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)	BT CH 3 (2405 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

Powerstep name (value)	Beamforming gain table names
20.000 dBm (20 dBm)	BFG_'20.000 dBm'_0.000dB;

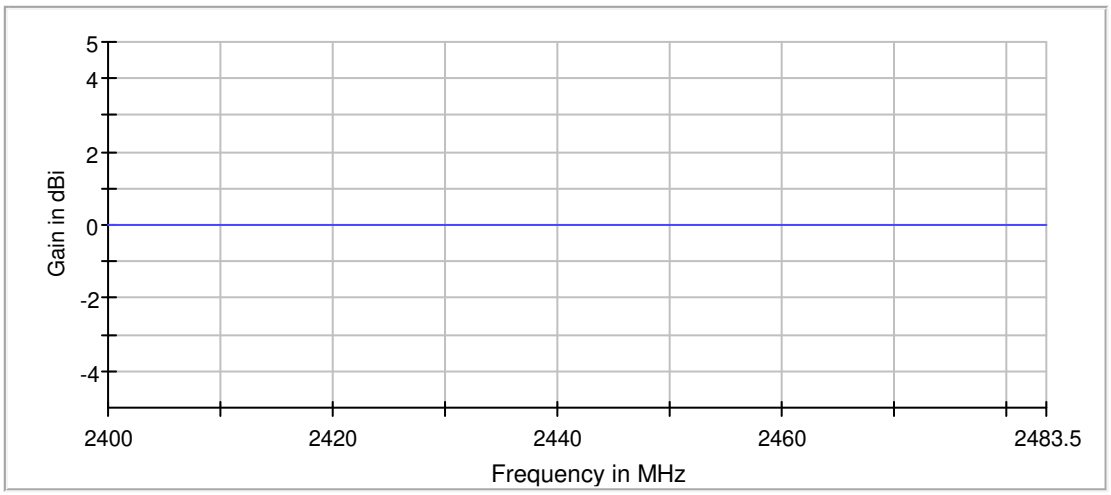
Gain Tables

Powerstep name (value)	Gain table names
20.000 dBm (20 dBm)	Port 1: ---;

DUT Settings

No. of transmission chains	1
Equipment Type	Other
Digital Modulation	Yes
Frequency Hopping	No

Gaintable BFG_'20.000 dBm'_0.000dB



Gaintable: BFG_'20.000 dBm'_0.000dB

Hardware Setup: WMS Measurements\TS8997

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1307.9002K40/101076, 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 (1) (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 178361, FW 3.20.390.24 / 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 1.27.0.0

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
RF output power	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
RF output power	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 C63.10-2013

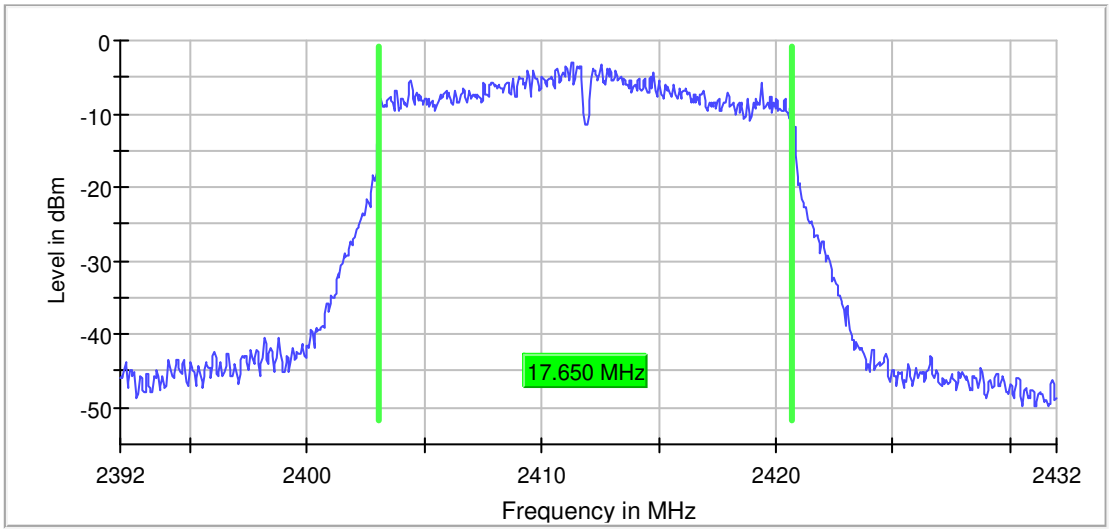
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2412.000000	17.650000	0.500000	---	2403.075000	2420.725000

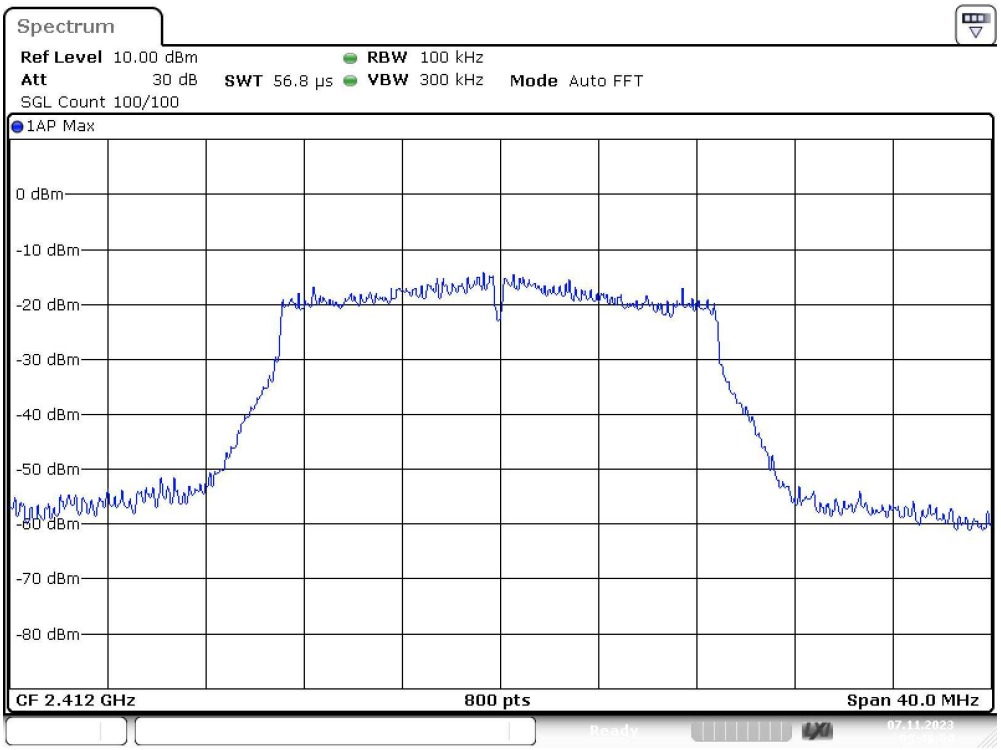
(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2412.000000	-2.9	PASS

6 dB Bandwidth



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	56.836 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 C63.10-2013

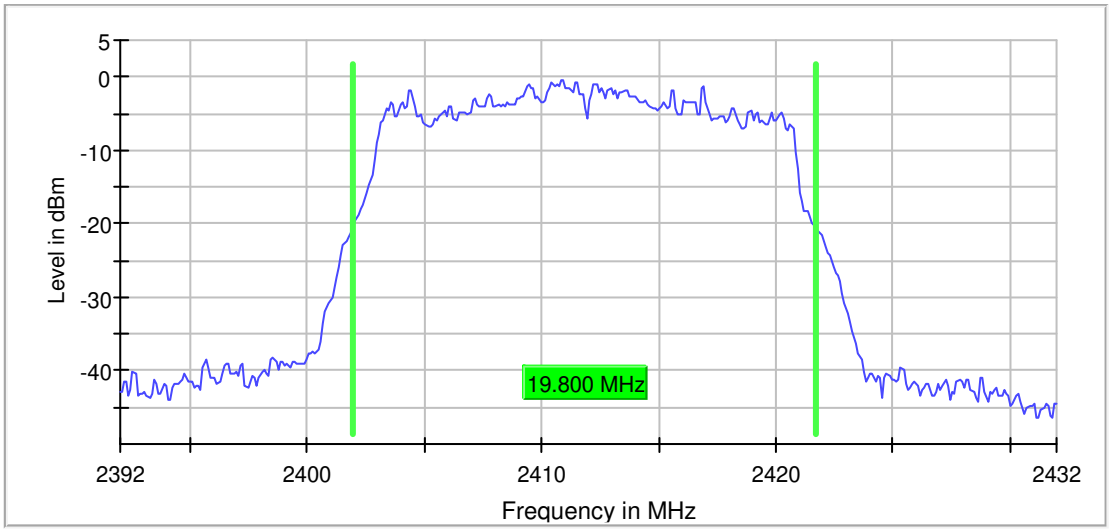
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2412.000000	19.800000	---	---	2401.950000	2421.750000

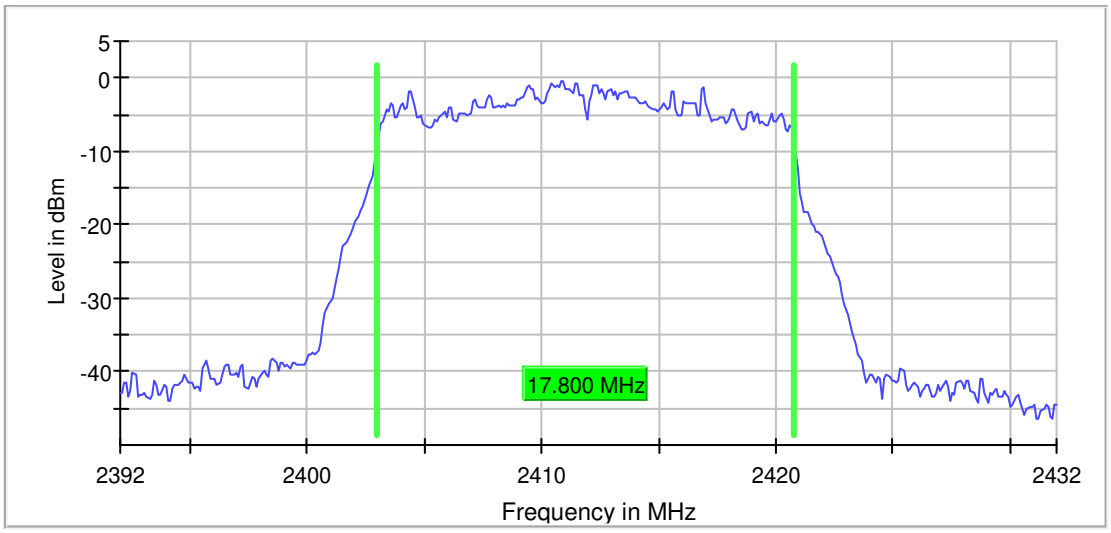
(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2412.000000	-0.4	PASS

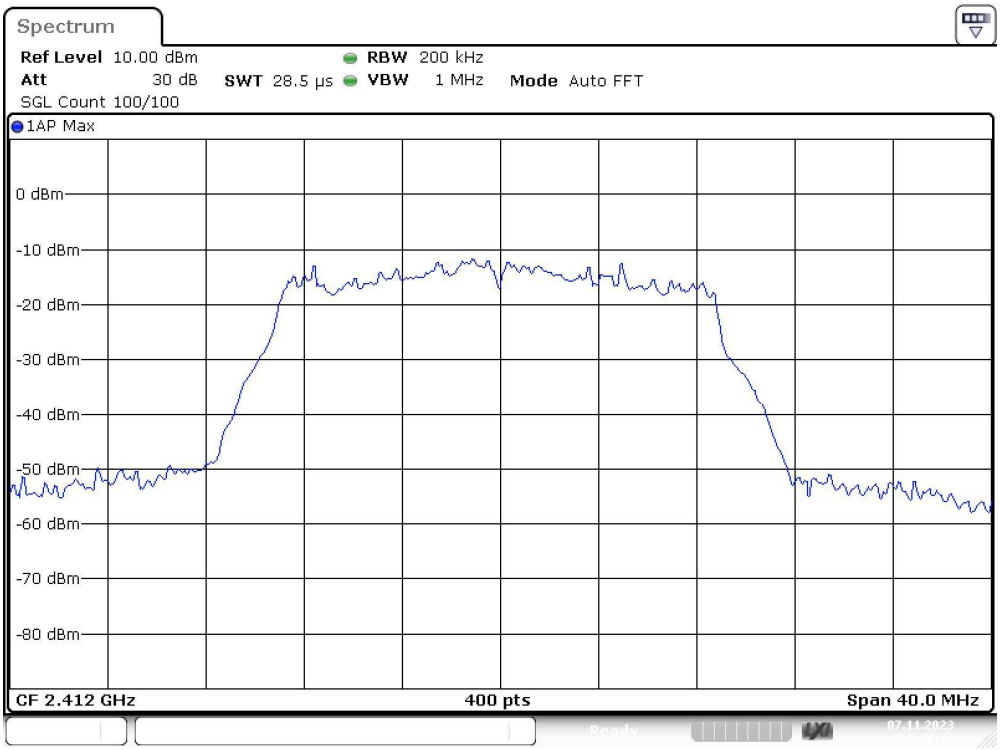
20 dB Bandwidth



99 % Bandwidth



Bandwidth



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Measurement

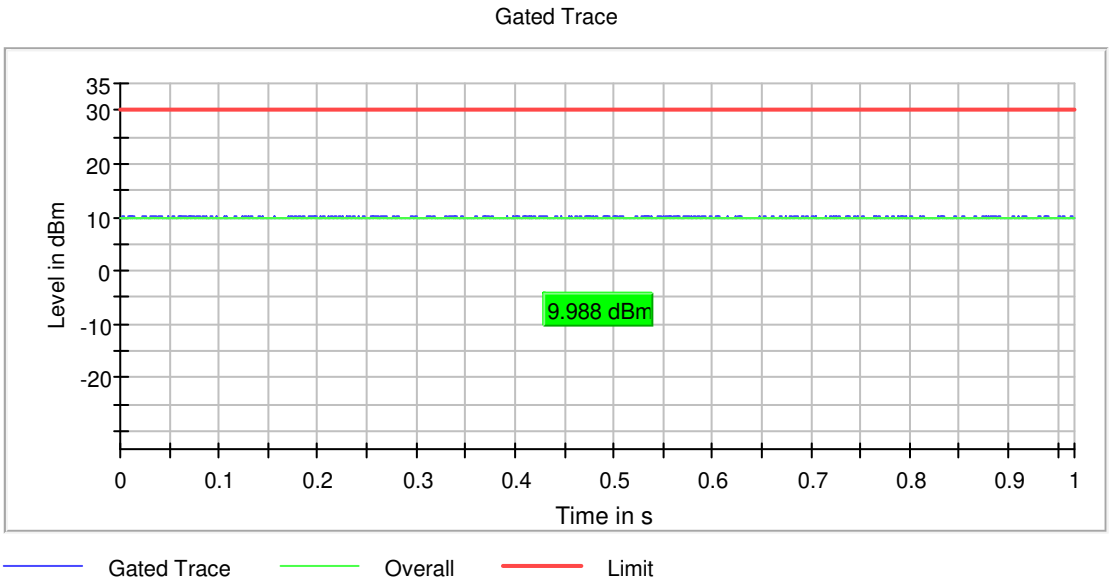
Setting	Instrument Value	Target Value
Start Frequency	2.39200 GHz	2.39200 GHz
Stop Frequency	2.43200 GHz	2.43200 GHz
Span	40.000 MHz	40.000 MHz
RBW	200.000 kHz	>= 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	400	~ 400
Sweeptime	28.477 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	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

RF output power (2412 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.247(b), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2412.000000	10.0	30.0	10.0	96.965	PASS



OSP PowerMeter settings

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

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

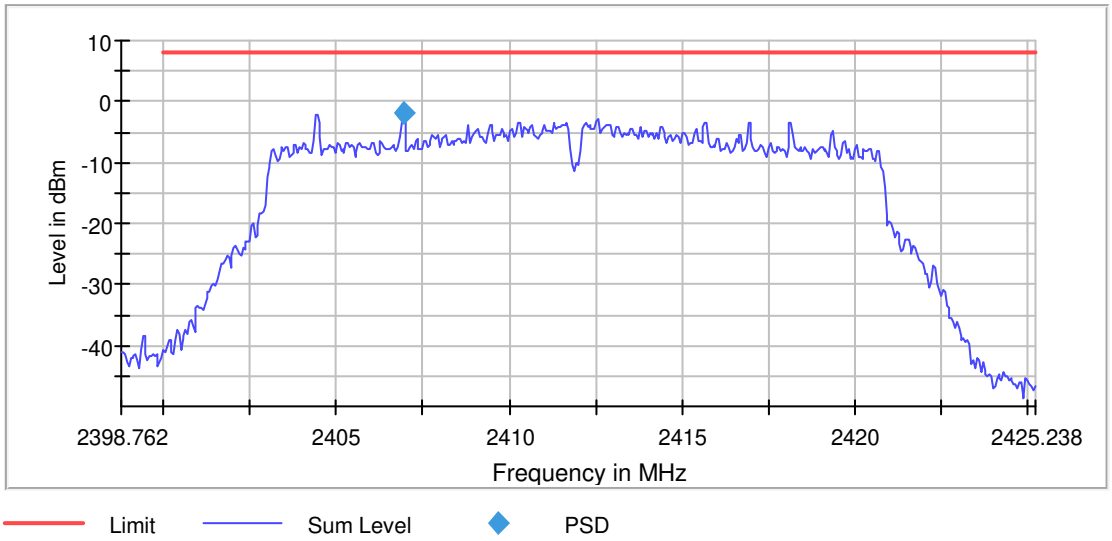
Customized settings.

Test according to FCC title 47 part 15 §15.247(a),(e), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10-2013

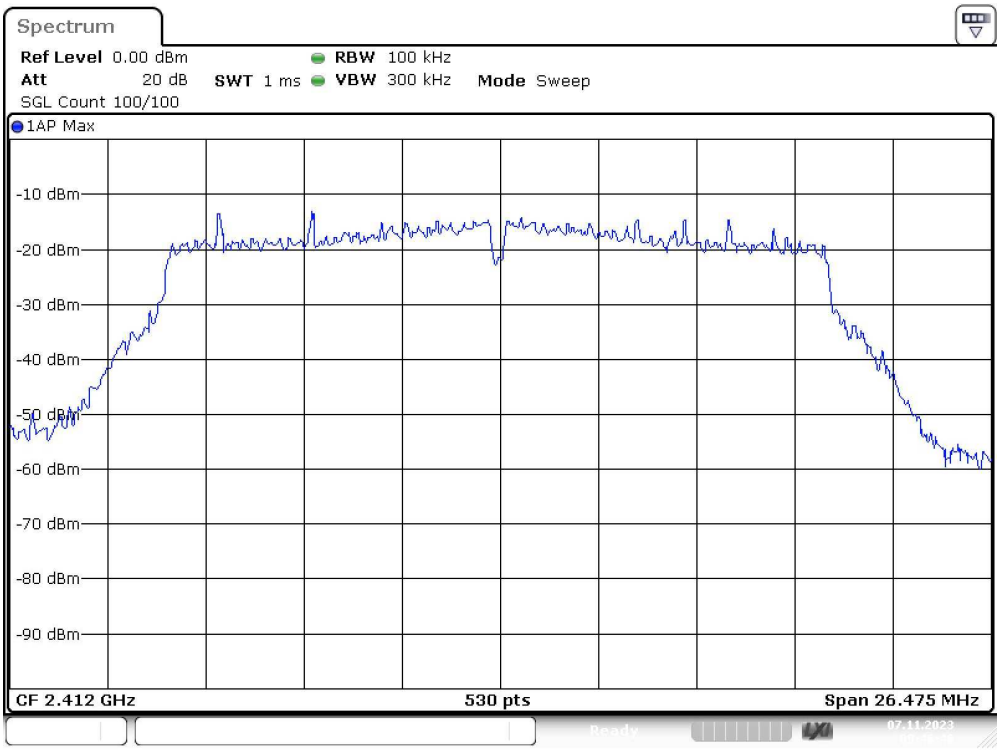
Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2412.000000	2406.929788	-1.856	8.0	PASS

Peak Power Spectral Density



PSD Connector 1



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Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.39876 GHz	2.39876 GHz
Stop Frequency	2.42524 GHz	2.42524 GHz
Span	26.475 MHz	26.475 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	530	~ 530
Sweeptime	1.010 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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 C63.10-2013

Result

DUT Frequency (MHz)	Result
2412.000000	PASS

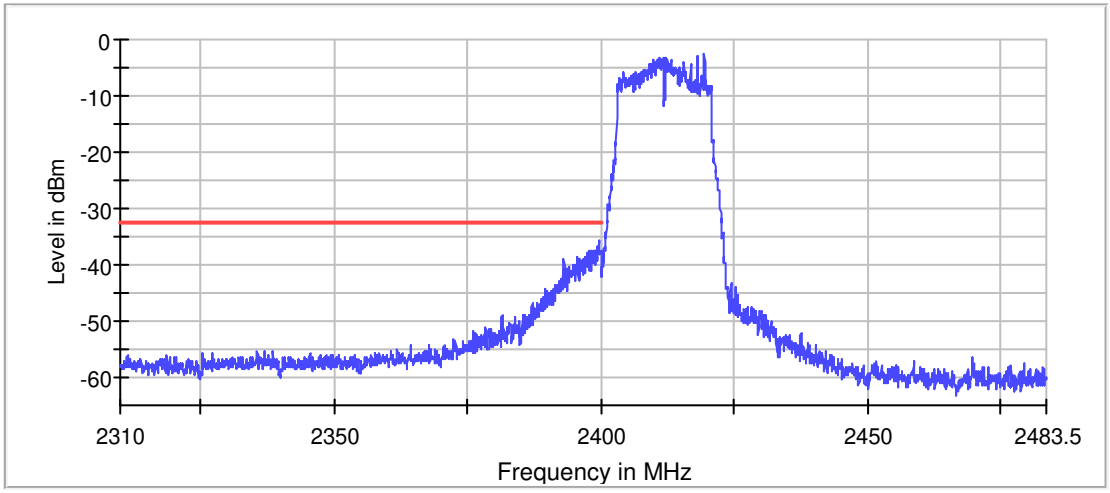
Inband Peak

Frequency (MHz)	Level (dBm)
2419.425000	-2.6

Measurements

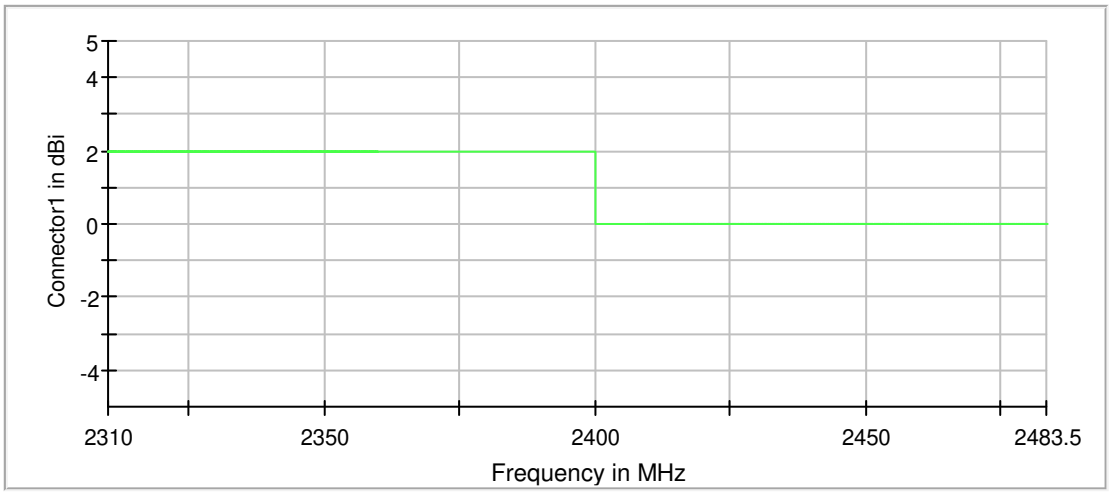
Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2399.625000	-35.6	3.0	-32.6	PASS
2399.575000	-35.9	3.3	-32.6	PASS
2399.675000	-36.3	3.7	-32.6	PASS
2399.425000	-36.9	4.3	-32.6	PASS
2399.475000	-37.4	4.8	-32.6	PASS
2399.075000	-37.4	4.8	-32.6	PASS
2398.825000	-37.5	4.9	-32.6	PASS
2399.975000	-37.5	4.9	-32.6	PASS
2398.775000	-37.5	4.9	-32.6	PASS
2399.375000	-37.6	5.0	-32.6	PASS
2399.825000	-37.6	5.0	-32.6	PASS
2399.725000	-37.6	5.0	-32.6	PASS
2398.175000	-37.7	5.1	-32.6	PASS
2397.825000	-37.7	5.1	-32.6	PASS
2398.525000	-37.7	5.1	-32.6	PASS

Band Edge



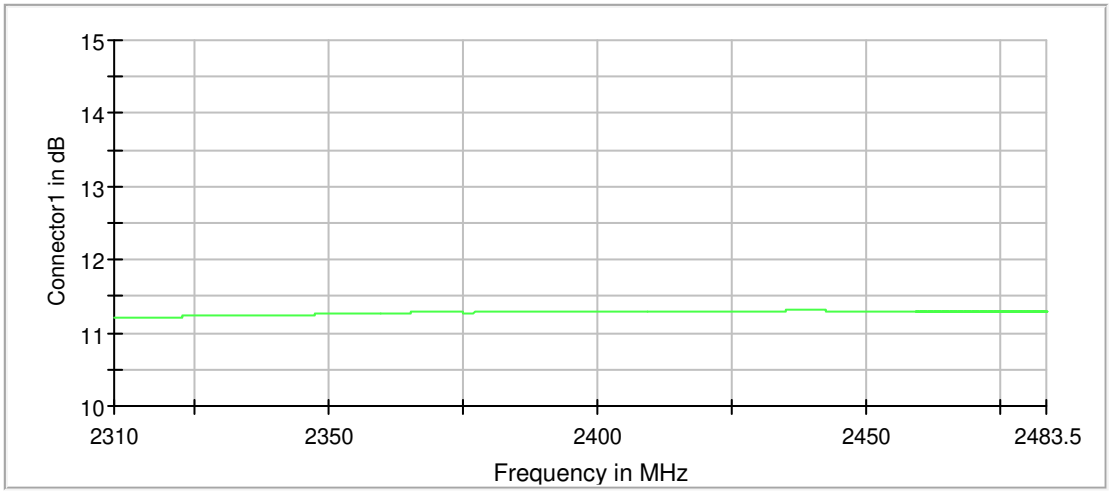
Limit Sum Level Fail

Gain



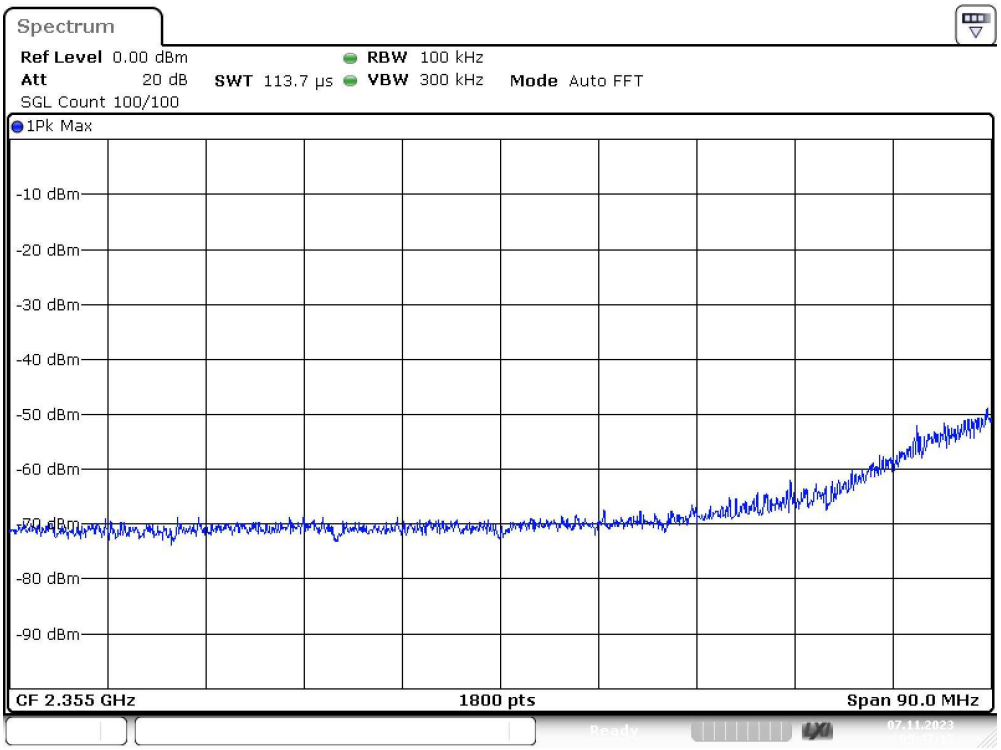
Connector1

Attenuation



Connector1

Band Edge Connector 1_0



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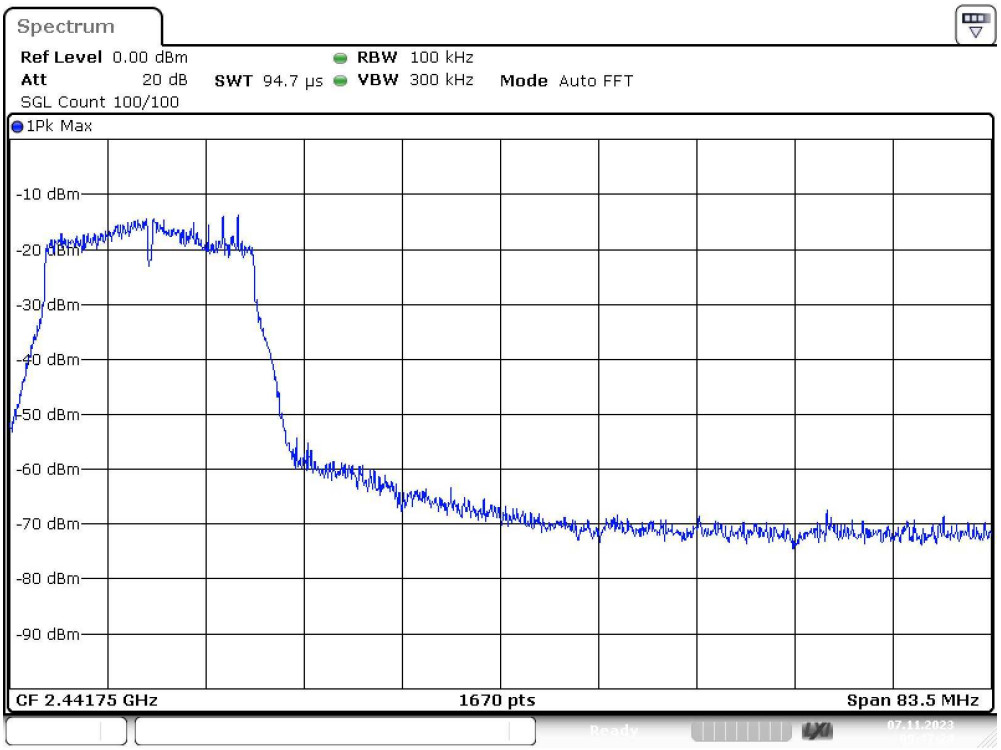
Band Edge Connector 1_1



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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	113.672 µs	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	10 / 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	**94.727 µs**	**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**

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 C63.10-2013

Result

DUT Frequency (MHz)	Result
2412.000000	PASS

Final measurements

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

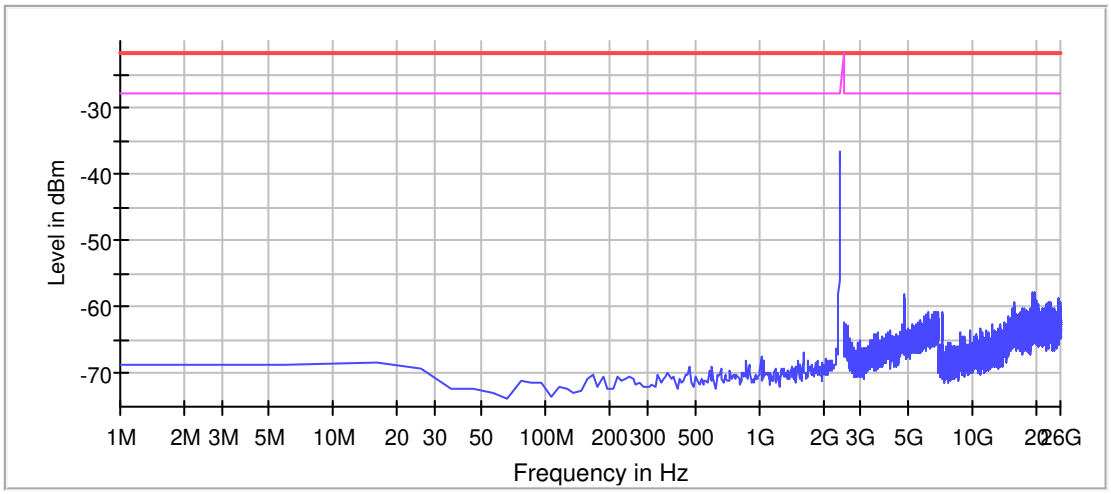
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2395.022822	-36.5	14.6	-21.9
2400.000000	-38.5	16.6	-21.9
2385.068465	-45.4	23.6	-21.9
2375.114108	-56.1	34.3	-21.9
19425.506476	-57.8	35.9	-21.9
19402.725579	-57.8	36.0	-21.9
2365.159751	-58.1	36.3	-21.9
19428.445947	-58.2	36.3	-21.9
4812.663050	-58.2	36.4	-21.9
19415.218329	-58.3	36.4	-21.9
25496.983086	-58.5	36.7	-21.9
4823.686064	-58.6	36.7	-21.9
19433.590021	-58.6	36.8	-21.9
19409.339388	-58.7	36.8	-21.9
19405.665050	-58.9	37.1	-21.9

Measurement Settings

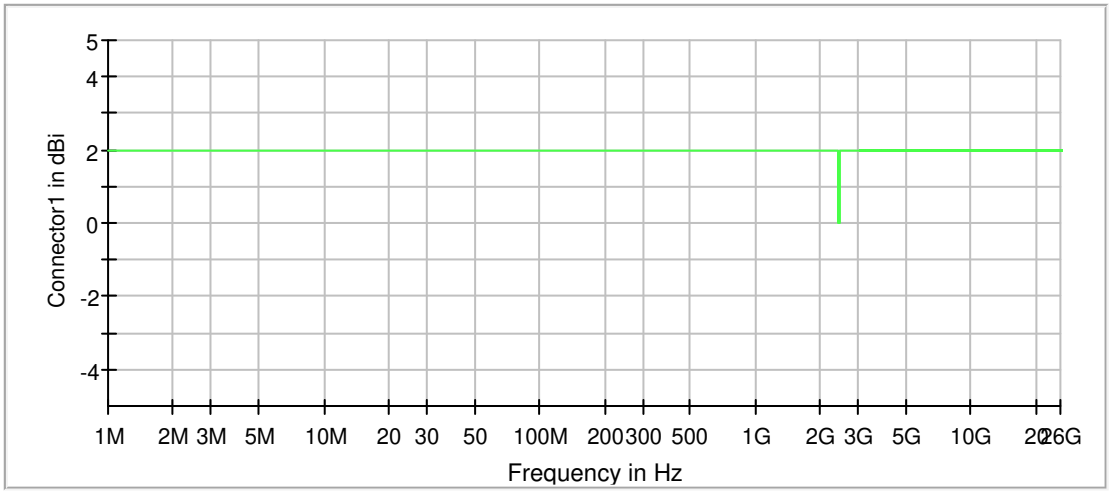
Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
1.000000	2400.000000	1	1
2483.500000	26000.000000	2	2

Spurious

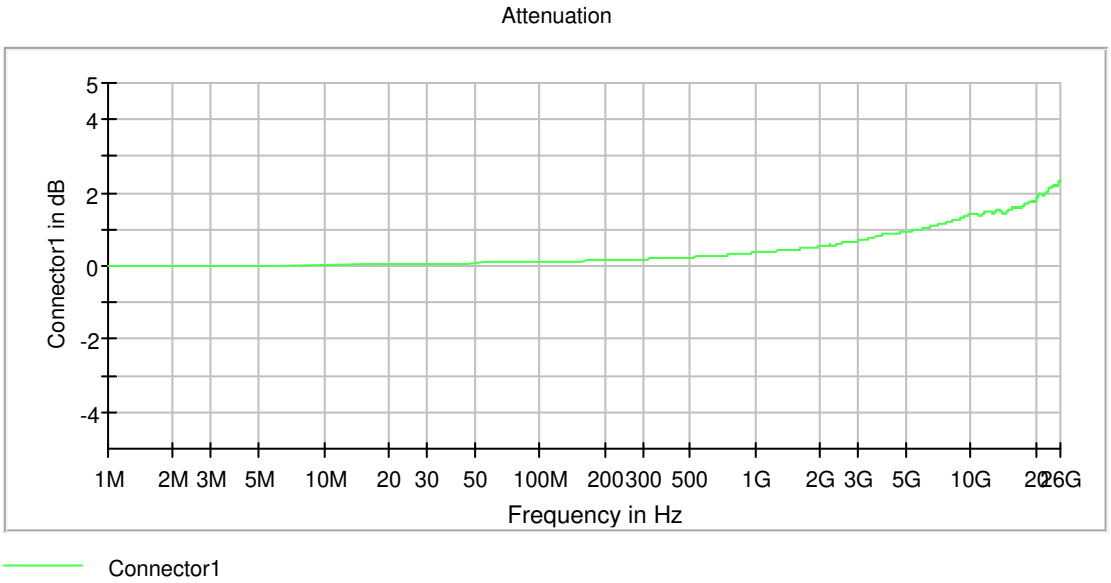


Limit Sum Level Threshold Critical Final Critical

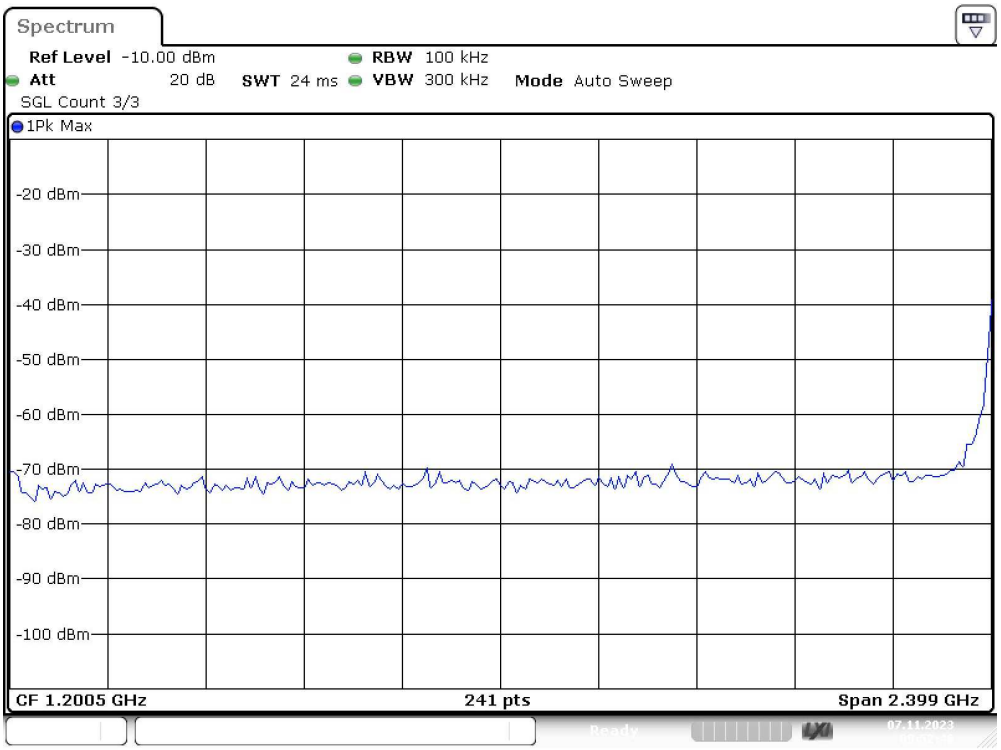
Gain



Connector1



Spurious Connector 1_0



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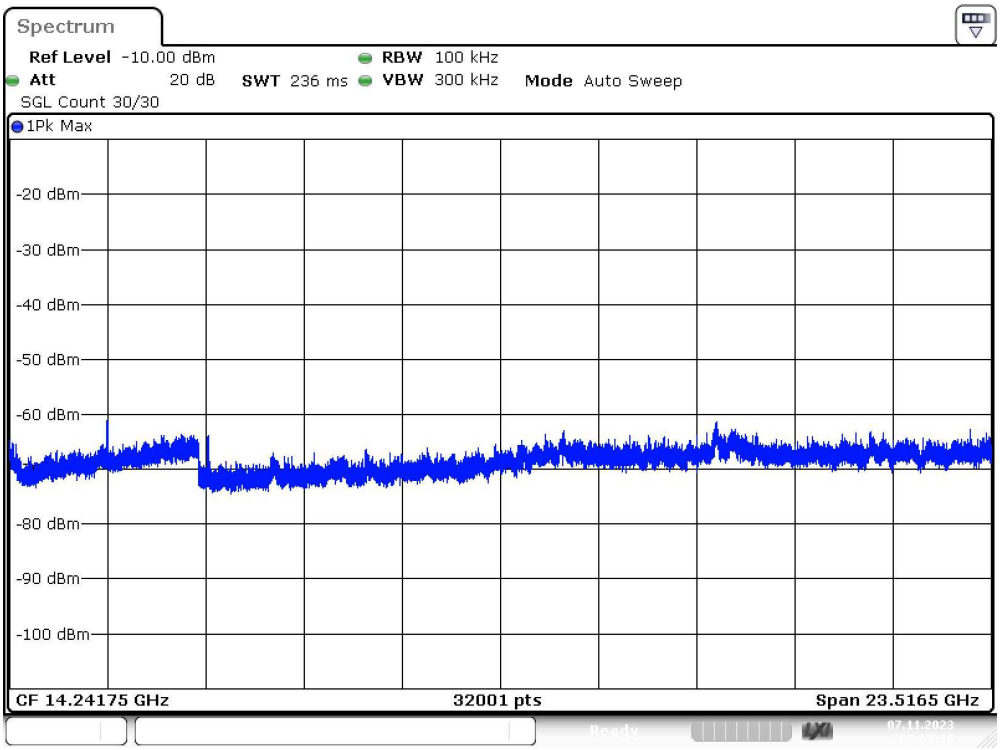
Spurious Connector 1_1



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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	241	~ 241
Sweeptime	24.000 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
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**

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 C63.10-2013

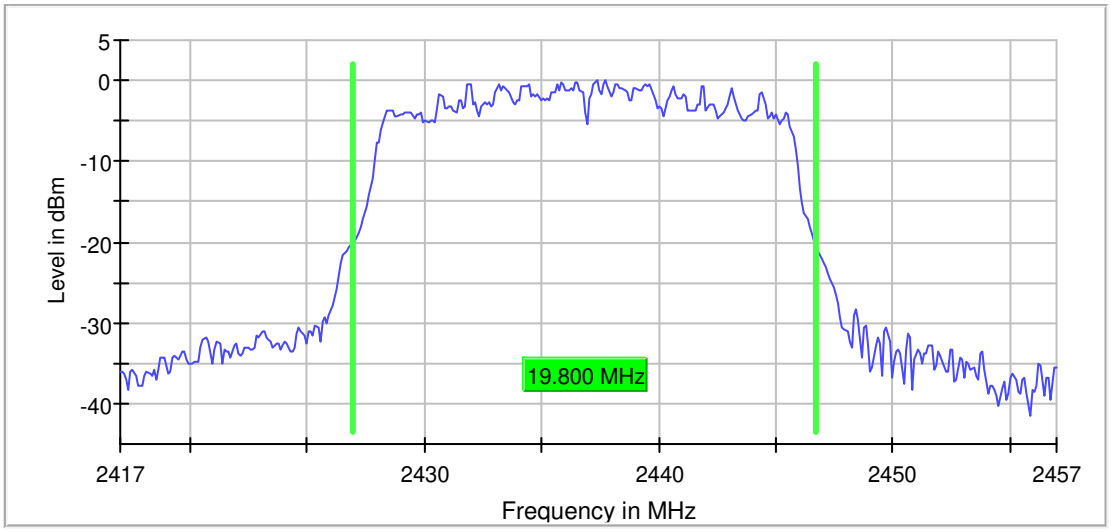
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2437.000000	19.800000	---	---	2426.950000	2446.750000

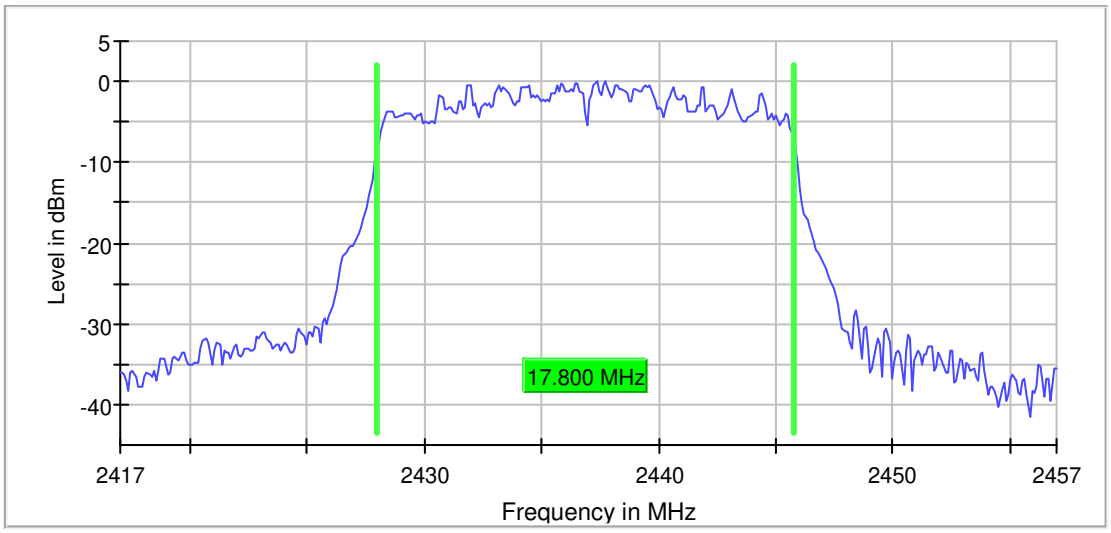
(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2437.000000	0.0	PASS

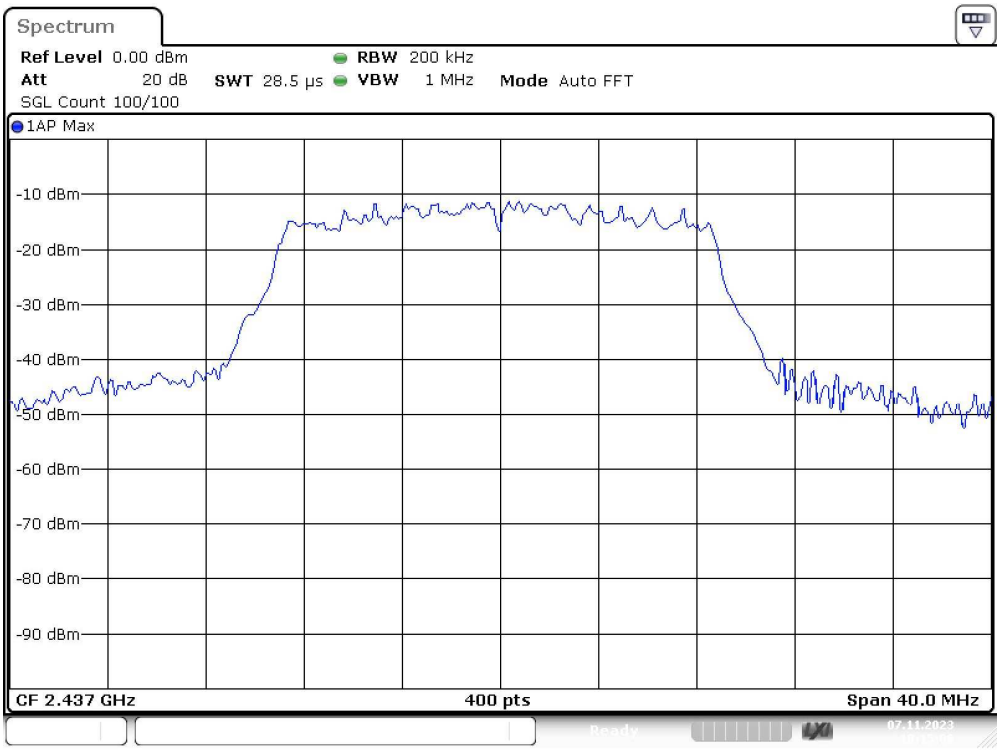
20 dB Bandwidth



99 % Bandwidth



Bandwidth



Date: 7.NOV.2023 10:15:08

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	200.000 kHz	>= 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	400	~ 400
Sweeptime	28.477 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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 C63.10-2013

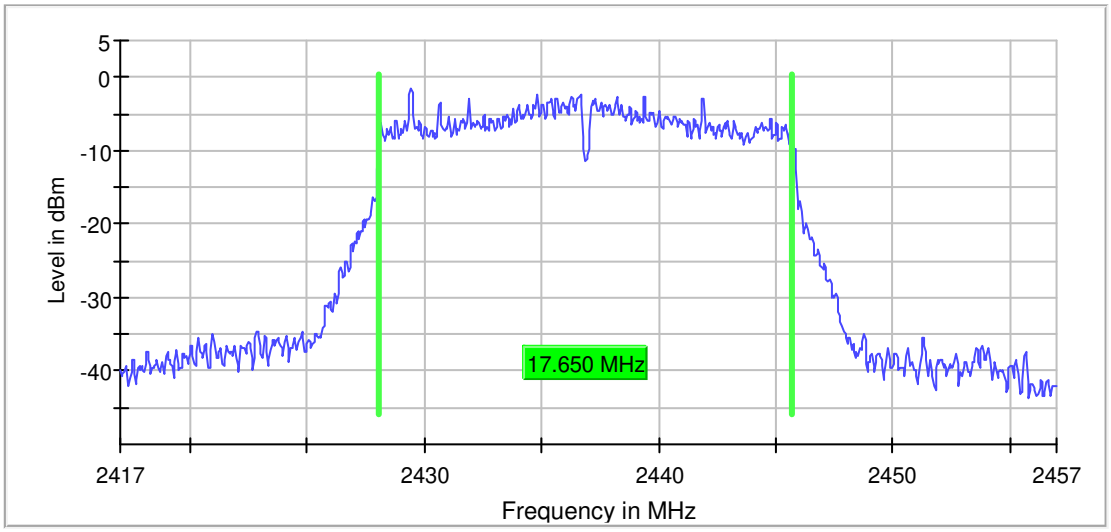
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2437.000000	17.650000	0.500000	---	2428.075000	2445.725000

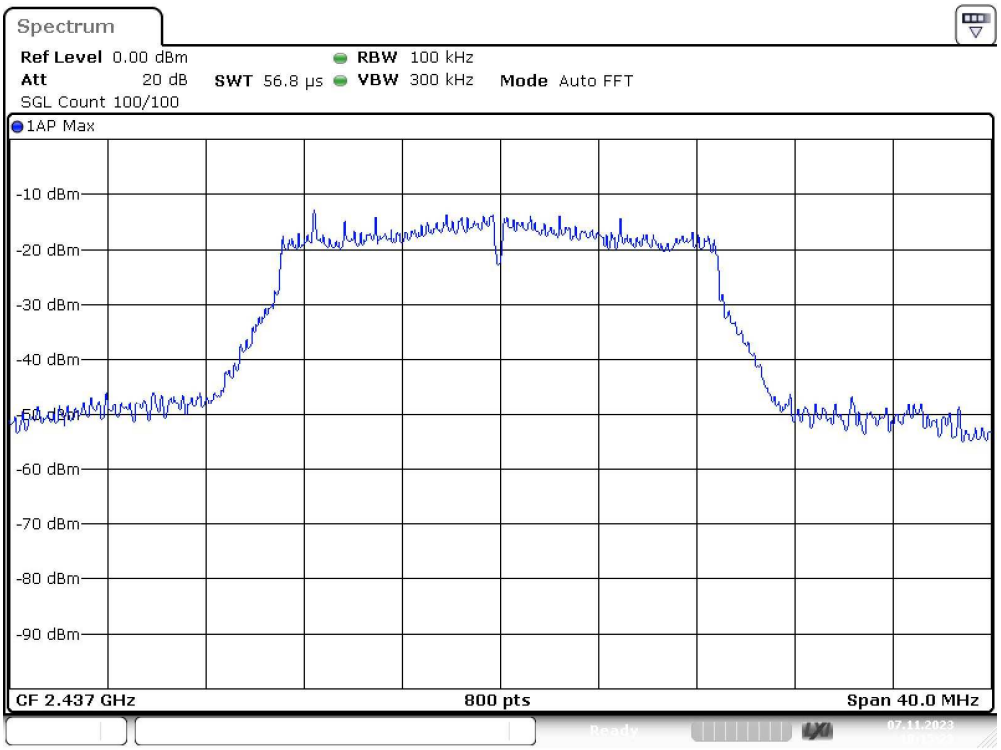
(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2437.000000	-1.7	PASS

6 dB Bandwidth



Bandwidth



Date: 7.NOV.2023 10:15:24

Measurement

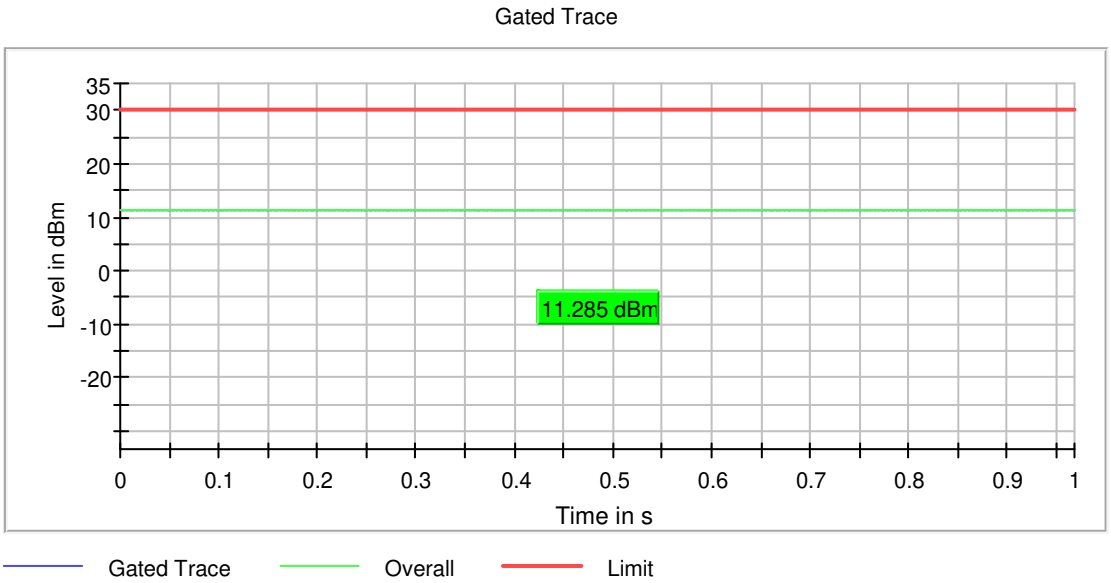
Setting	Instrument Value	Target Value
Start Frequency	2.41700 GHz	2.41700 GHz
Stop Frequency	2.45700 GHz	2.45700 GHz
Span	40.000 MHz	40.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	800	~ 800
Sweeptime	56.836 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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

RF output power (2437 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.247(b), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2437.000000	11.3	30.0	11.3	96.964	PASS



OSP PowerMeter settings

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

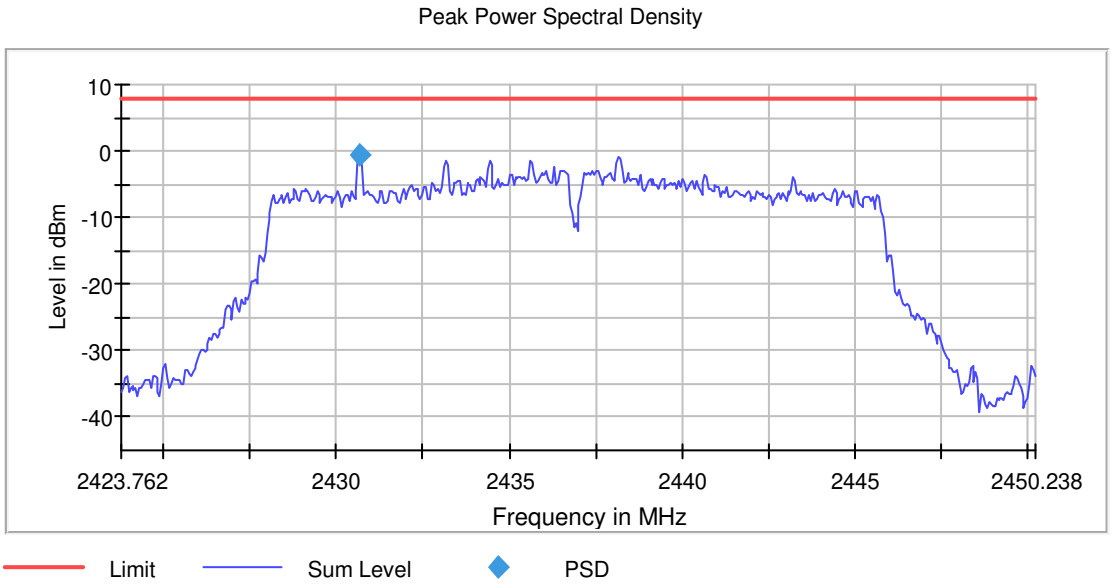
Peak Power Spectral Density (2437 MHz; 20.000 dBm; 20 MHz)

Customized settings.

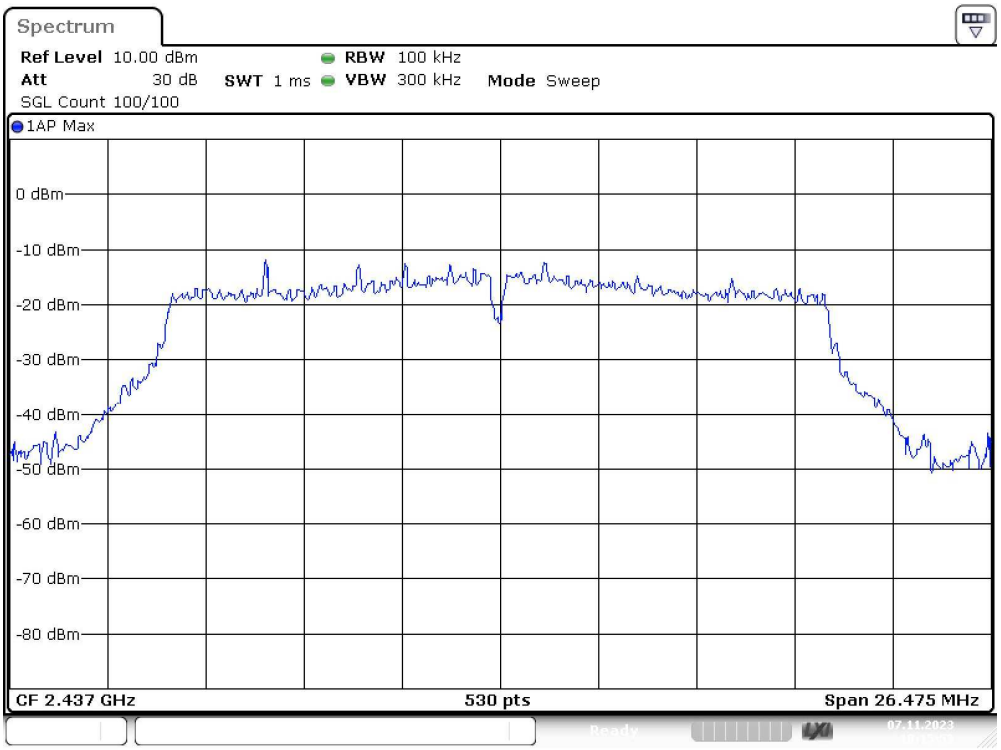
Test according to FCC title 47 part 15 §15.247(a),(e), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2437.000000	2430.680967	-0.634	8.0	PASS



PSD Connector 1



Date: 7.NOV.2023 10:15:53

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.42376 GHz	2.42376 GHz
Stop Frequency	2.45024 GHz	2.45024 GHz
Span	26.475 MHz	26.475 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	530	~ 530
Sweeptime	1.010 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 C63.10-2013

Result

DUT Frequency (MHz)	Result
2437.000000	PASS

Final measurements

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

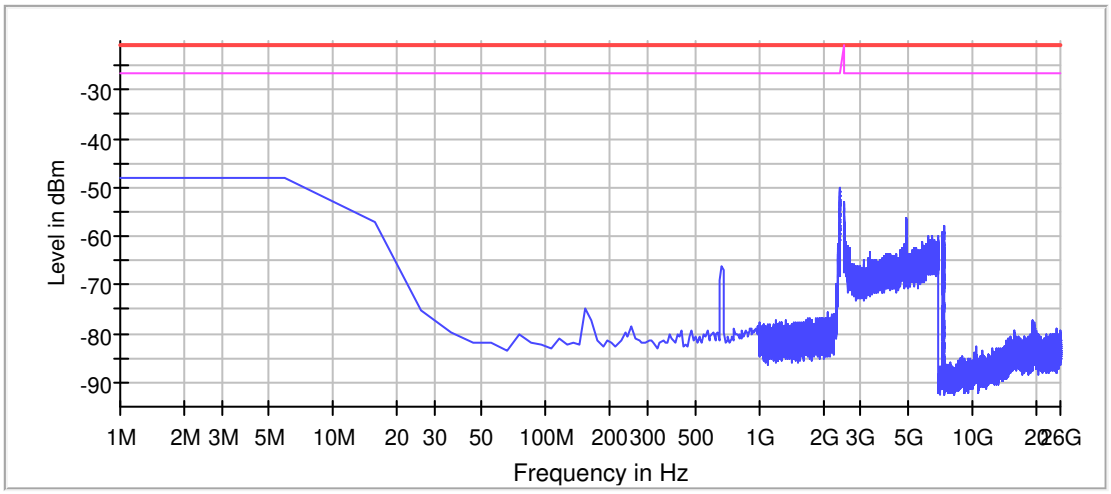
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
5.945545	-48.0	27.3	-20.6
1.000000	-48.0	27.4	-20.6
2399.775000	-49.9	29.3	-20.6
2399.425000	-49.9	29.3	-20.6
2399.475000	-50.5	29.9	-20.6
2398.225000	-50.6	29.9	-20.6
2398.675000	-50.9	30.2	-20.6
2398.725000	-51.0	30.3	-20.6
2399.975000	-51.0	30.4	-20.6
2398.625000	-51.1	30.5	-20.6
2399.825000	-51.1	30.5	-20.6
2399.375000	-51.2	30.5	-20.6
2398.275000	-51.4	30.8	-20.6
2399.925000	-51.5	30.9	-20.6
2398.825000	-51.5	30.9	-20.6

Measurement Settings

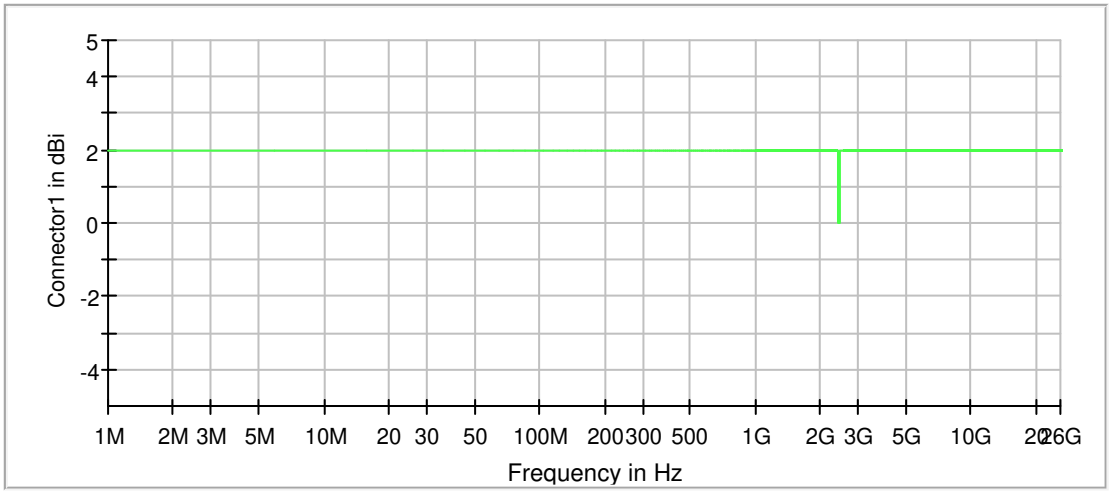
Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
1.000000	1000.000000	1	1
1000.000000	2400.000000	2	2
2483.500000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2

Spurious

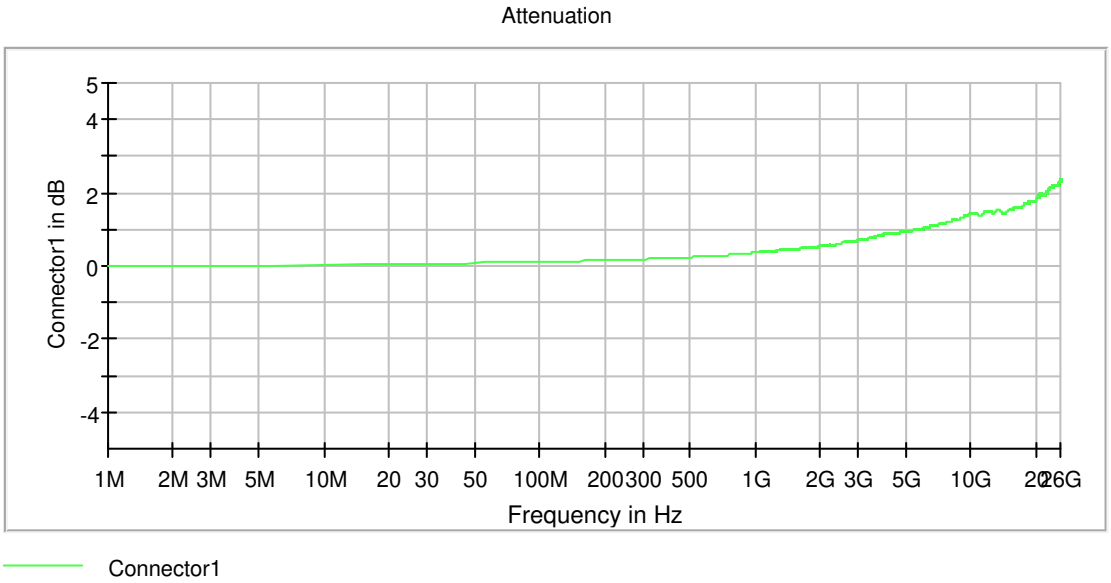


Limit Sum Level Threshold Critical Final Critical

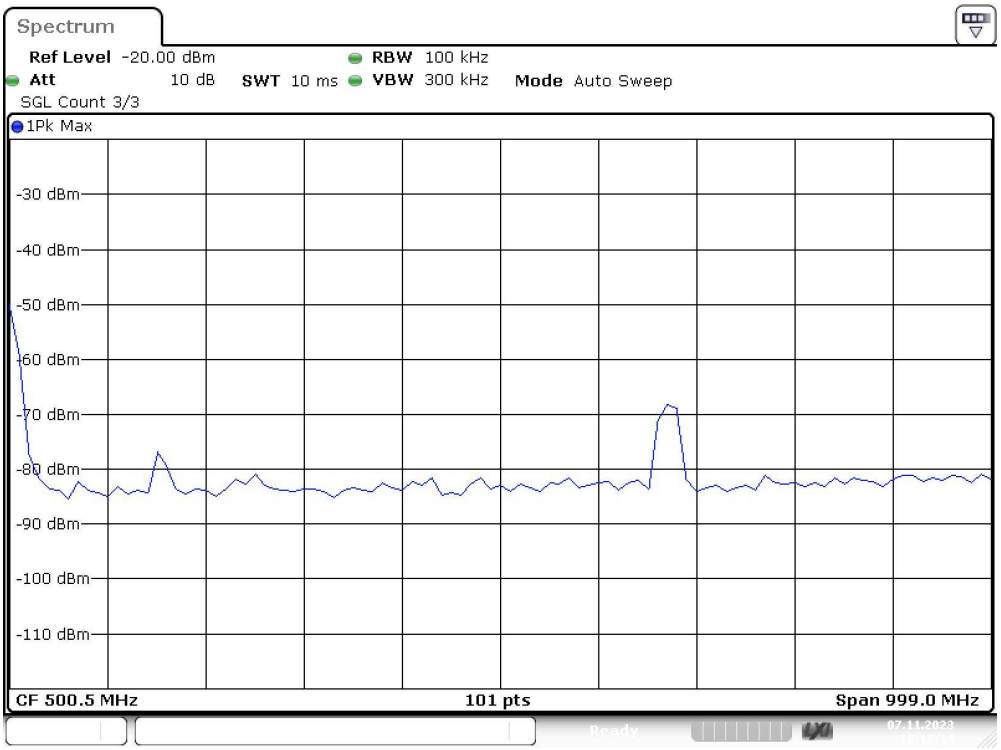
Gain



Connector1

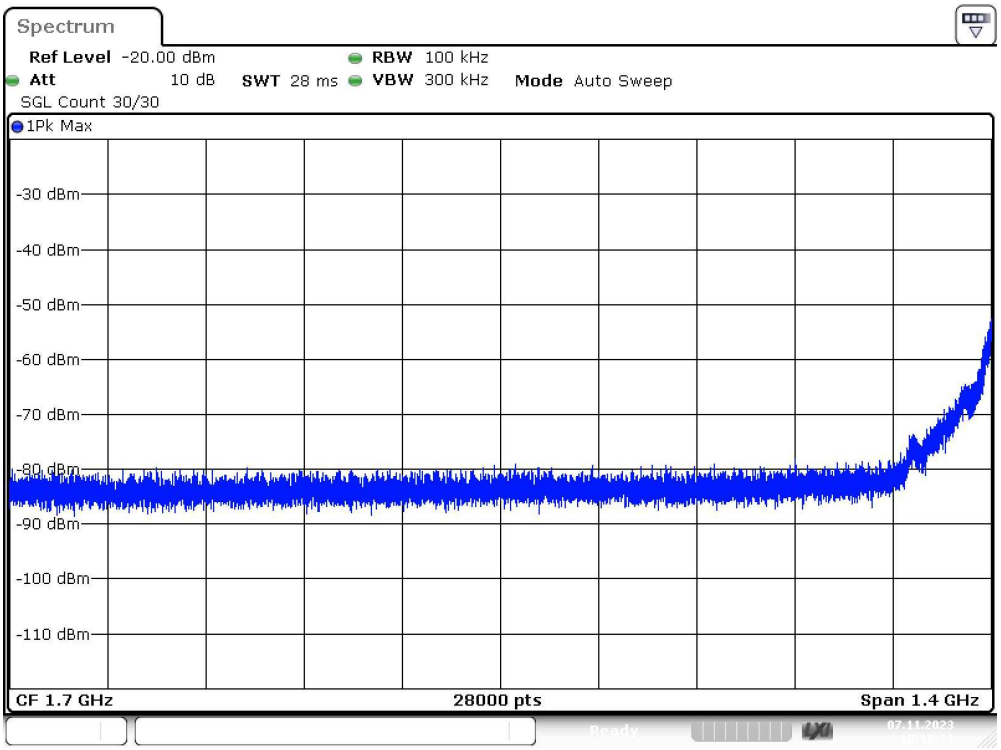


Spurious Connector 1_0



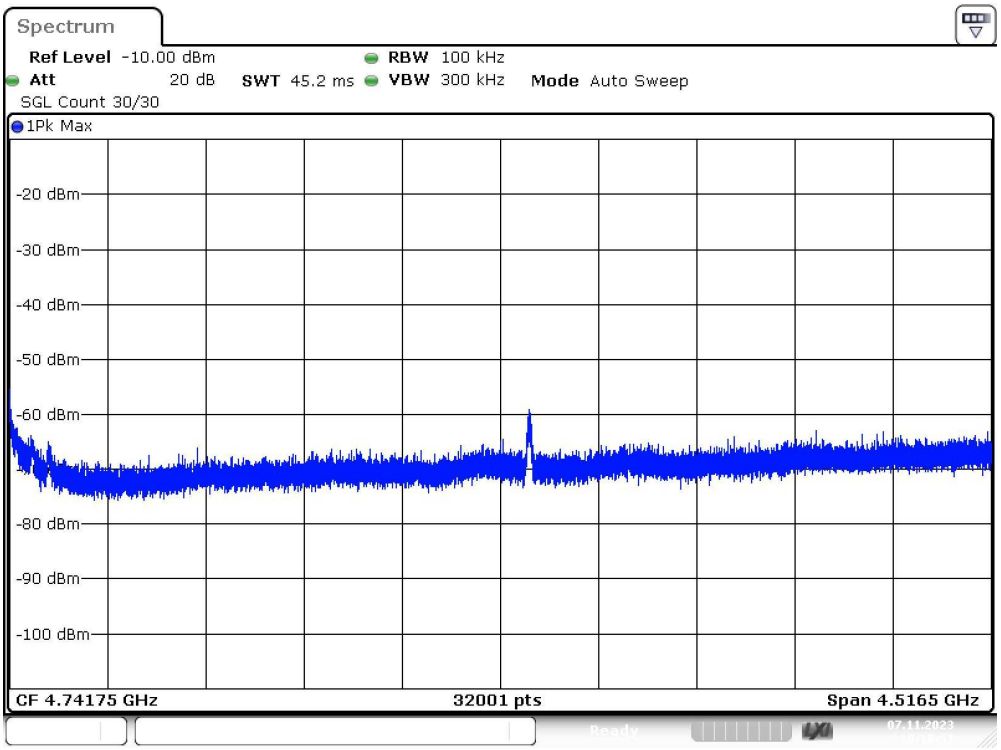
Date: 7.NOV.2023 10:18:14

Spurious Connector 1_1



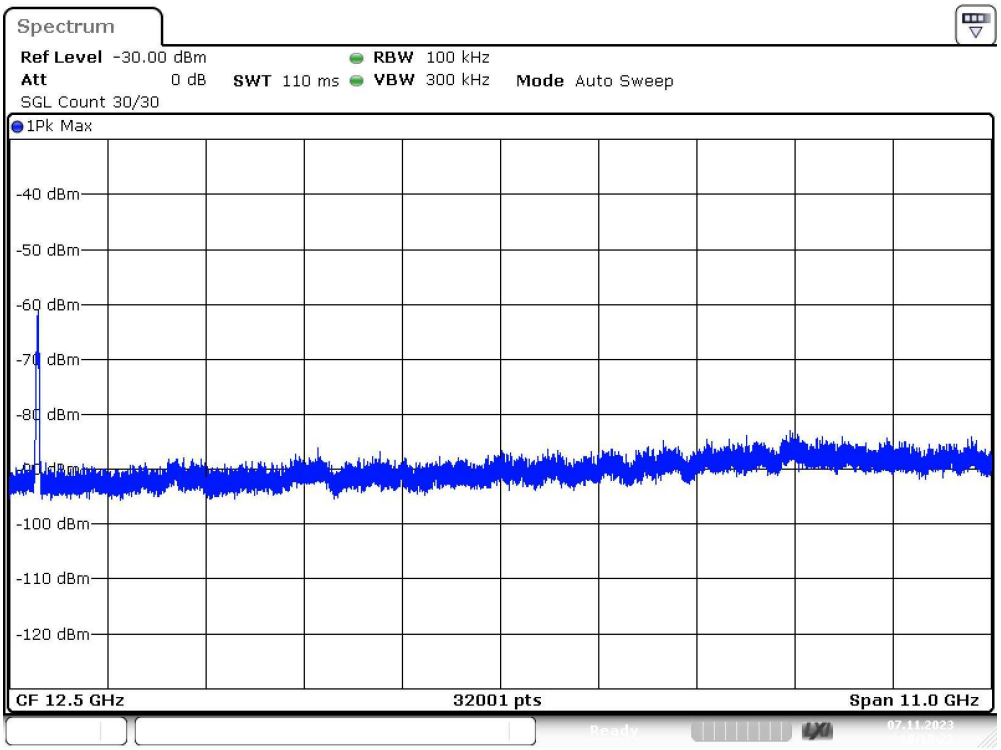
Date: 7.NOV.2023 10:18:31

Spurious Connector 1_2



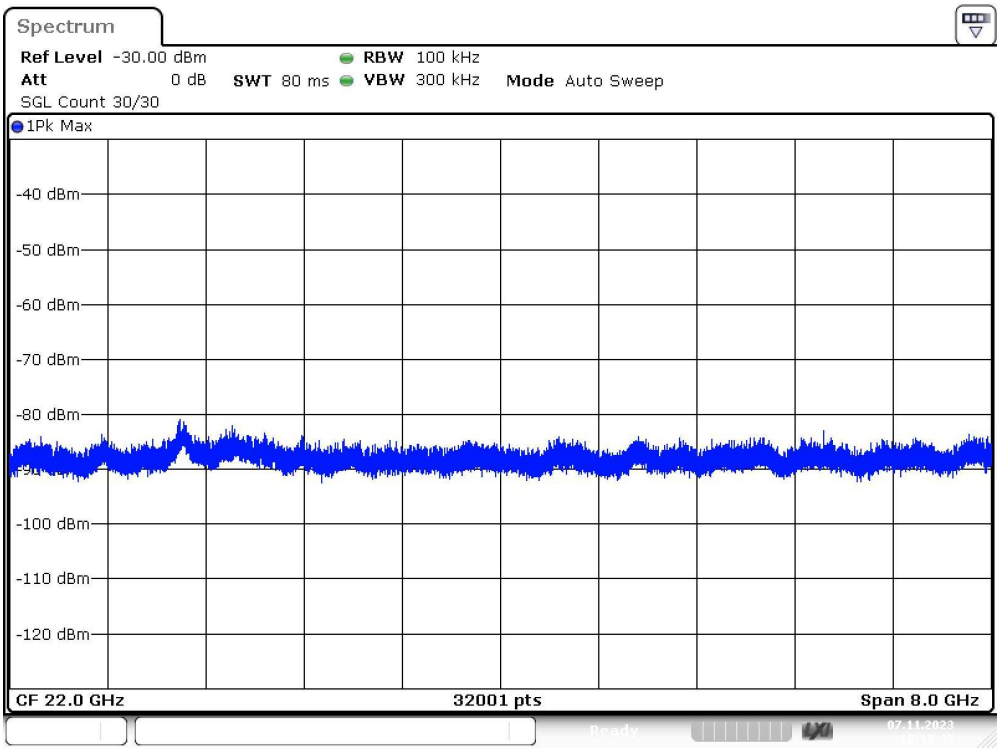
Date: 7.NOV.2023 10:18:52

Spurious Connector 1_3



Date: 7.NOV.2023 10:19:23

Spurious Connector 1_4



Date: 7.NOV.2023 10:19:45

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 101
Sweeptime	9.990 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
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	-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	**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**

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 C63.10-2013

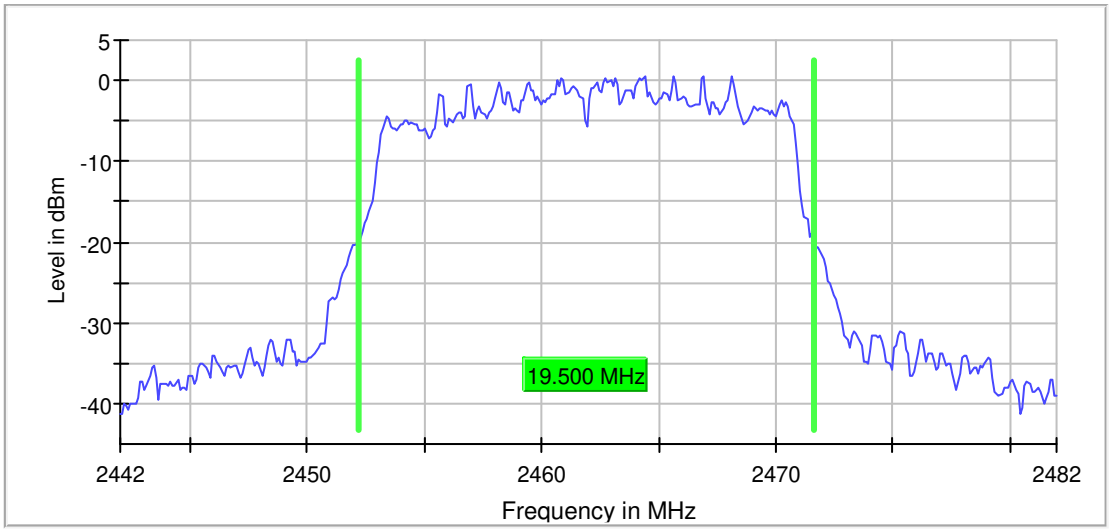
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2462.000000	19.500000	---	---	2452.150000	2471.650000

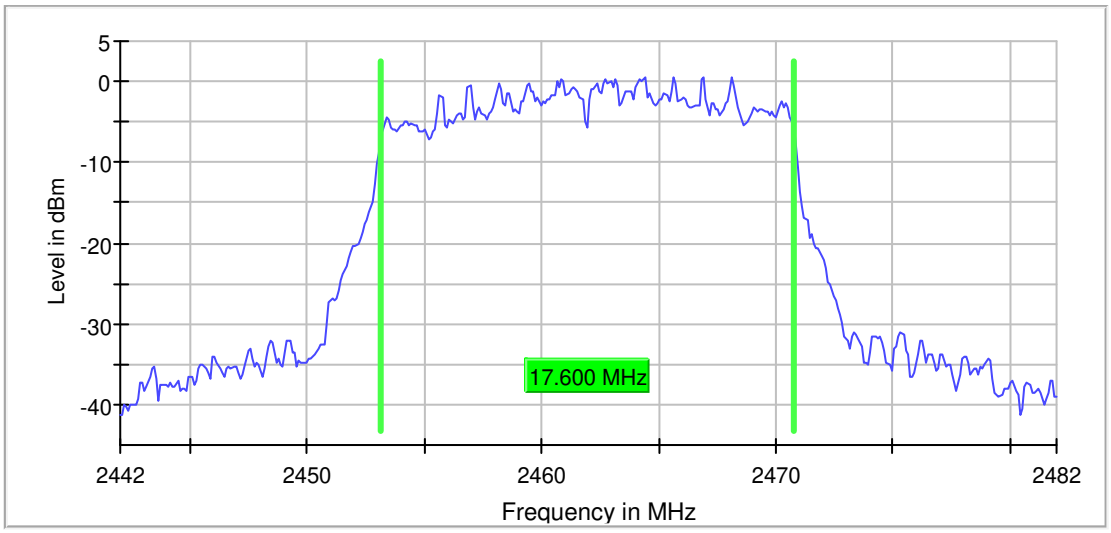
(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2462.000000	0.6	PASS

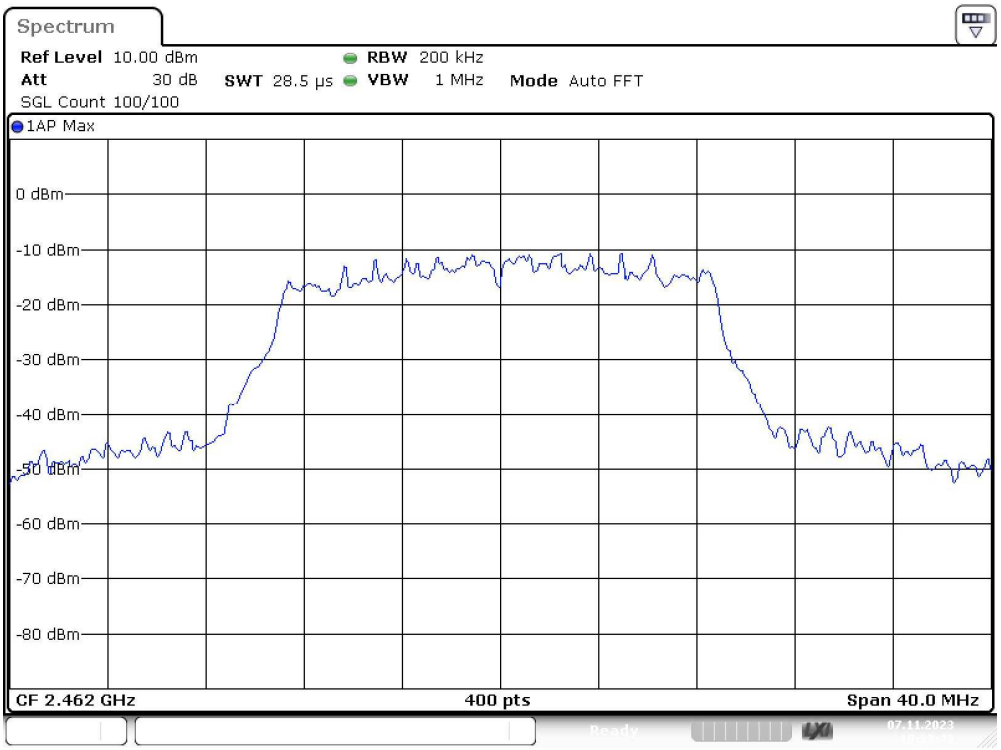
20 dB Bandwidth



99 % Bandwidth



Bandwidth



Date: 7.NOV.2023 10:33:43

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	200.000 kHz	>= 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	400	~ 400
Sweeptime	28.477 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 C63.10-2013

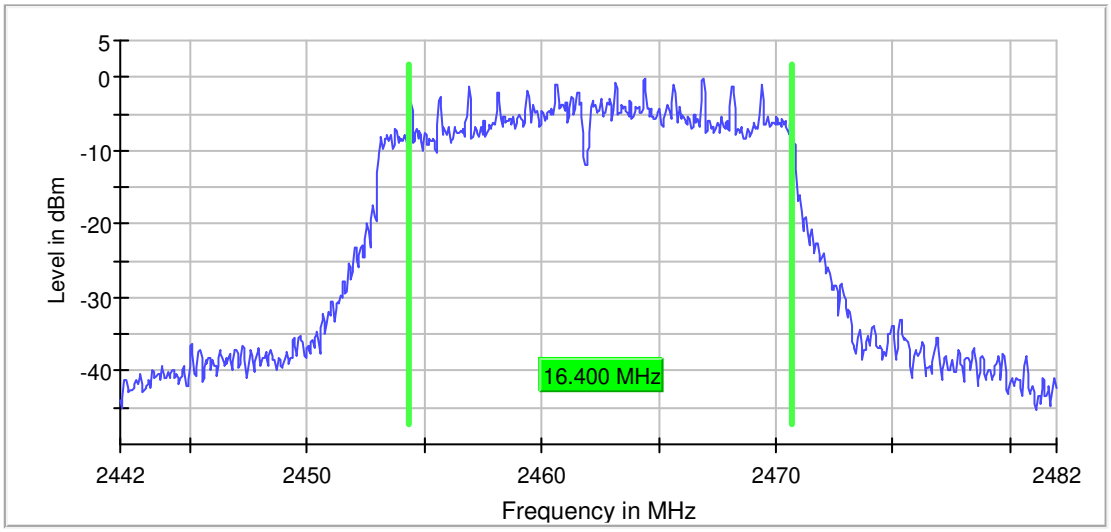
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2462.000000	16.400000	0.500000	---	2454.325000	2470.725000

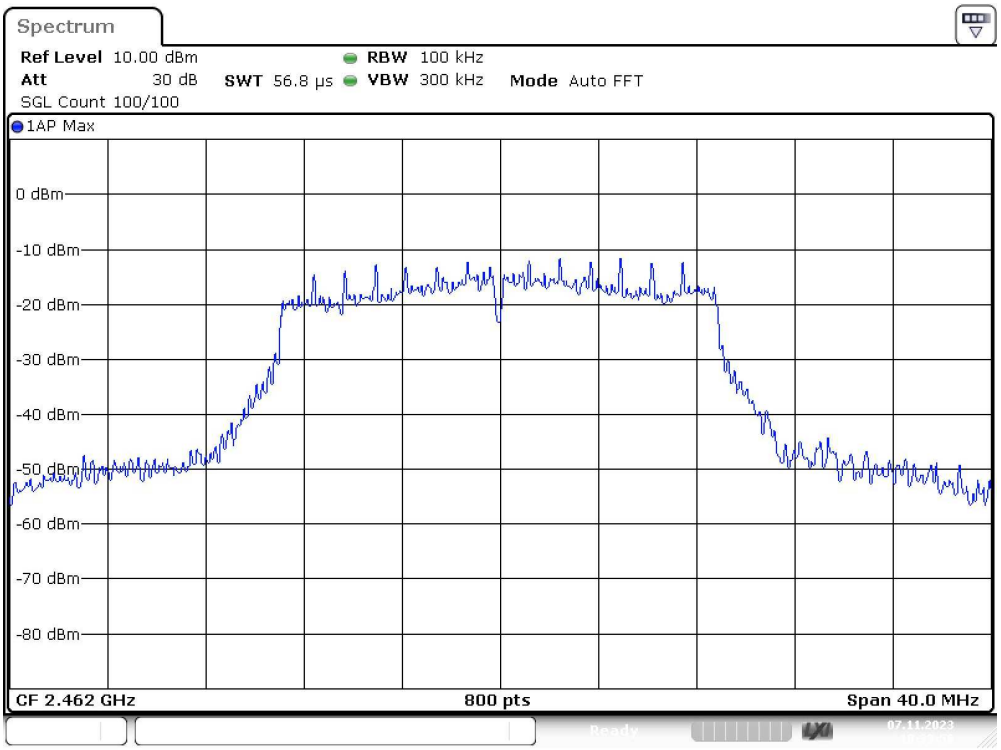
(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2462.000000	-0.3	PASS

6 dB Bandwidth



Bandwidth



Date: 7.NOV.2023 10:33:58

Measurement

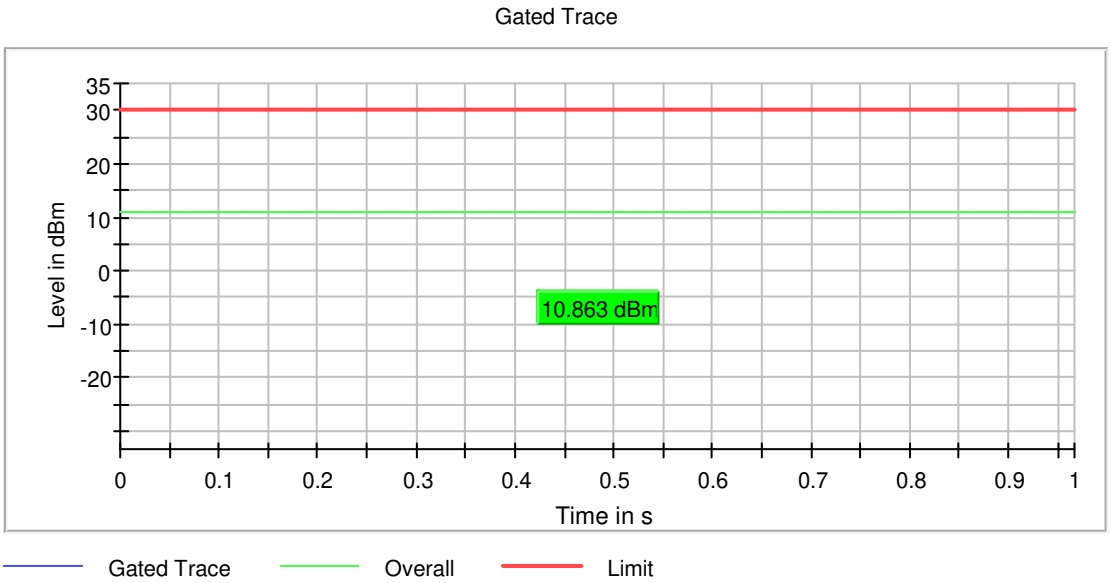
Setting	Instrument Value	Target Value
Start Frequency	2.44200 GHz	2.44200 GHz
Stop Frequency	2.48200 GHz	2.48200 GHz
Span	40.000 MHz	40.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	800	~ 800
Sweeptime	56.836 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	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

RF output power (2462 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.247(b), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2462.000000	10.9	30.0	10.9	96.965	PASS



OSP PowerMeter settings

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

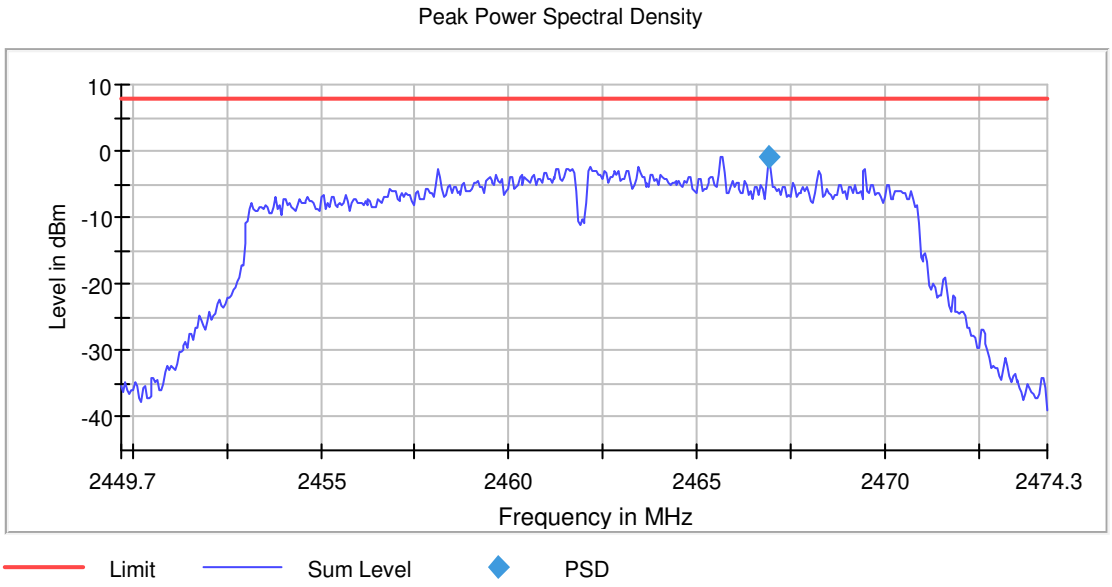
Peak Power Spectral Density (2462 MHz; 20.000 dBm; 20 MHz)

Customized settings.

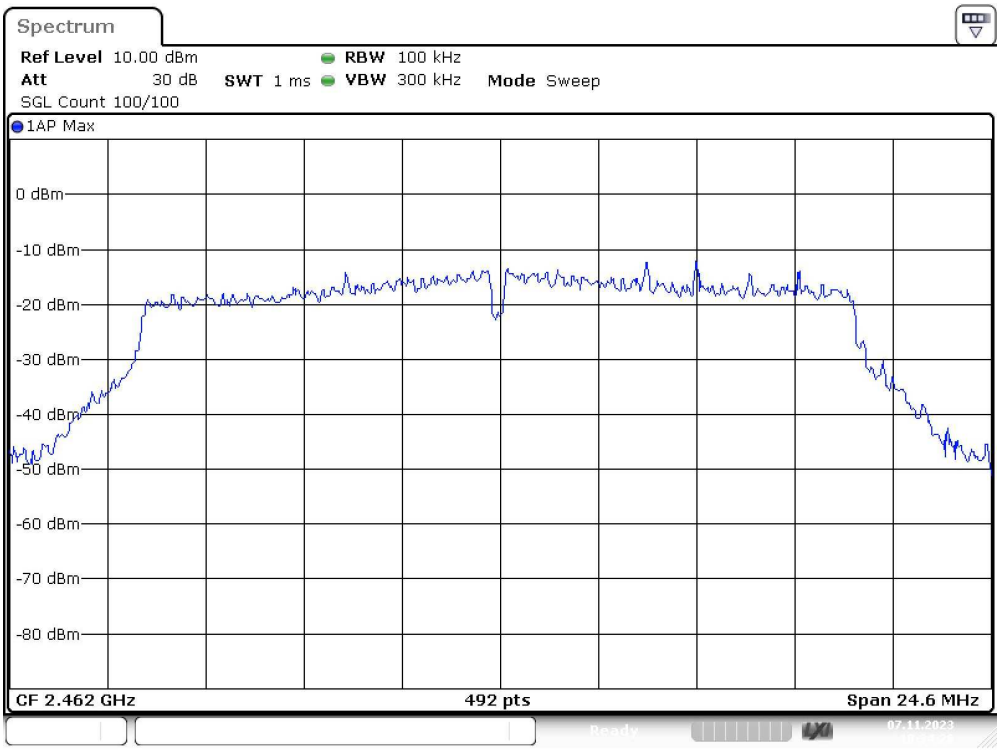
Test according to FCC title 47 part 15 §15.247(a),(e), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2462.000000	2466.875000	-0.853	8.0	PASS



PSD Connector 1



Date: 7.NOV.2023 10:34:28

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44970 GHz	2.44970 GHz
Stop Frequency	2.47430 GHz	2.47430 GHz
Span	24.600 MHz	24.600 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	492	~ 492
Sweeptime	1.030 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 C63.10-2013

Result

DUT Frequency (MHz)	Result
2462.000000	PASS

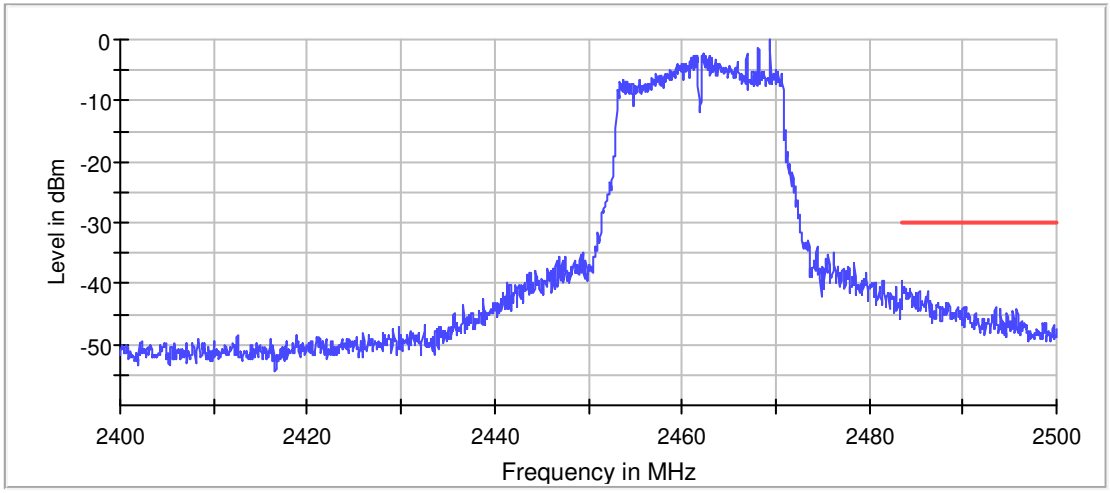
Inband Peak

Frequency (MHz)	Level (dBm)
2469.425000	-0.1

Measurements

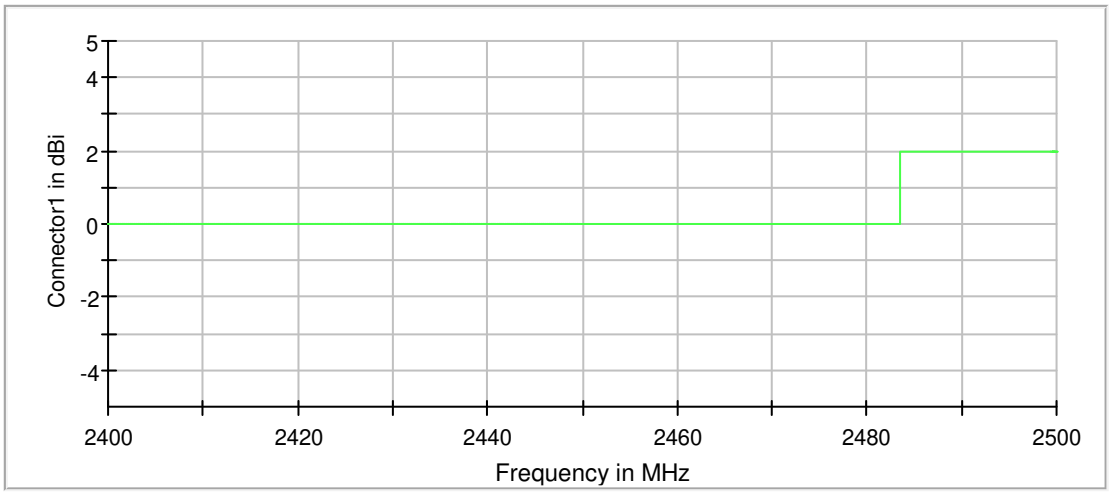
Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2483.525000	-39.6	9.6	-30.1	PASS
2483.575000	-40.4	10.3	-30.1	PASS
2483.725000	-40.7	10.6	-30.1	PASS
2483.675000	-40.7	10.7	-30.1	PASS
2483.875000	-41.0	10.9	-30.1	PASS
2483.825000	-41.0	10.9	-30.1	PASS
2484.425000	-41.0	11.0	-30.1	PASS
2484.375000	-41.0	11.0	-30.1	PASS
2486.225000	-41.2	11.1	-30.1	PASS
2486.275000	-41.3	11.2	-30.1	PASS
2484.475000	-41.3	11.2	-30.1	PASS
2483.925000	-41.3	11.2	-30.1	PASS
2485.375000	-41.3	11.3	-30.1	PASS
2483.775000	-41.4	11.4	-30.1	PASS
2485.325000	-41.5	11.4	-30.1	PASS

Band Edge



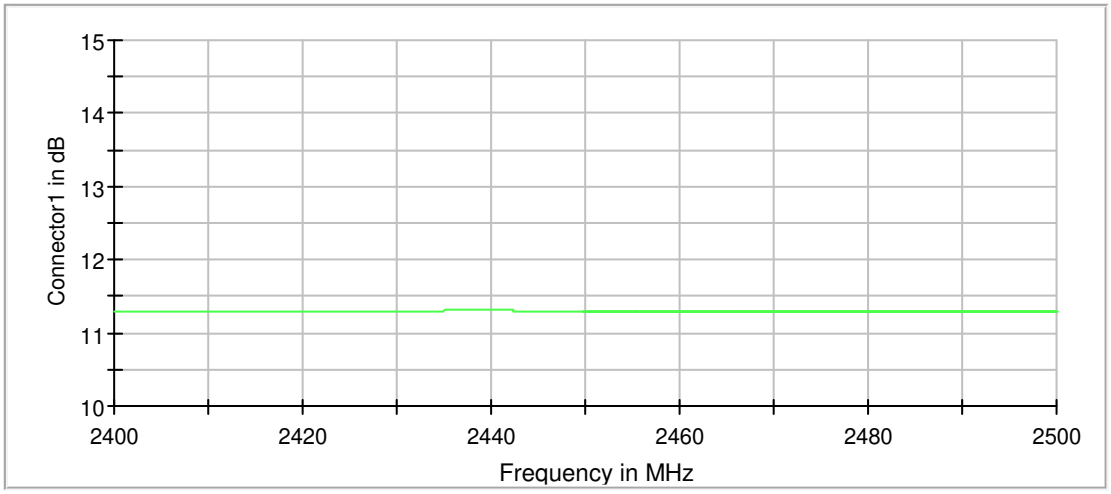
Limit Sum Level Fail

Gain



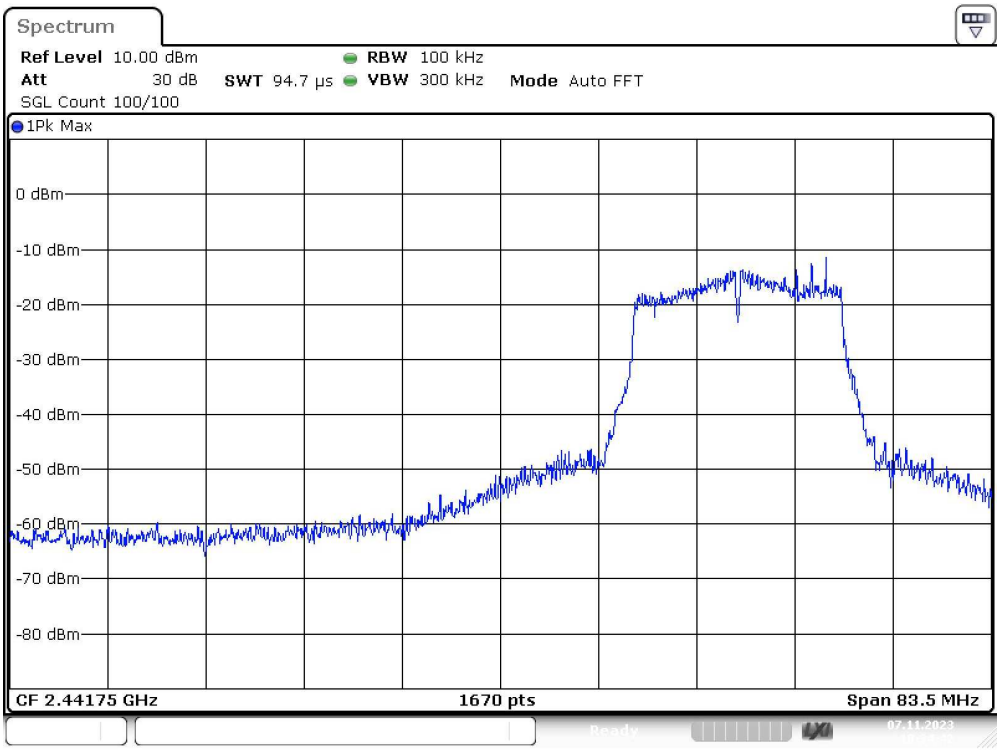
Connector1

Attenuation



Connector1

Band Edge Connector 1_0



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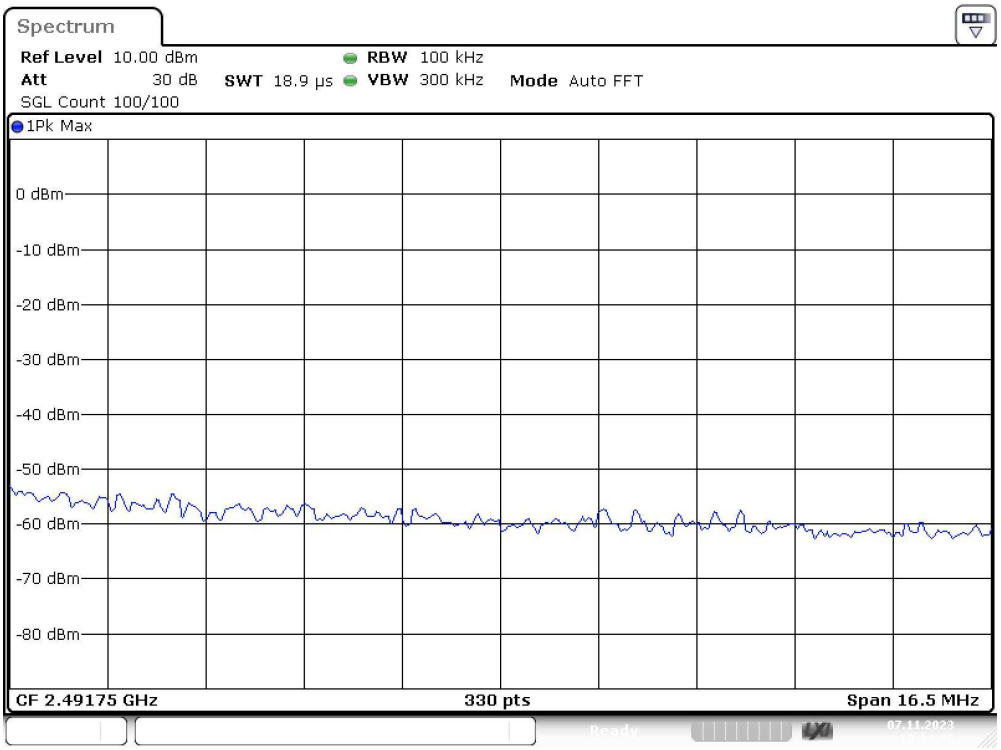
Band Edge Connector 1_1



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Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.40000 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	94.727 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

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	**18.945 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 C63.10-2013

Result

DUT Frequency (MHz)	Result
2462.000000	PASS

Final measurements

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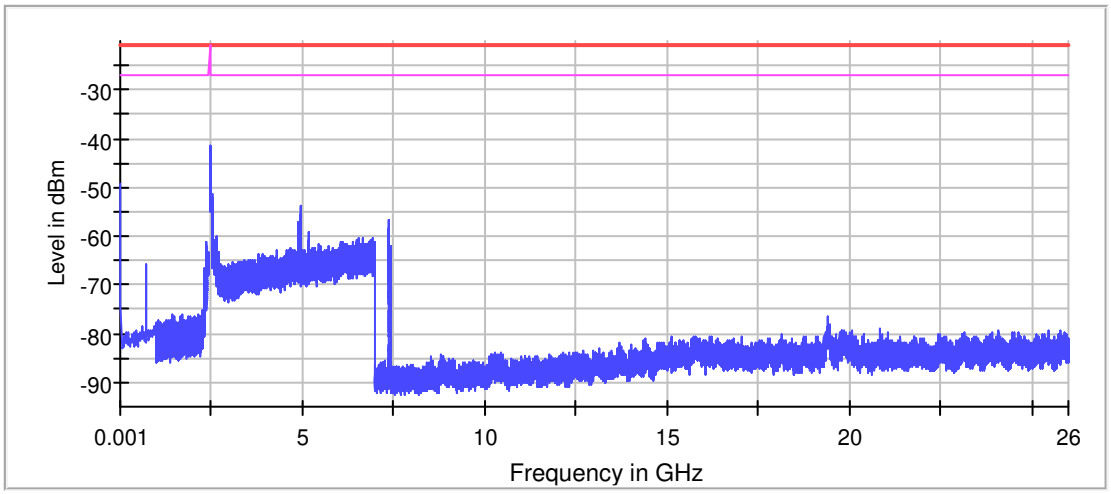
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2484.699658	-41.2	20.4	-20.9
2485.264203	-41.7	20.8	-20.9
2483.852841	-41.8	20.9	-20.9
2485.405339	-42.2	21.4	-20.9
2483.993977	-42.4	21.6	-20.9
2485.687611	-42.8	22.0	-20.9
2483.711704	-43.0	22.1	-20.9
2484.135113	-43.1	22.2	-20.9
2484.417385	-43.3	22.4	-20.9
2484.981930	-43.6	22.7	-20.9
2484.558522	-43.7	22.9	-20.9
2487.381246	-43.8	23.0	-20.9
2485.969884	-44.2	23.3	-20.9
2487.522382	-44.5	23.6	-20.9
2483.570568	-44.5	23.6	-20.9

Measurement Settings

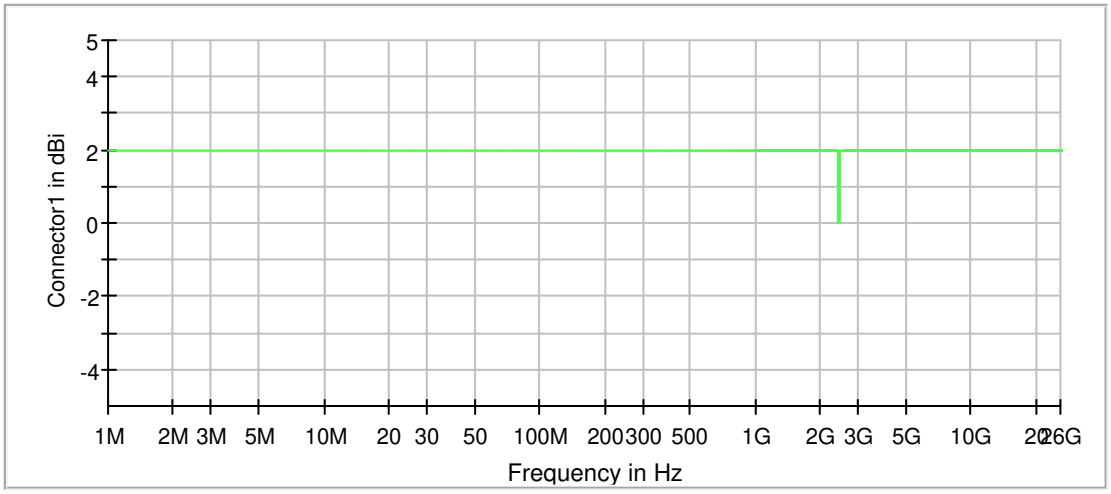
Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
1.000000	1000.000000	1	1
1000.000000	2400.000000	2	2
2483.500000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2

Spurious

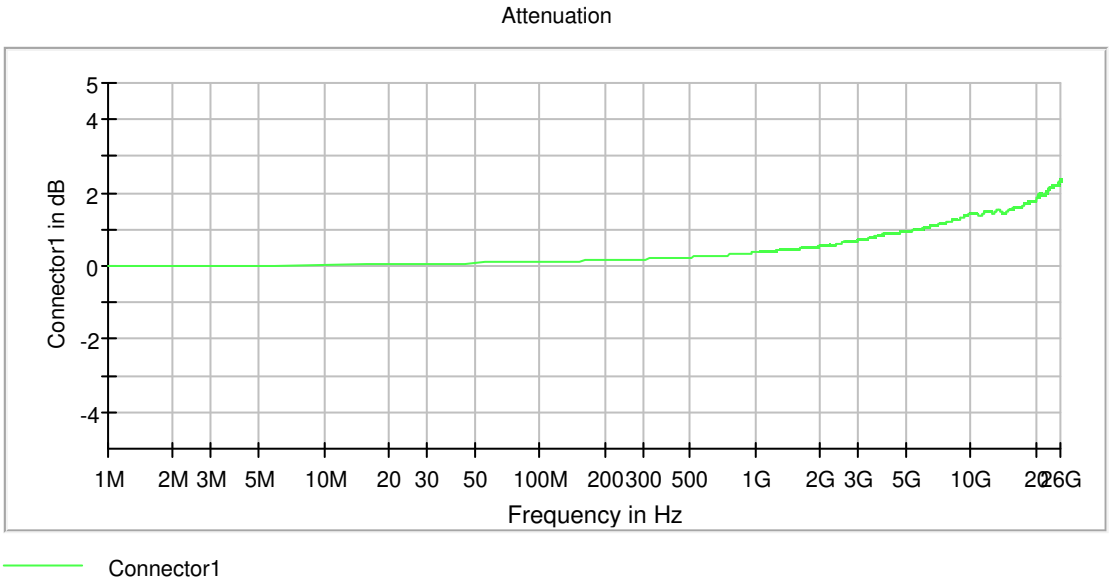


Limit Sum Level Threshold Critical Final Critical

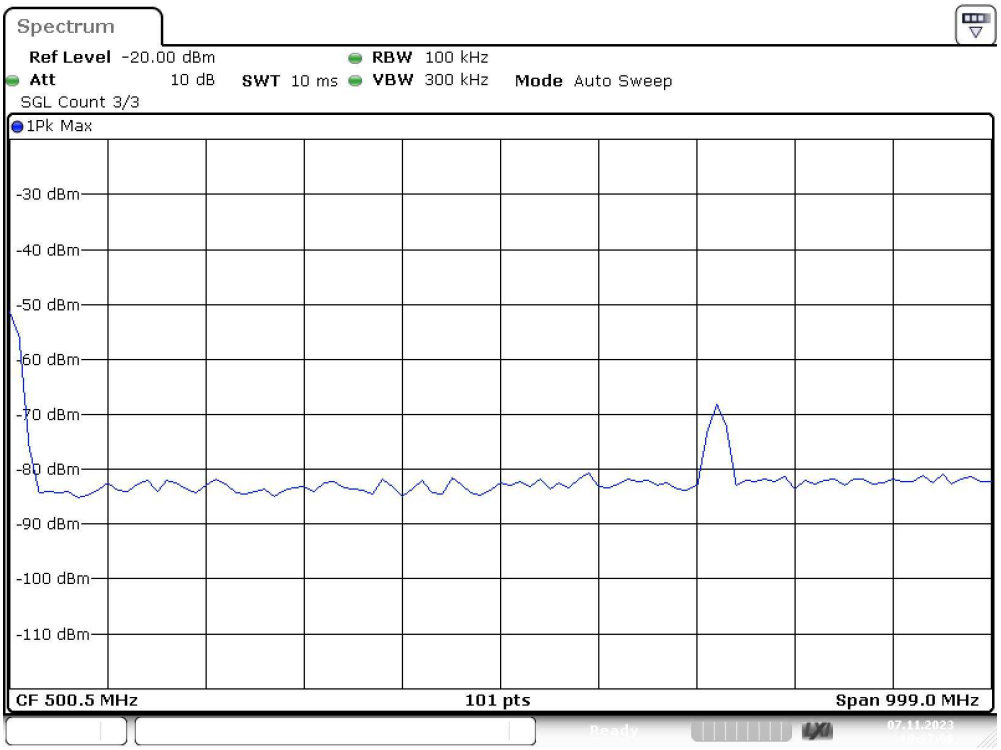
Gain



Connector1



Spurious Connector 1_0



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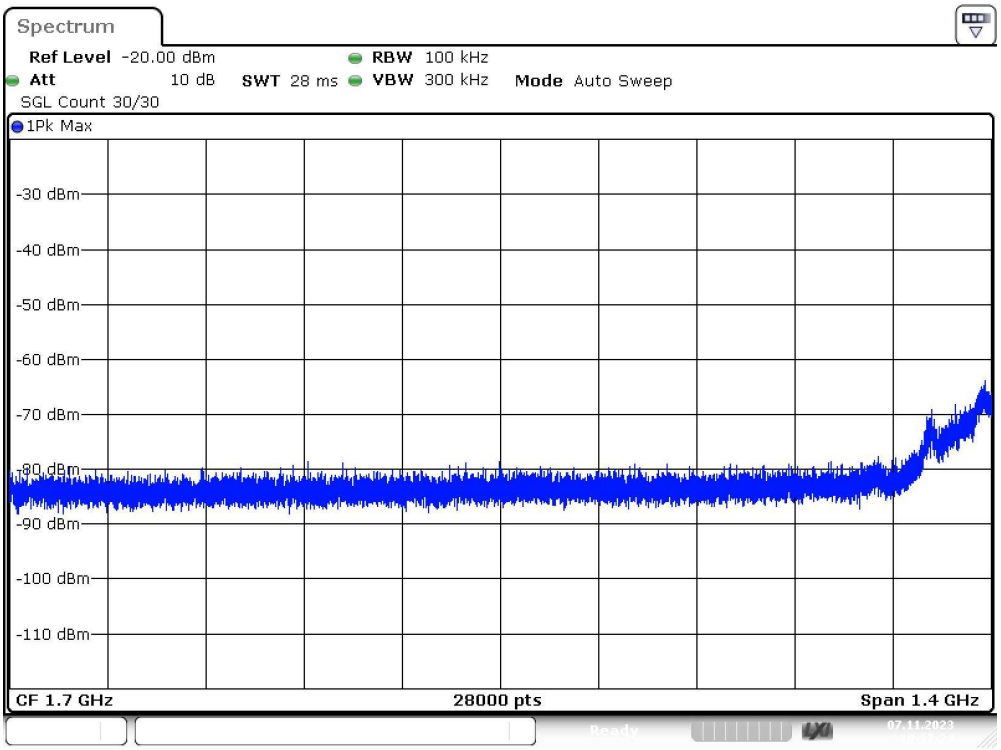
Spurious Connector 1_1



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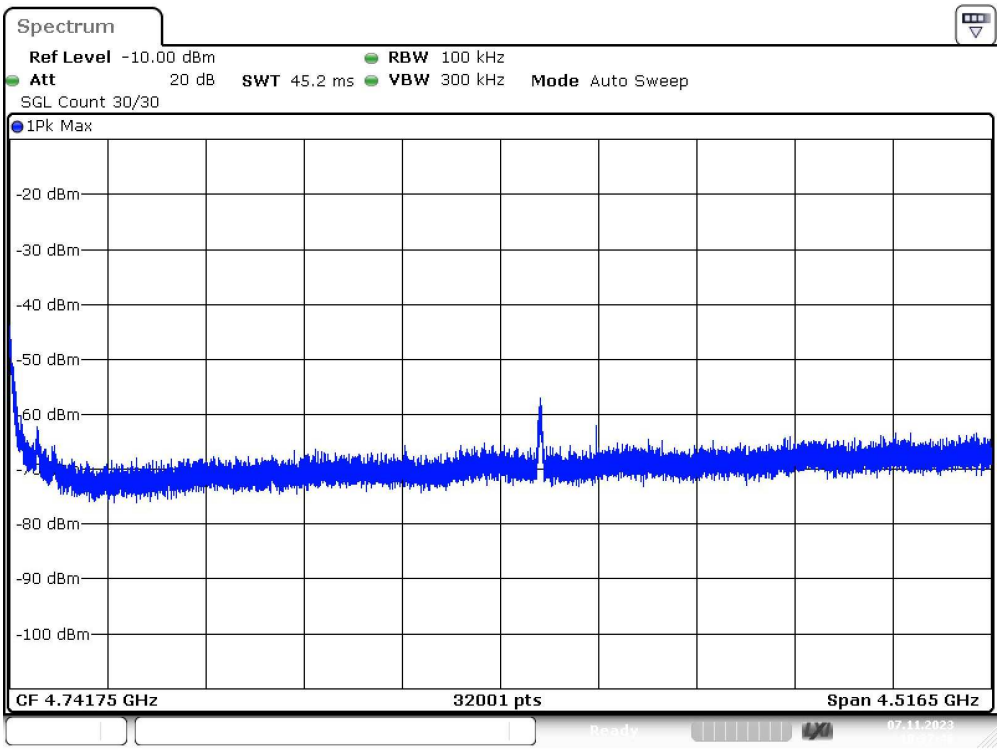
Spurious Connector 1_2



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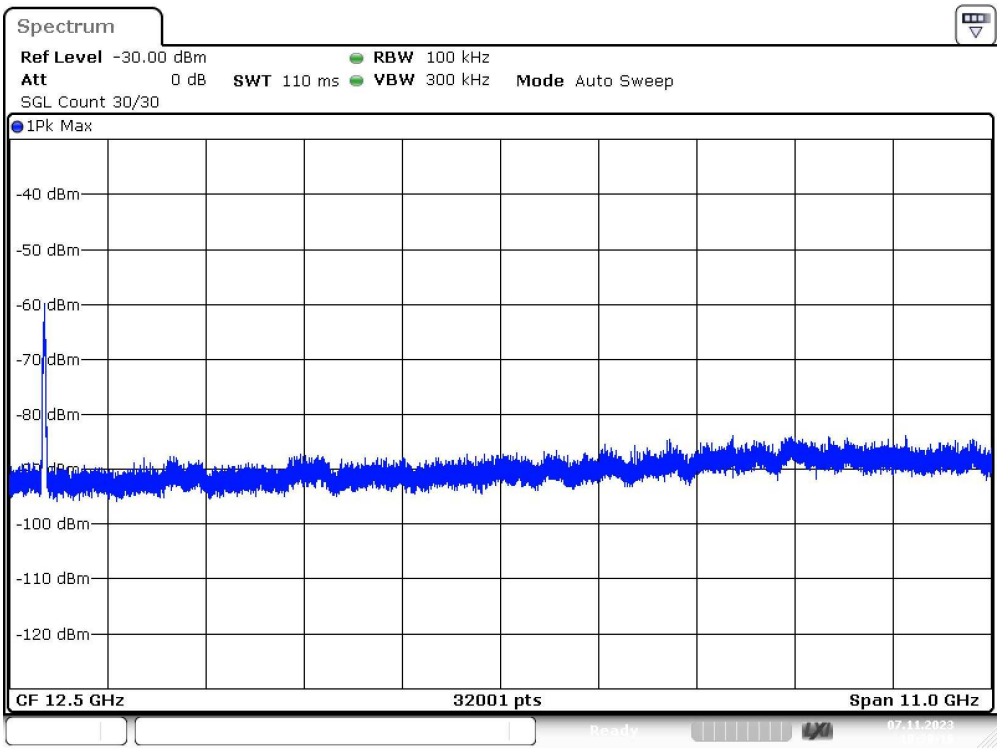
Spurious Connector 1_3



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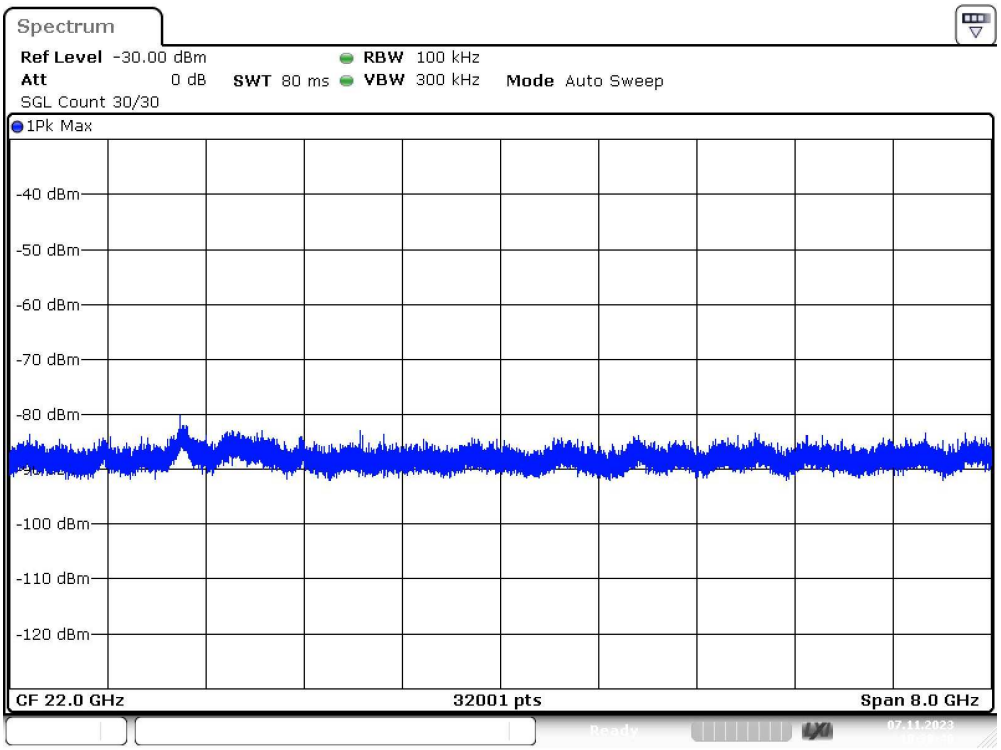
Spurious Connector 1_4



Date: 7.NOV.2023 10:38:40

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 101
Sweeptime	9.990 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
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	-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	**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**