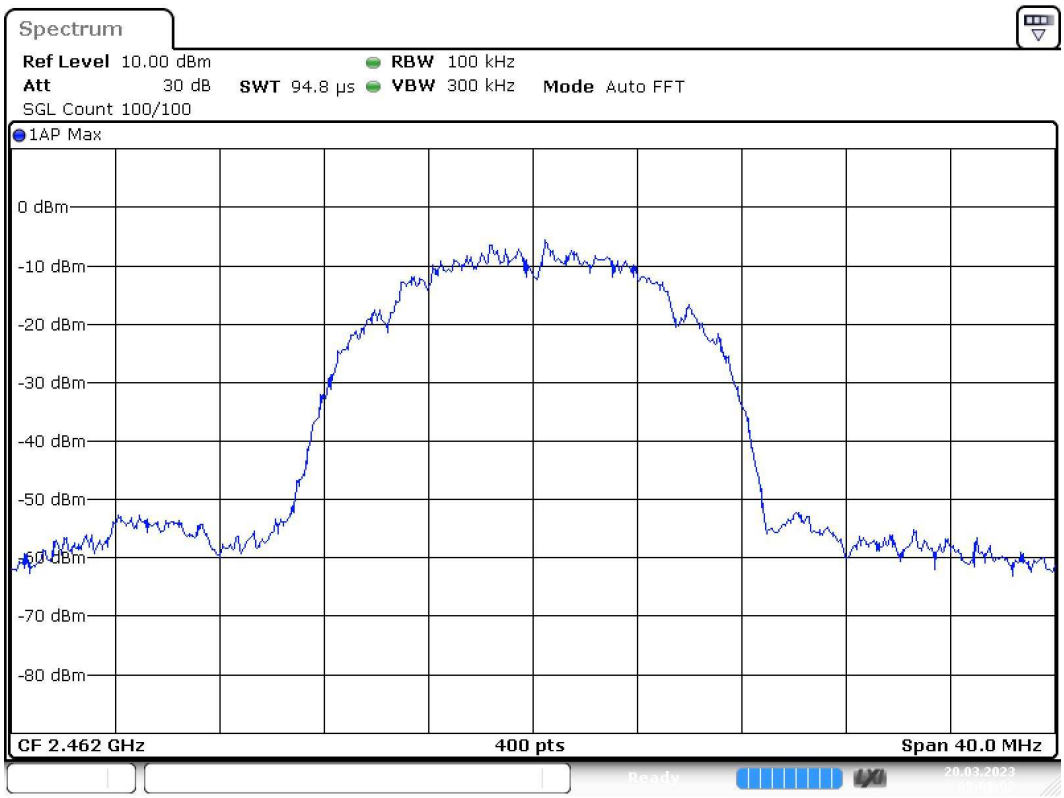
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2462.000000	8.000000	0.500000	---	2458.050000	2466.050000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2462.000000	5.6	PASS



Bandwidth



Date: 20.MAR.2023 09:08:02

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44200 GHz	2.44200 GHz
Stop Frequency	2.48200 GHz	2.48200 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	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	Peak	Peak
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

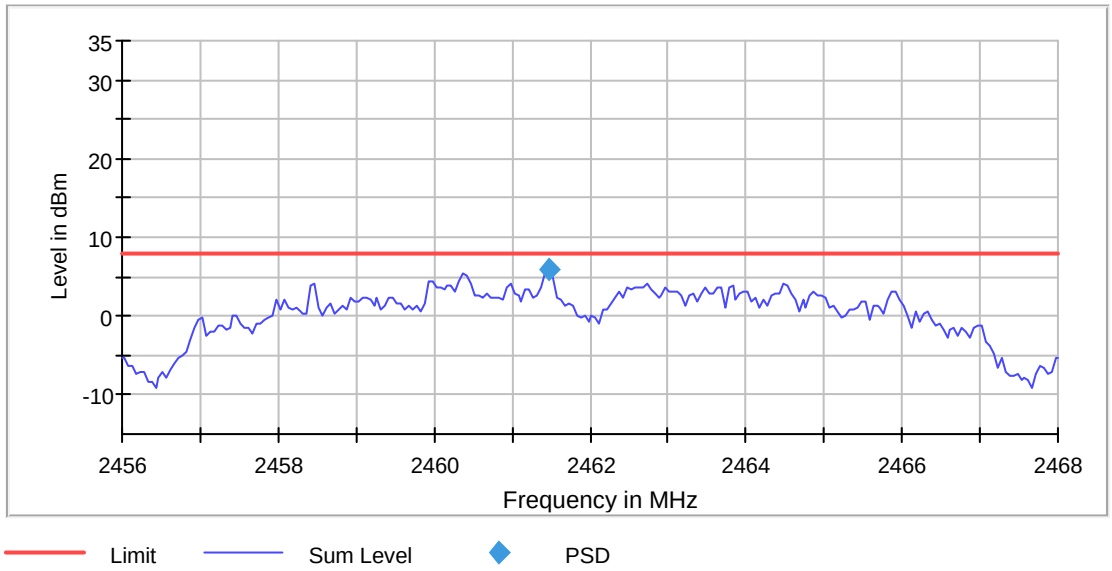
Peak Power Spectral Density (2462 MHz; 20.000 dBm; 20 MHz)

Customized settings.

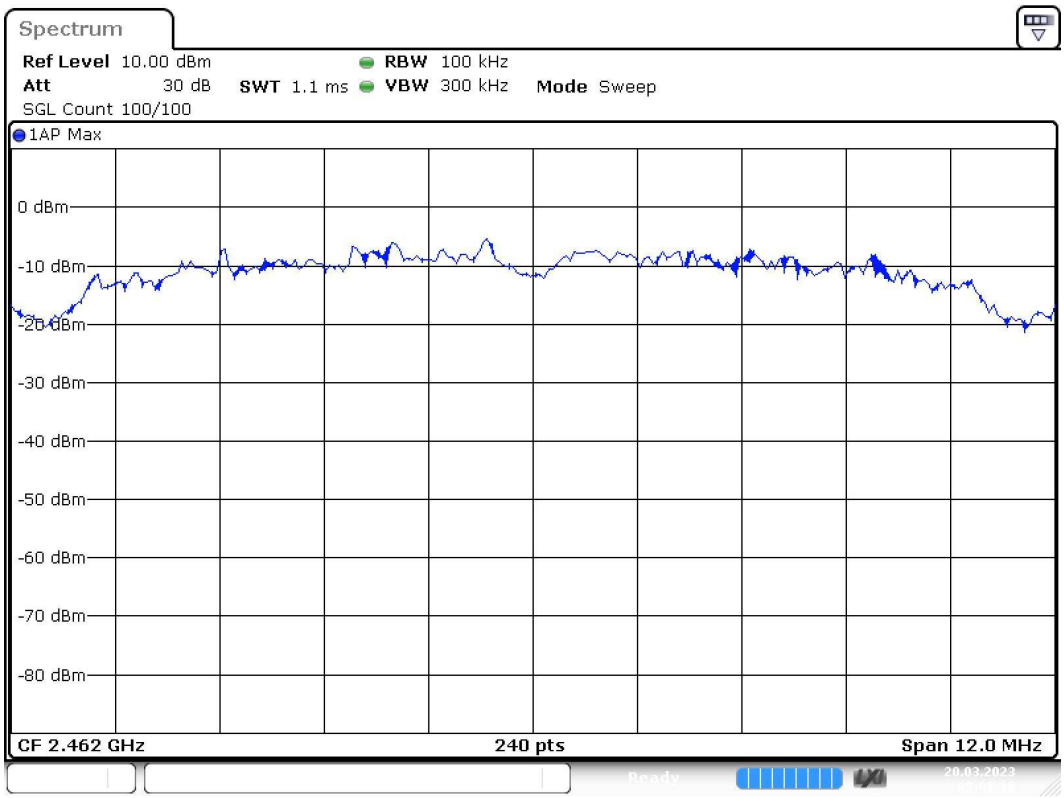
Test according to FCC title 47 part 15 §15.247(a),(e), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2462.000000	2461.475000	5.927	8.0	PASS



PSD Connector 1



Date: 20.MAR.2023 09:08:37

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.45600 GHz	2.45600 GHz
Stop Frequency	2.46800 GHz	2.46800 GHz
Span	12.000 MHz	12.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	240	~ 240
Sweeptime	1.080 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	Peak	Peak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
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

Band Edge high (2462 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Result

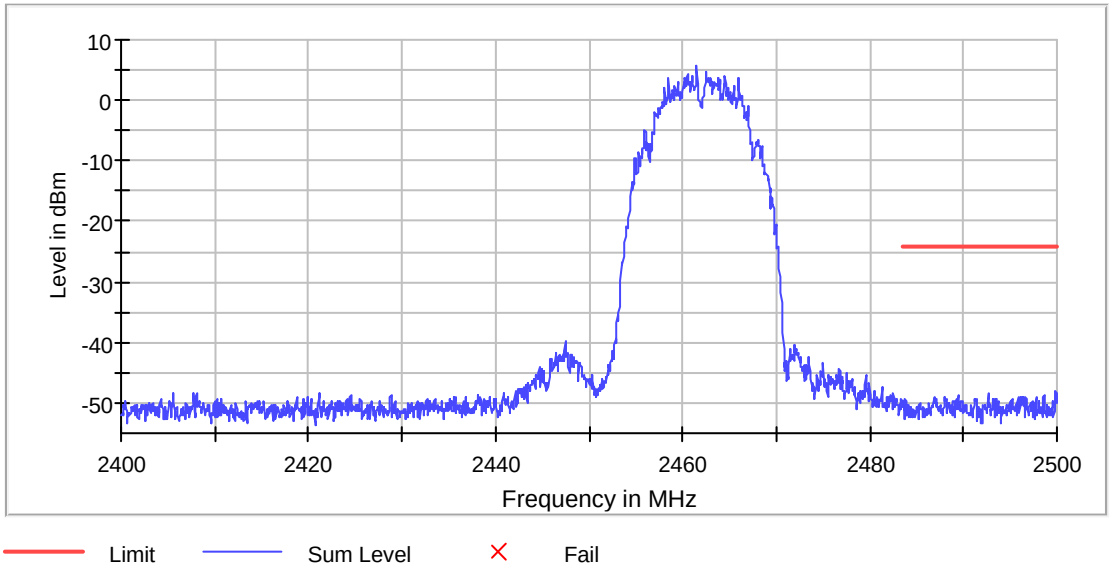
DUT Frequency (MHz)	Result
2462.000000	PASS

Inband Peak

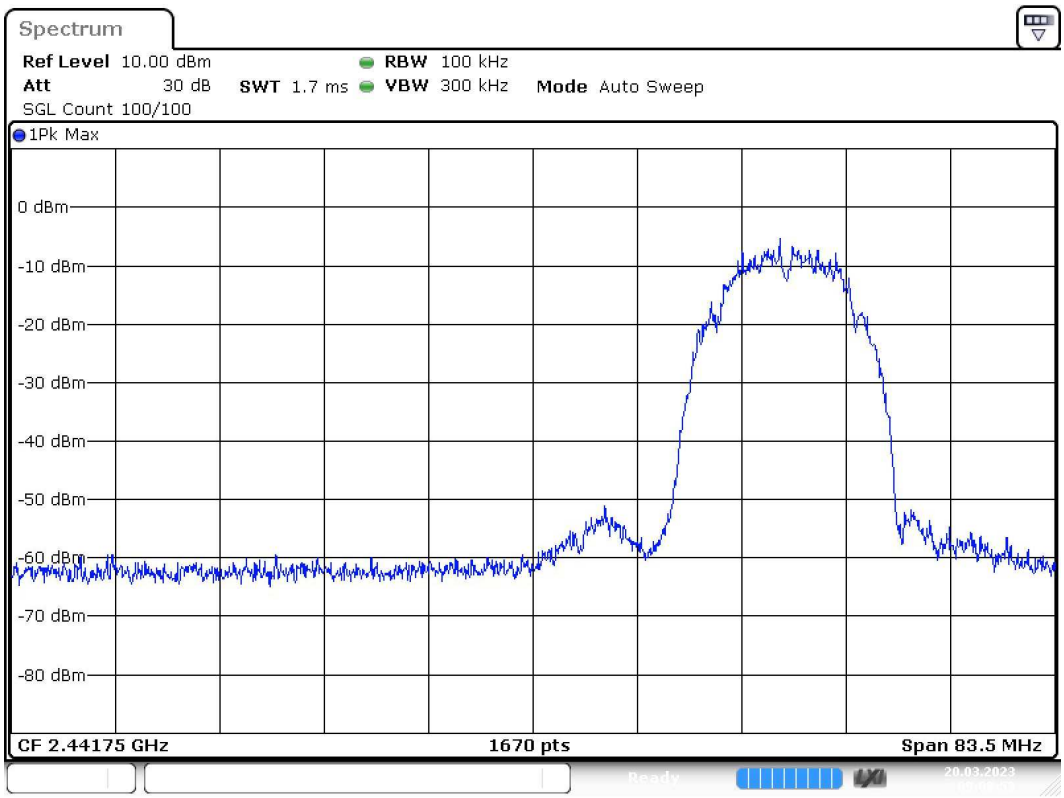
Frequency (MHz)	Level (dBm)
2461.475000	5.8

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2499.875000	-48.2	24.0	-24.2	PASS
2492.675000	-48.2	24.1	-24.2	PASS
2499.925000	-48.3	24.2	-24.2	PASS
2492.625000	-48.5	24.3	-24.2	PASS
2498.625000	-48.7	24.5	-24.2	PASS
2499.825000	-48.8	24.6	-24.2	PASS
2489.425000	-48.8	24.7	-24.2	PASS
2496.125000	-48.9	24.7	-24.2	PASS
2496.175000	-48.9	24.7	-24.2	PASS
2489.475000	-48.9	24.8	-24.2	PASS
2488.025000	-48.9	24.8	-24.2	PASS
2496.675000	-48.9	24.8	-24.2	PASS
2498.575000	-49.0	24.8	-24.2	PASS
2496.625000	-49.0	24.9	-24.2	PASS
2486.875000	-49.1	24.9	-24.2	PASS



Band Edge Connector 1_0



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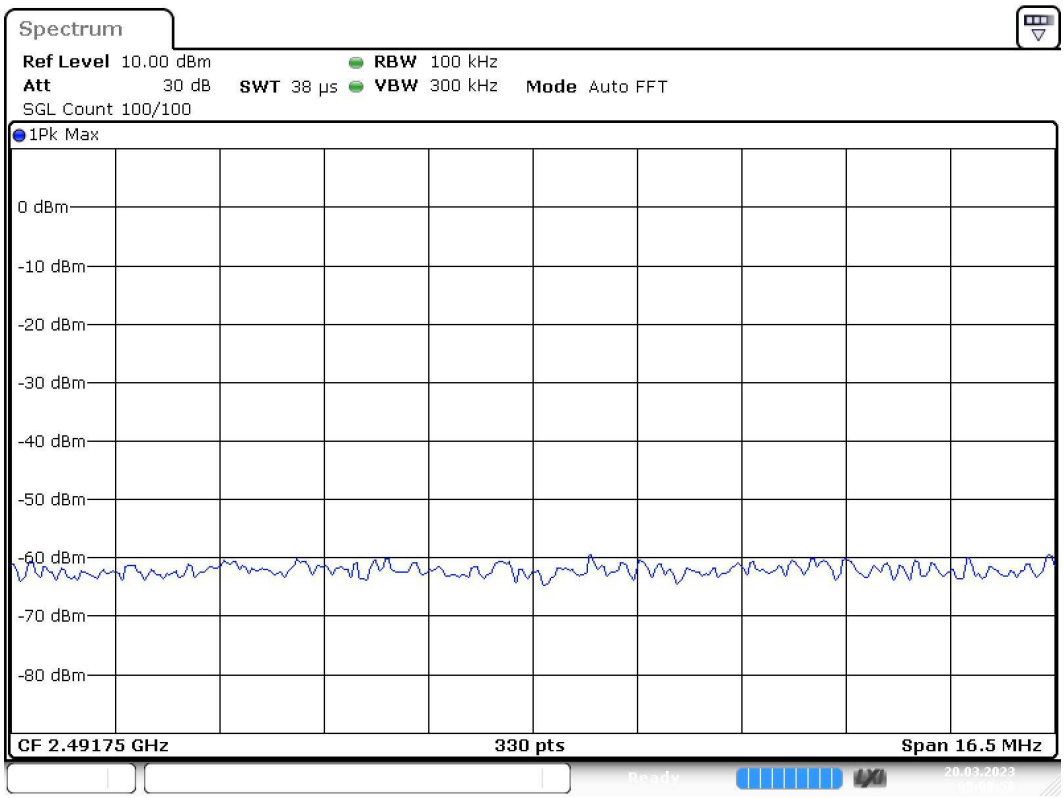
Band Edge Connector 1_1



Date: 20.MAR.2023 09:08:58

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	1.670 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 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

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.48350 GHz	2.48350 GHz
Stop Frequency	2.50000 GHz	2.50000 GHz
Span	16.500 MHz	16.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz

SweepPoints	**330**	**~ 330**
Sweeptime	**37.969 µs**	**AUTO**
Reference Level	**10.000 dBm**	**10.000 dBm**
Attenuation	**30.000 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**

Tx Spurious Emission (2462 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
2462.000000	PASS

Final measurements

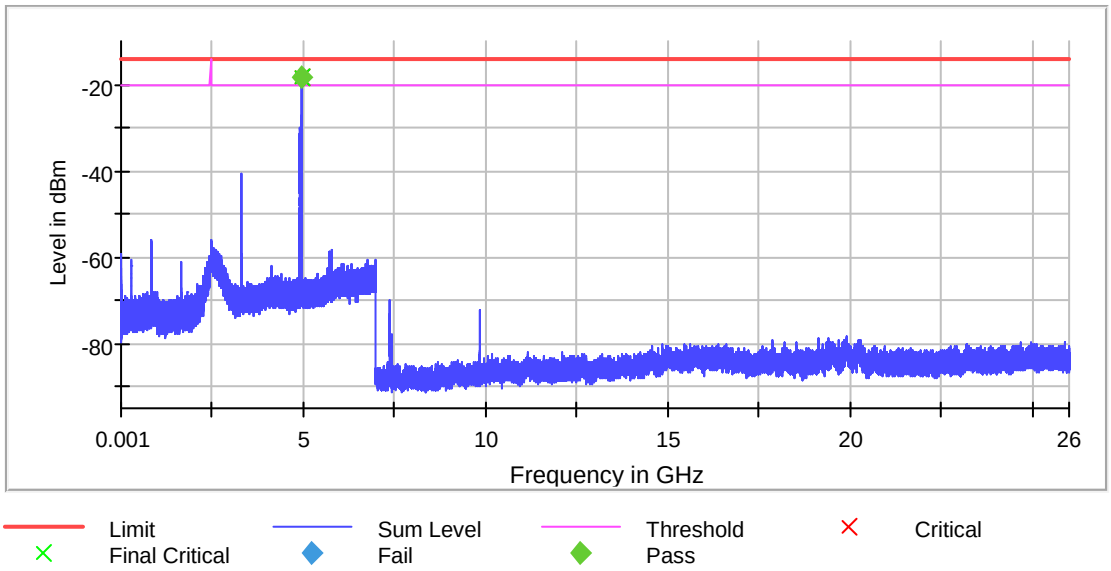
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
4923.956853	-18.6	-18.4	-14.1	4.4	PASS

Pre Measurements

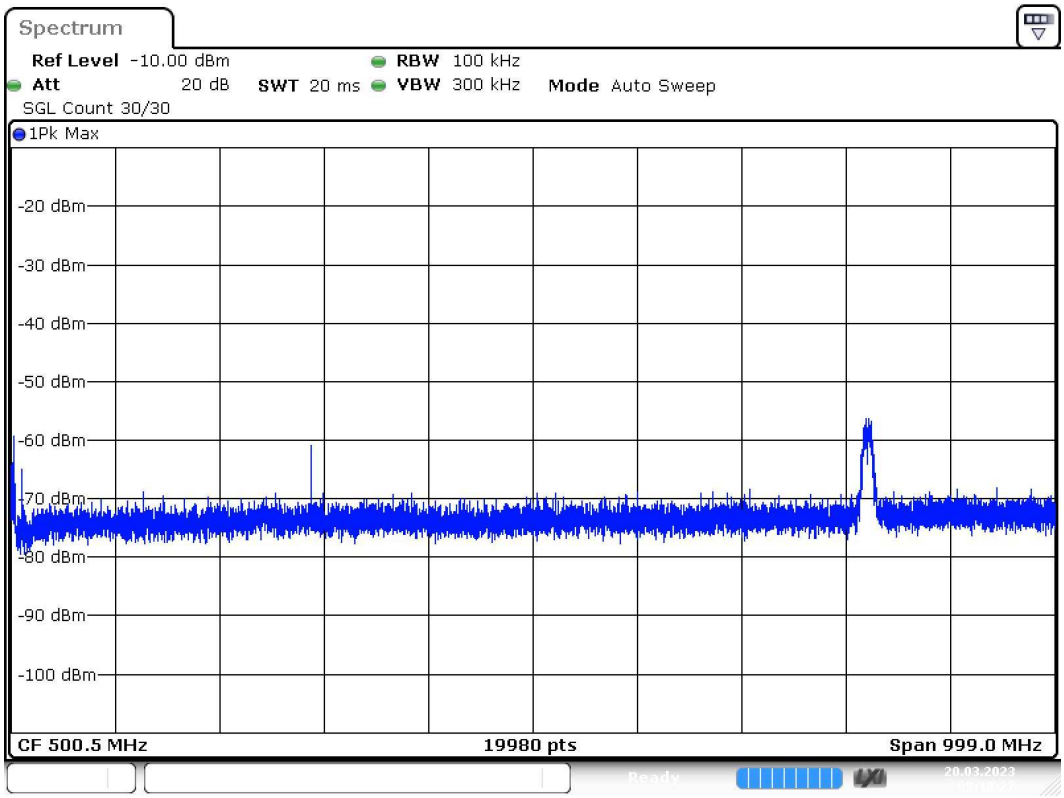
Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
4923.956853	-18.6	4.5	-14.1
4924.097989	-22.9	8.8	-14.1
4923.815717	-24.5	10.4	-14.1
4923.533444	-27.3	13.2	-14.1
4924.380262	-27.5	13.4	-14.1
4925.085943	-28.4	14.3	-14.1
4926.920713	-28.7	14.6	-14.1
4922.968899	-28.7	14.6	-14.1
4927.202986	-29.1	15.0	-14.1
4923.674580	-29.2	15.2	-14.1
4927.061850	-29.4	15.3	-14.1
4924.944806	-29.5	15.4	-14.1
4924.239125	-29.7	15.6	-14.1
4923.392308	-29.7	15.7	-14.1
4920.851856	-29.8	15.7	-14.1

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
1.000000	1000.000000	1	1
1000.000000	2400.000000	2	2
2483.500000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2

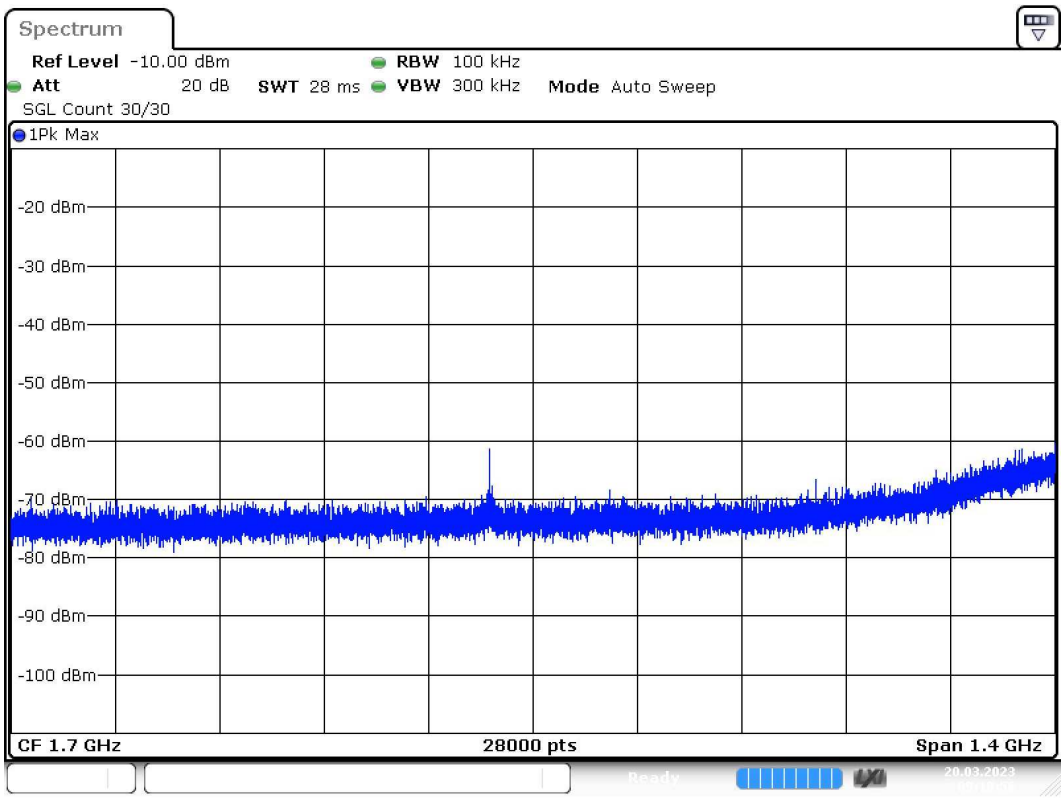


Spurious Connector 1_0



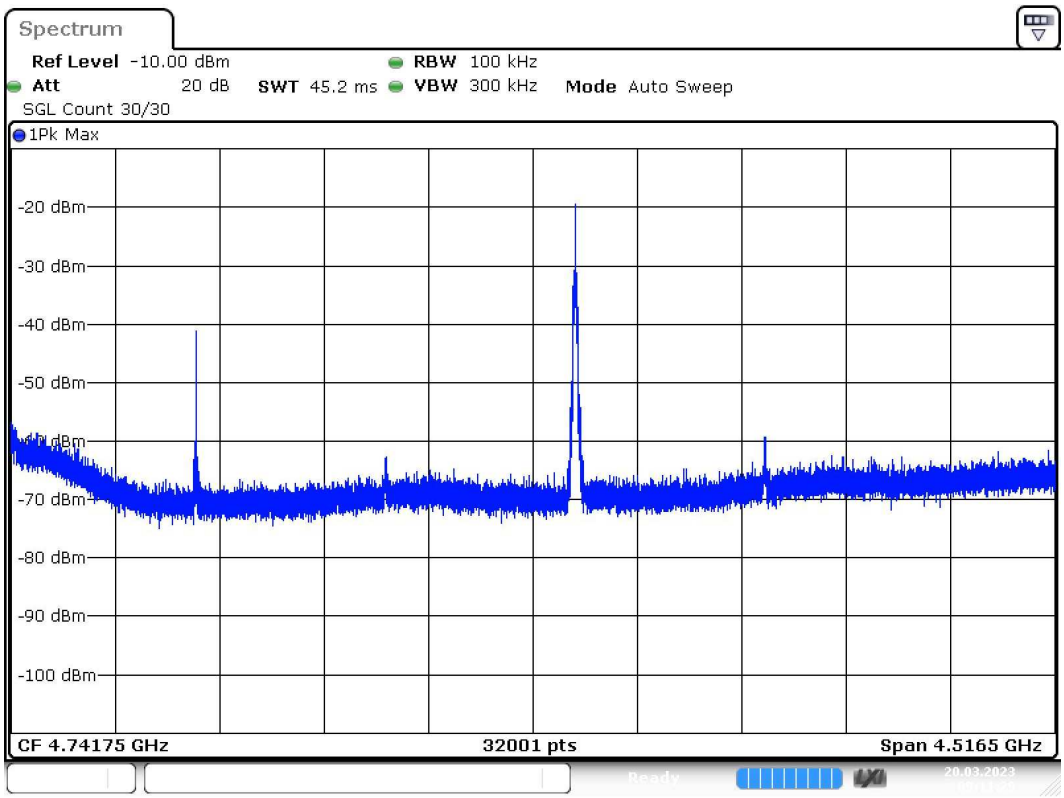
Date: 20.MAR.2023 09:10:28

Spurious Connector 1_1



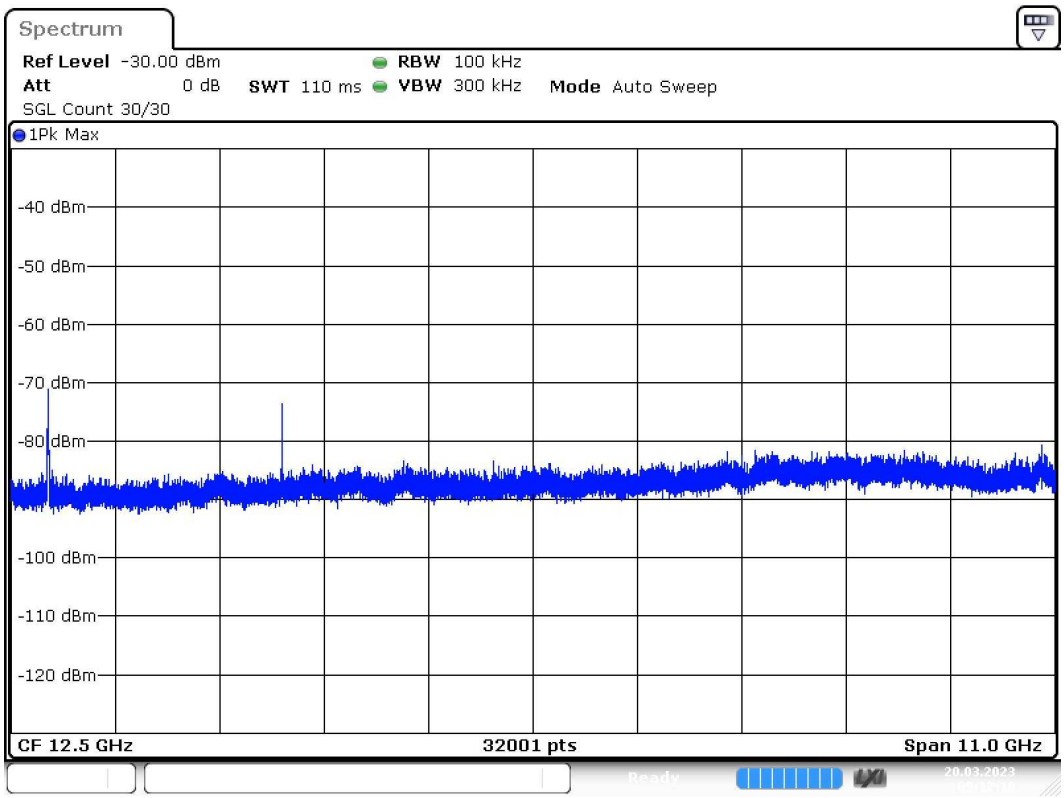
Date: 20.MAR.2023 09:10:57

Spurious Connector 1_2



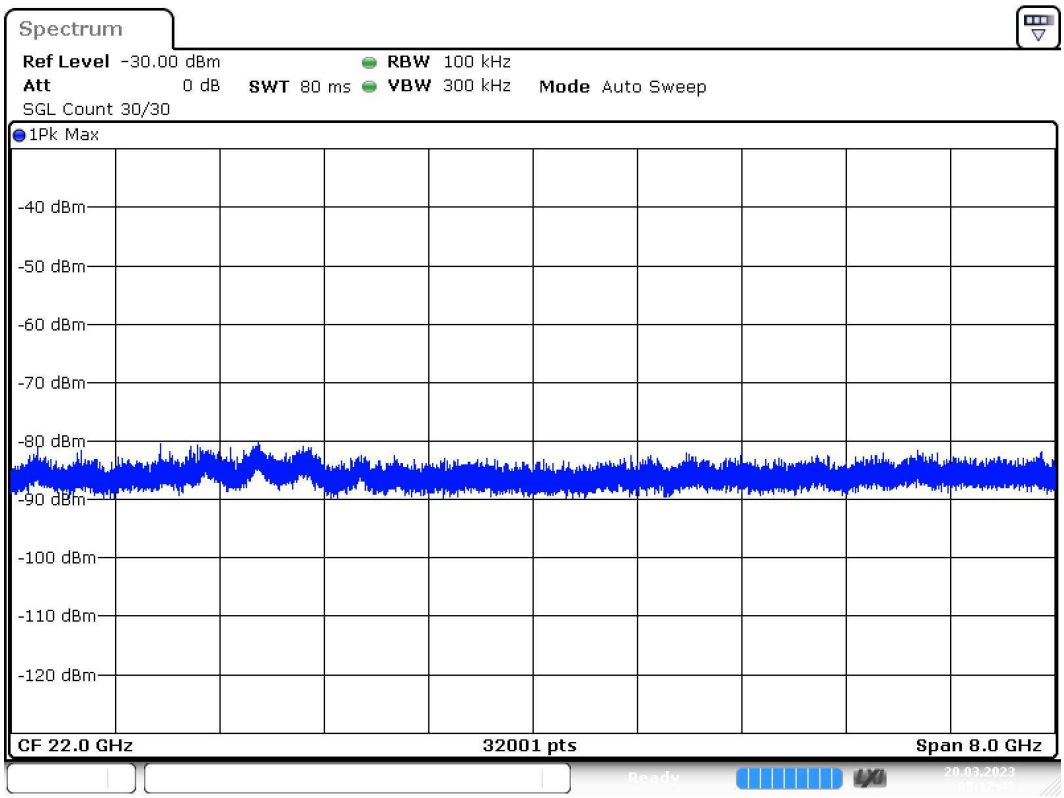
Date: 20.MAR.2023 09:11:29

Spurious Connector 1_3



Date: 20.MAR.2023 09:12:10

Spurious Connector 1_4



Date: 20.MAR.2023 09:12:43

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	19980	~ 19980
Sweeptime	20.000 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 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	1 / max. 1	max. 1
Stable	0 / 1	1
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	28000	~ 28000
Sweeptime	28.000 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 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	**1.00 dB**	**1.00 dB**
Run	**1 / max. 1**	**max. 1**
Stable	**0 / 3**	**3**
Max Stable Difference	**0.00 dB**	**1.00 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	**1.000 s**	**1.000 s**
Reference Level	**0.000 dBm**	**0.000 dBm**
Attenuation	**20.000 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**