

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;

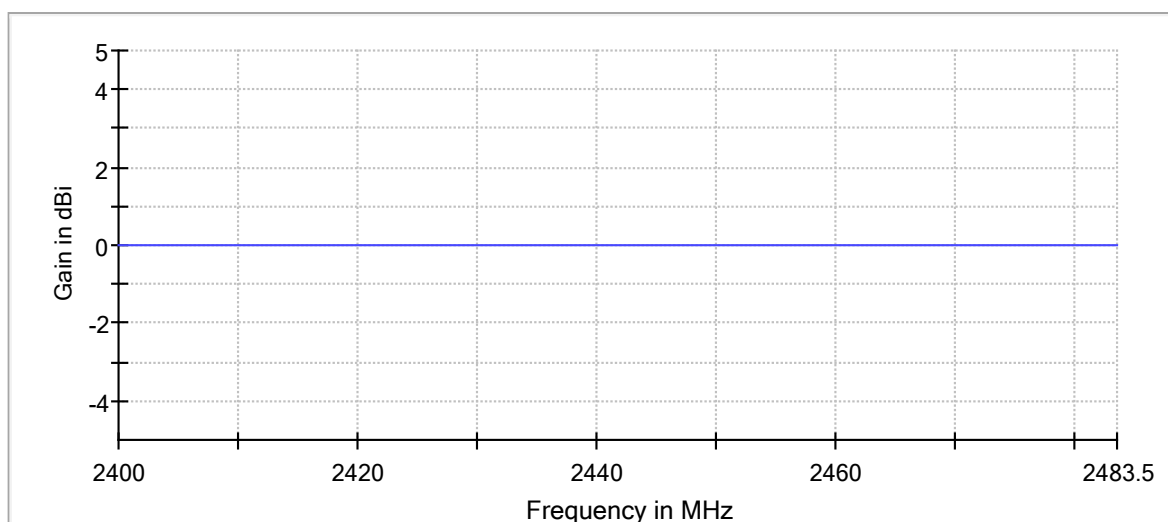
Gain Tables

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



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	2422.000	20.0	20.000000	PASS
Emission Bandwidth 20 dB	2422.000	20.0	20.000000	PASS
RF output power	2422.000	20.0	20.000000	PASS
Peak Power Spectral Density	2422.000	20.0	20.000000	PASS
Band Edge low	2422.000	20.0	20.000000	PASS
Tx Spurious Emission	2422.000	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	2452.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	2452.000	20.0	20.000000	PASS
RF output power	2452.000	20.0	20.000000	PASS
Peak Power Spectral Density	2452.000	20.0	20.000000	PASS
Band Edge high	2452.000	20.0	20.000000	PASS
Tx Spurious Emission	2452.000	20.0	20.000000	PASS

Minimum Emission Bandwidth 6 dB (2422 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

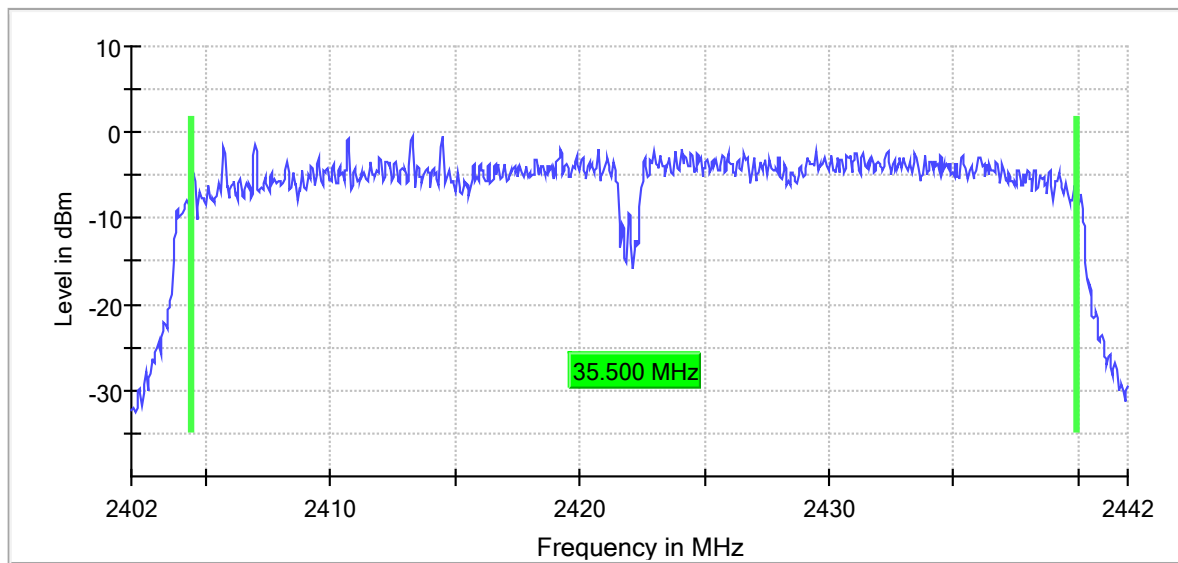
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2422.000000	35.500000	0.500000	---	2404.425000	2439.925000

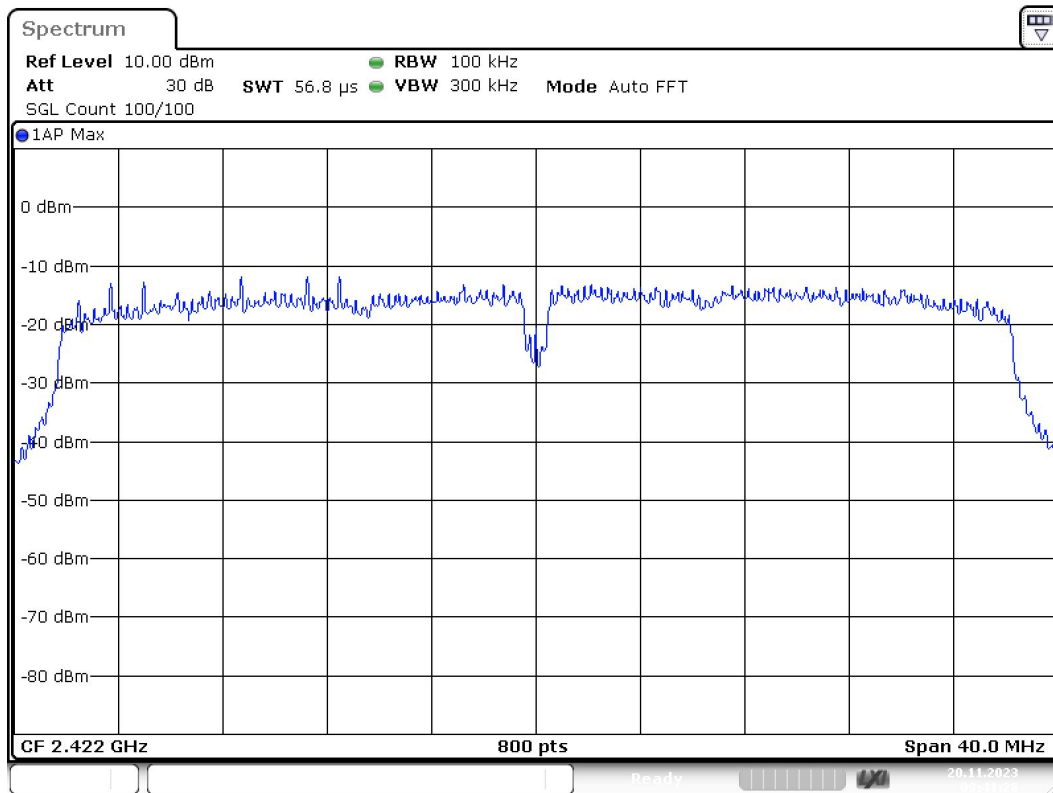
(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2422.000000	-0.5	PASS

6 dB Bandwidth



Bandwidth



Date: 20.NOV.2023 09:41:29

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40200 GHz	2.40200 GHz
Stop Frequency	2.44200 GHz	2.44200 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 (2422 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

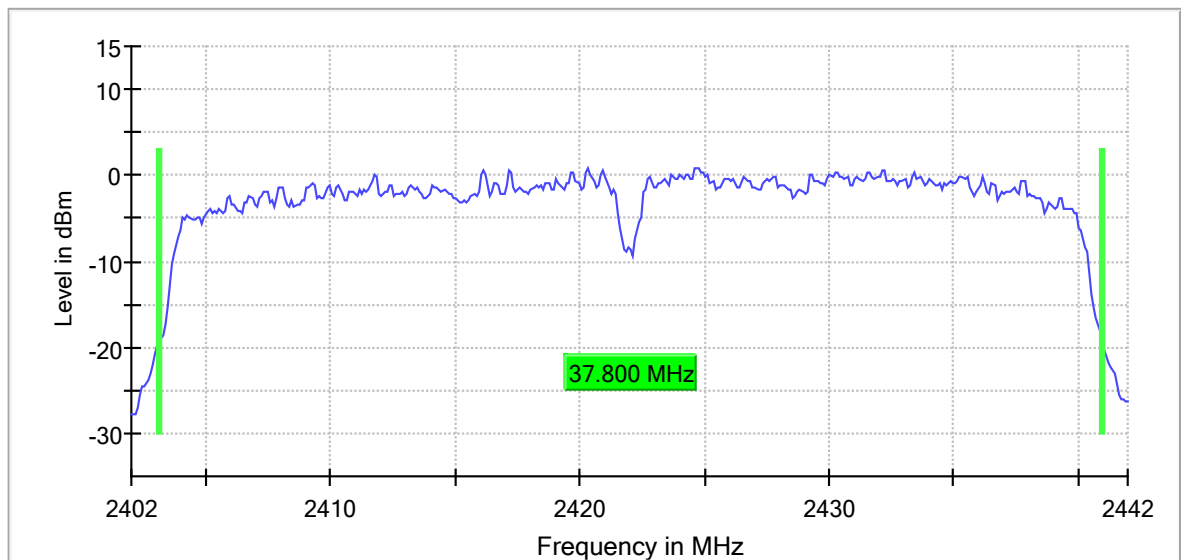
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2422.000000	37.800000	---	---	2403.150000	2440.950000

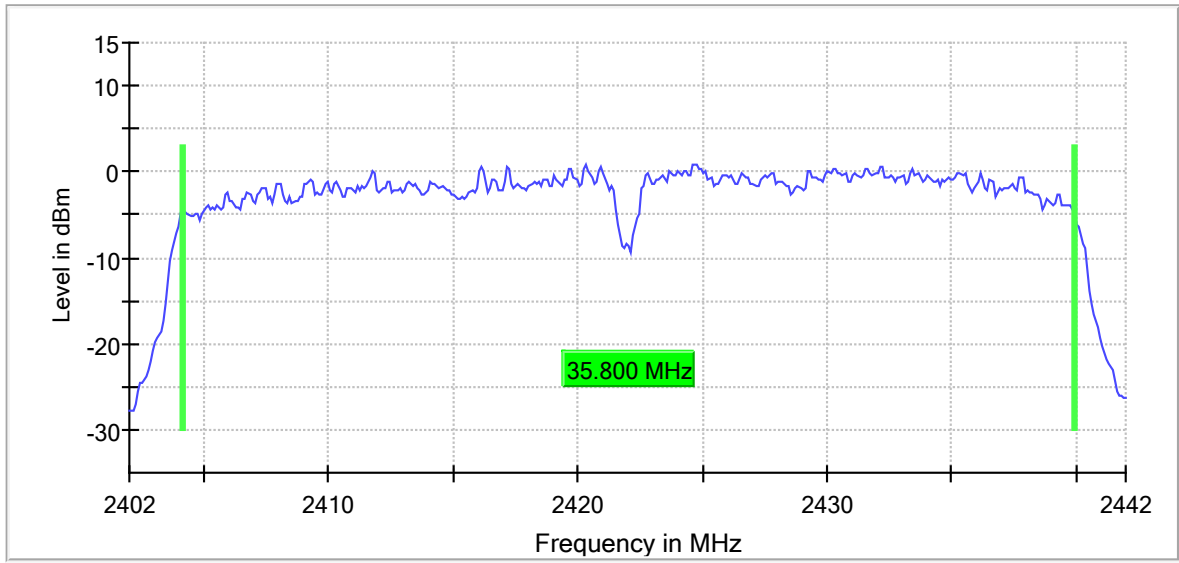
(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2422.000000	0.8	PASS

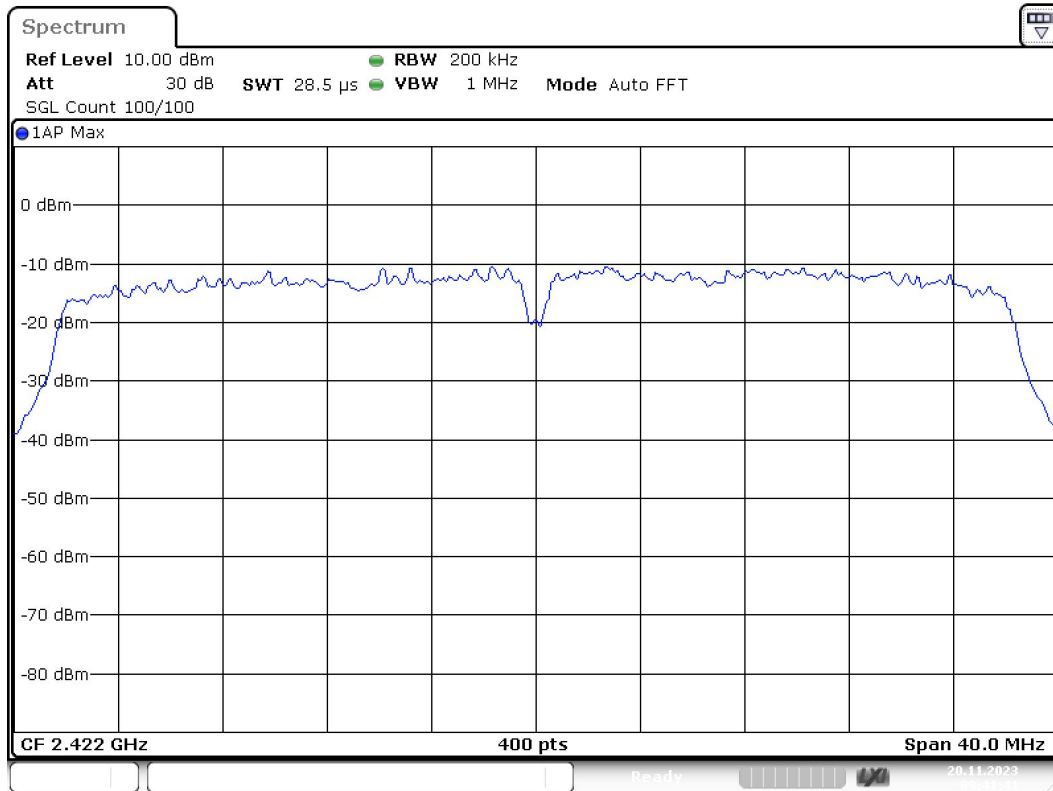
20 dB Bandwidth



99 % Bandwidth



Bandwidth



Date: 20.NOV.2023 09:41:41

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40200 GHz	2.40200 GHz
Stop Frequency	2.44200 GHz	2.44200 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

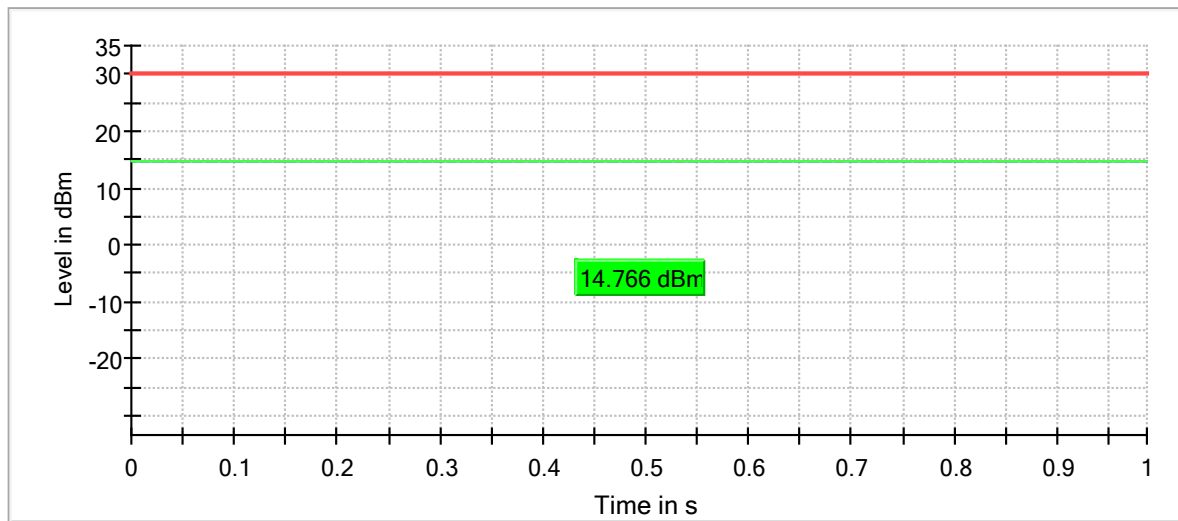
RF output power (2422 MHz; 20.000 dBm; 20 MHz)

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
2422.000000	14.8	30.0	14.8	99.020	PASS

Gated Trace



— Gated Trace — Overall — Limit

OSP PowerMeter settings

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

Peak Power Spectral Density (2422 MHz; 20.000 dBm; 20 MHz)

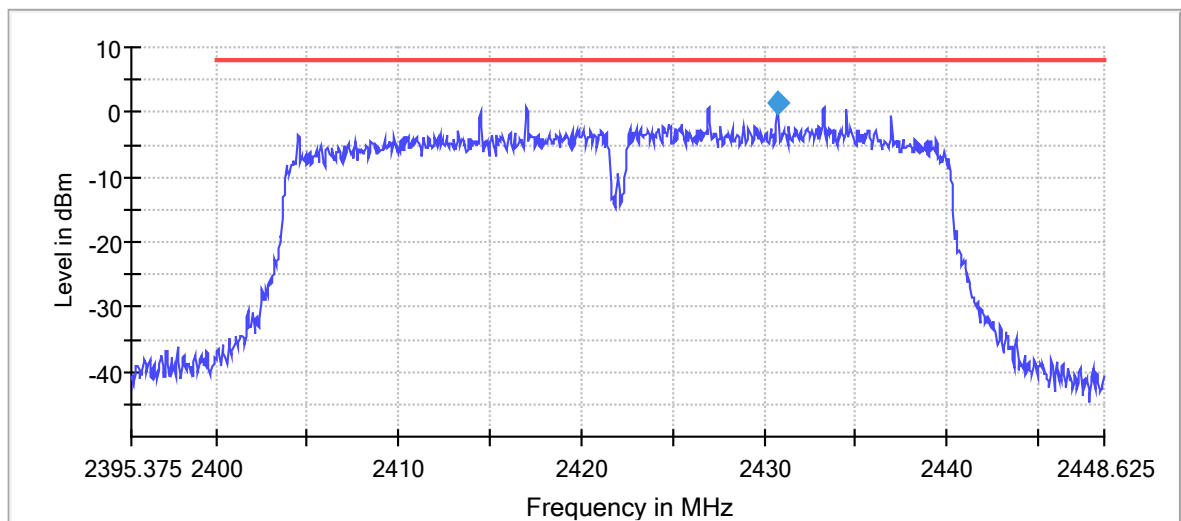
Customized settings.

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

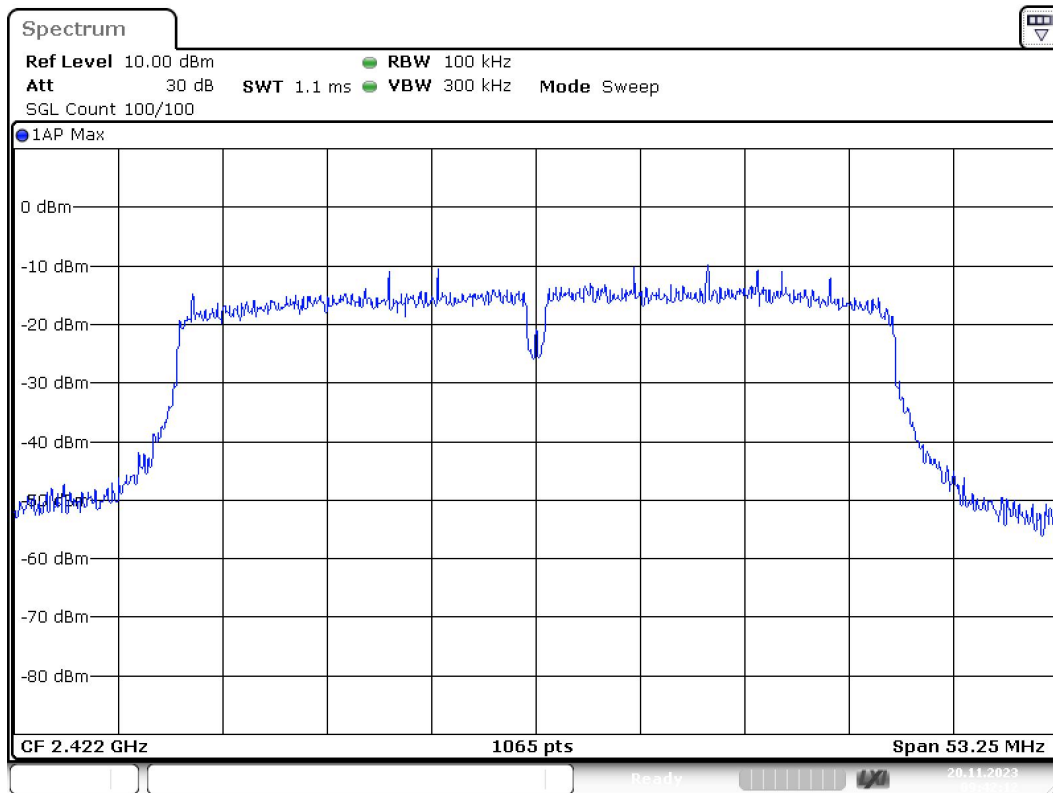
DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2422.000000	2430.750000	1.382	8.0	PASS

Peak Power Spectral Density



— Limit — Sum Level ◆ PSD

PSD Connector 1



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Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.39538 GHz	2.39538 GHz
Stop Frequency	2.44863 GHz	2.44863 GHz
Span	53.250 MHz	53.250 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1065	~ 1065
Sweeptime	1.070 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 (2422 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
2422.000000	PASS

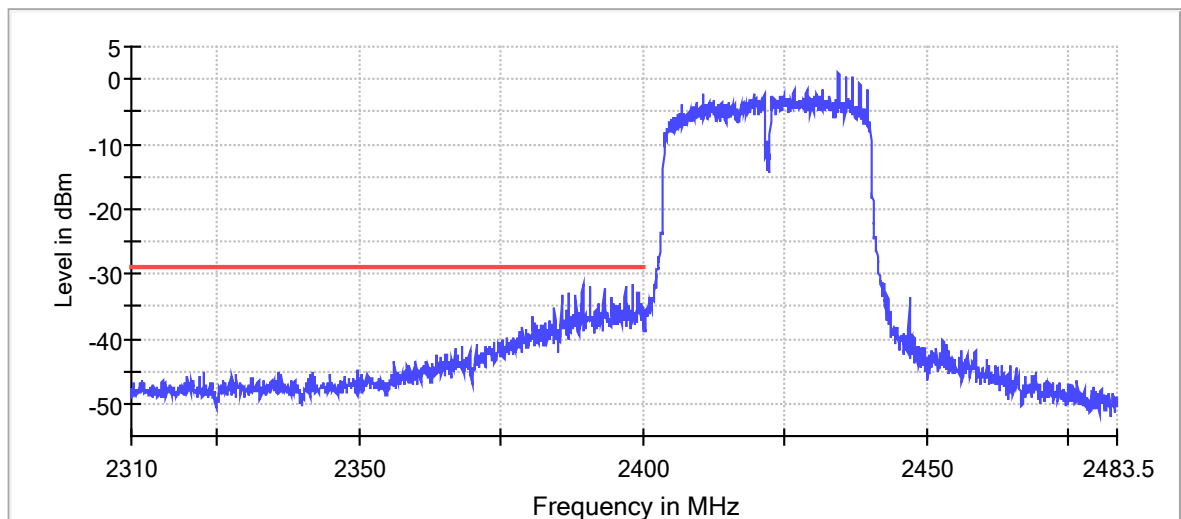
Inband Peak

Frequency (MHz)	Level (dBm)
2434.475000	1.2

Measurements

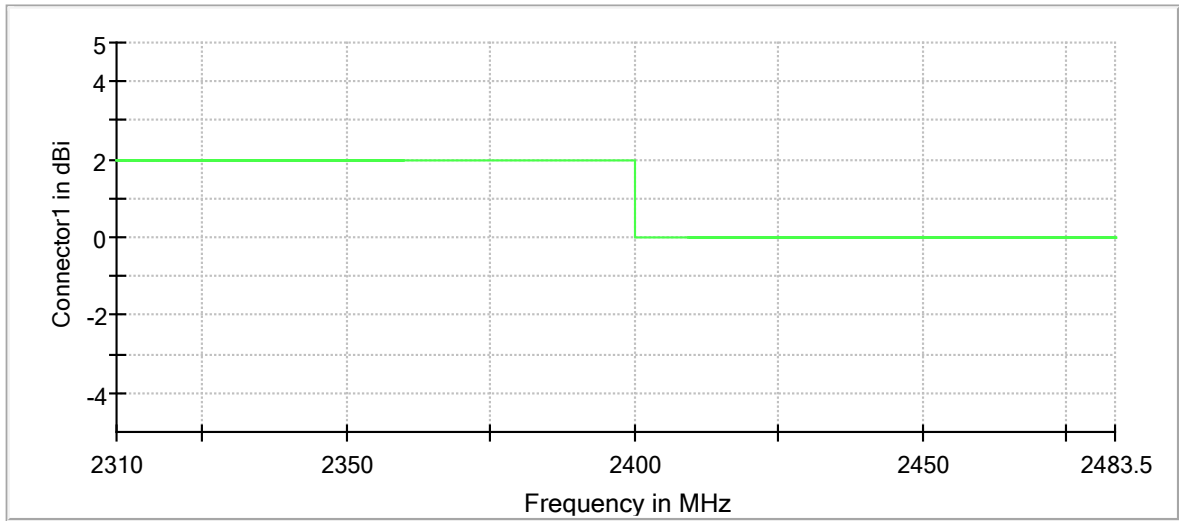
Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2398.225000	-31.5	2.7	-28.8	PASS
2389.475000	-31.7	2.9	-28.8	PASS
2398.275000	-31.8	3.0	-28.8	PASS
2389.525000	-31.8	3.0	-28.8	PASS
2390.725000	-31.9	3.1	-28.8	PASS
2396.975000	-32.1	3.3	-28.8	PASS
2393.275000	-32.2	3.4	-28.8	PASS
2393.225000	-32.3	3.5	-28.8	PASS
2390.675000	-32.4	3.6	-28.8	PASS
2397.025000	-32.5	3.7	-28.8	PASS
2398.175000	-32.7	3.9	-28.8	PASS
2386.975000	-32.8	4.0	-28.8	PASS
2389.425000	-32.8	4.0	-28.8	PASS
2390.775000	-32.8	4.0	-28.8	PASS
2399.175000	-33.0	4.2	-28.8	PASS

Band Edge



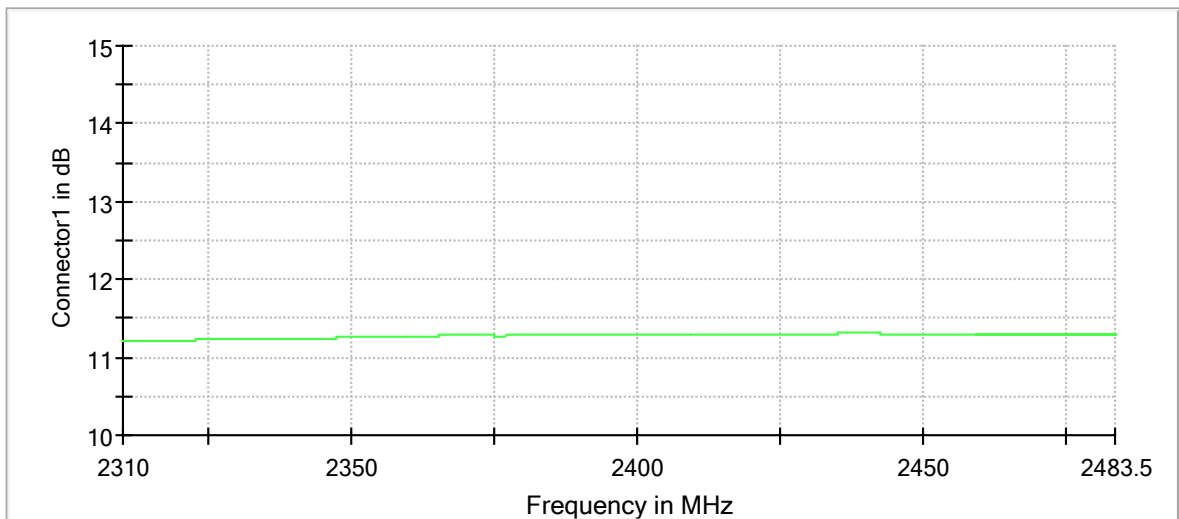
— Limit — Sum Level × Fail

Gain



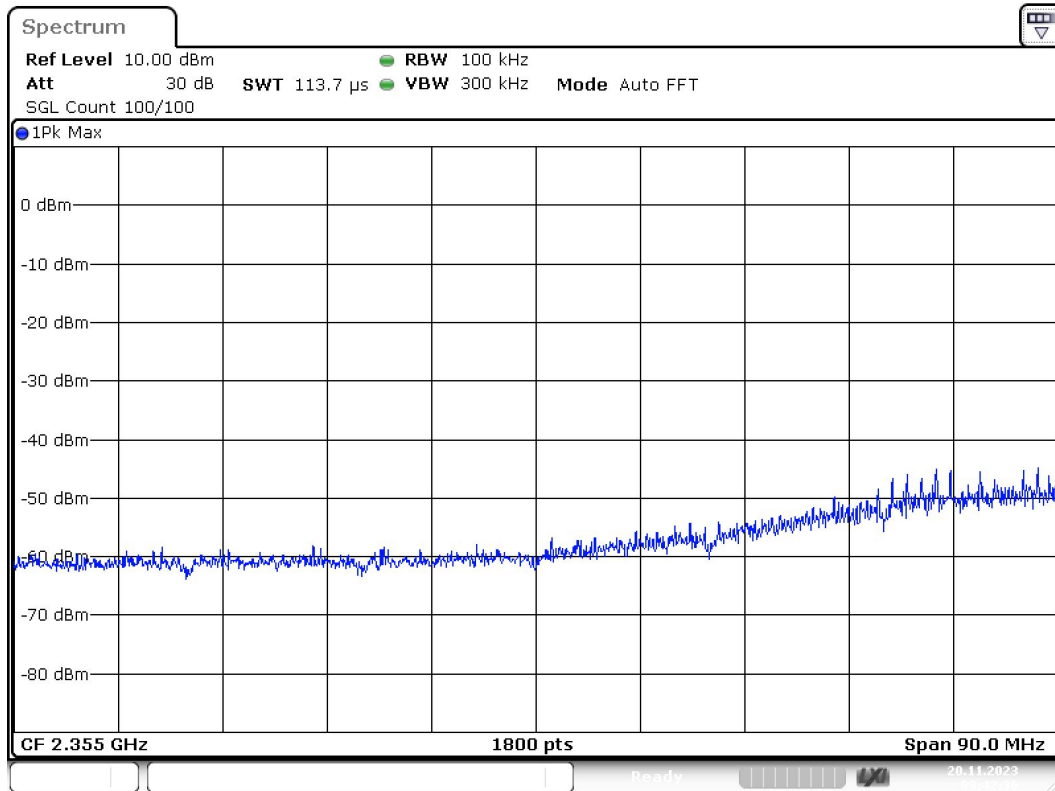
Connector1

Attenuation



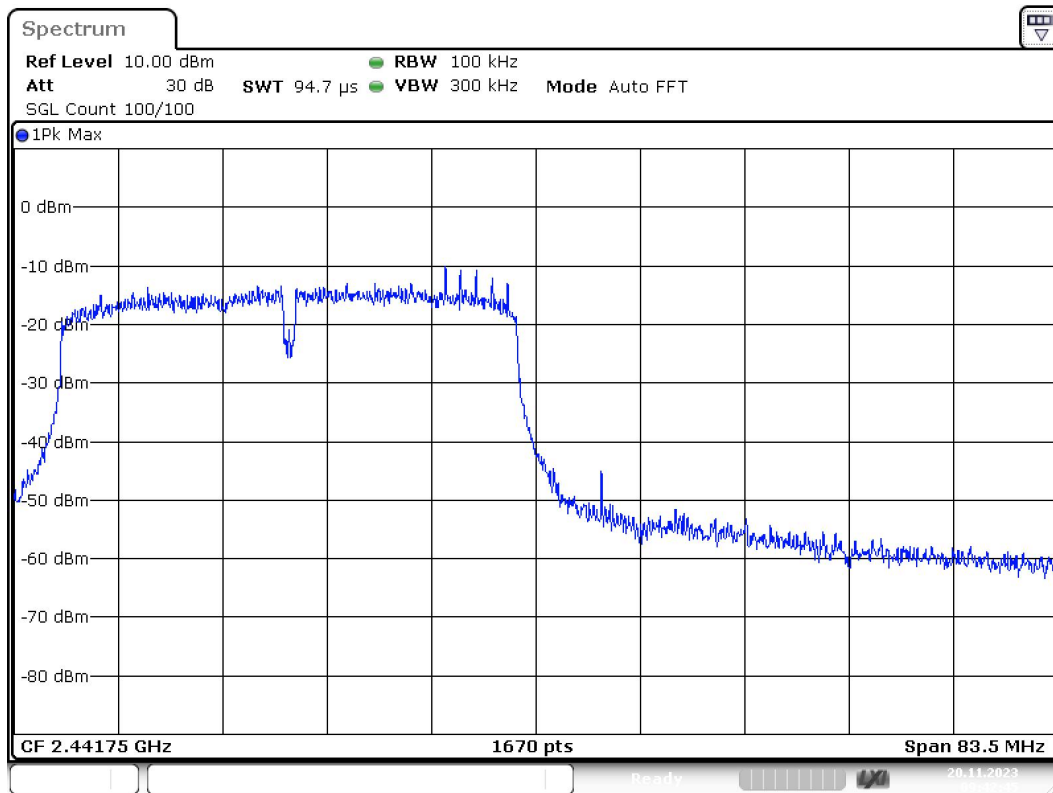
Connector1

Band Edge Connector 1_0



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Band Edge Connector 1_1



Date: 20.NOV.2023 09:42:45

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	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	9 / 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	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 (2422 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
2422.000000	PASS

Final measurements

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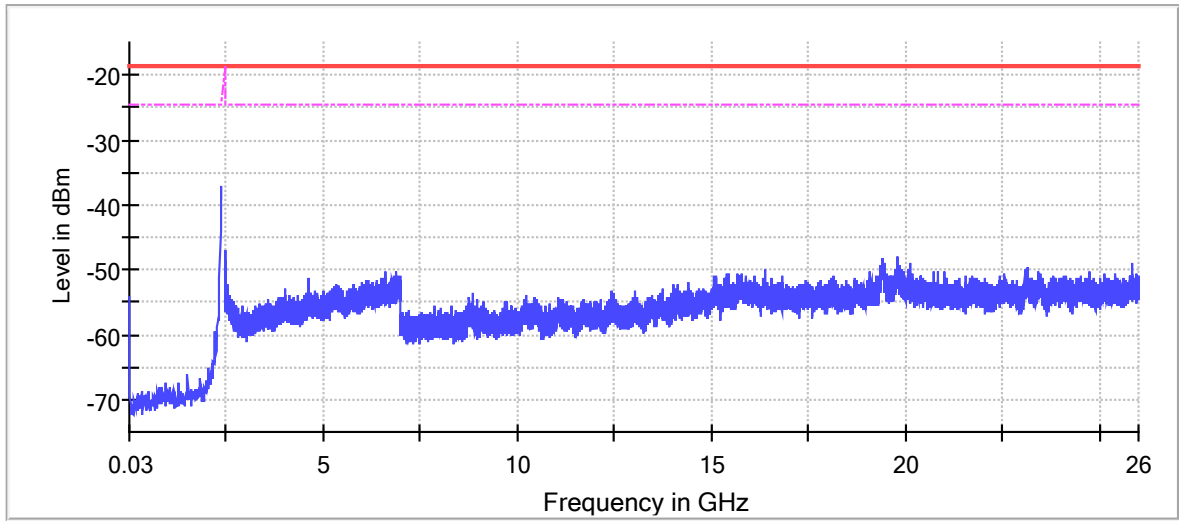
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2395.021008	-37.1	18.4	-18.6
2400.000000	-39.1	20.4	-18.6
2385.063025	-39.1	20.5	-18.6
2375.105042	-43.9	25.3	-18.6
2365.147059	-44.1	25.5	-18.6
2486.806904	-47.0	28.4	-18.6
19805.433057	-47.9	29.3	-18.6
19407.869653	-48.3	29.7	-18.6
19418.892667	-48.3	29.7	-18.6
19431.385418	-48.4	29.7	-18.6
19427.711079	-48.5	29.9	-18.6
2484.602301	-48.7	30.1	-18.6
19393.172299	-48.7	30.1	-18.6
19439.468962	-48.8	30.2	-18.6
25826.203798	-49.0	30.4	-18.6

Measurement Settings

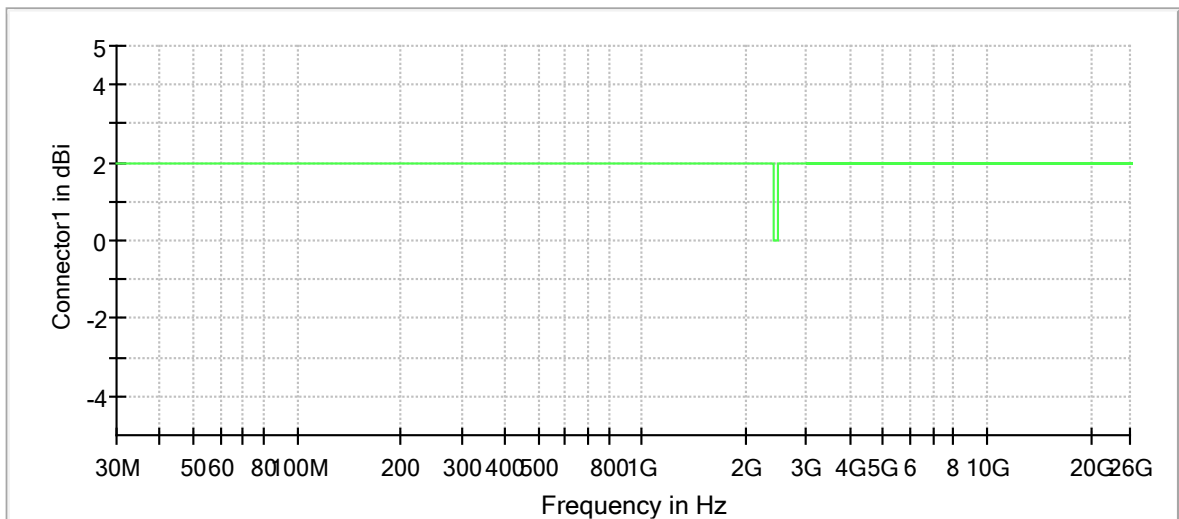
Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2483.500000	26000.000000	2	2

Spurious

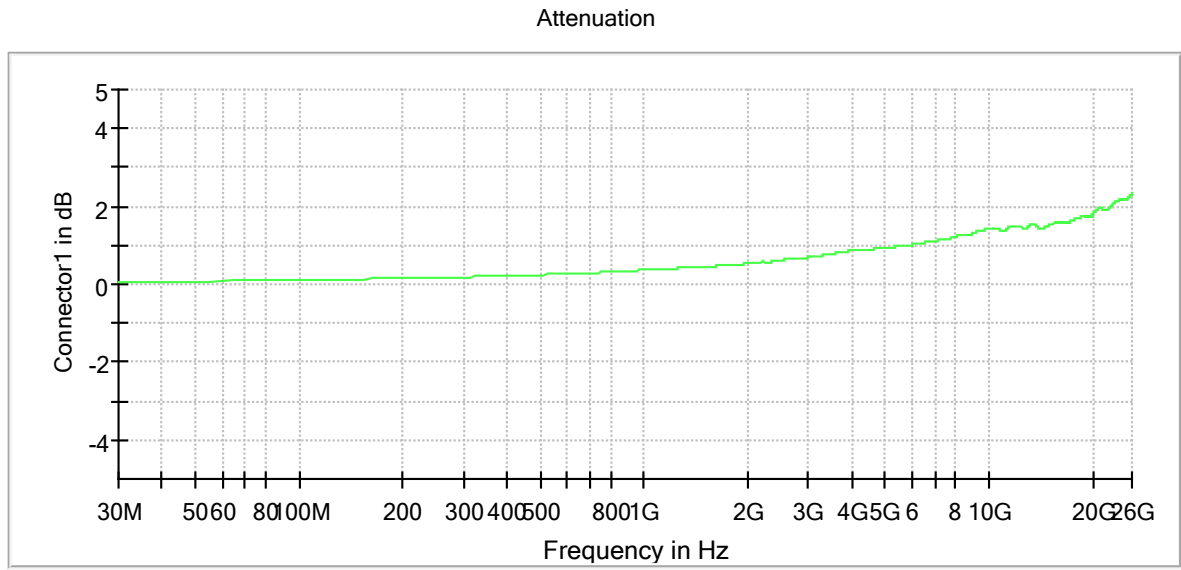


— Limit — Sum Level - - - Threshold × Critical × Final Critical

Gain

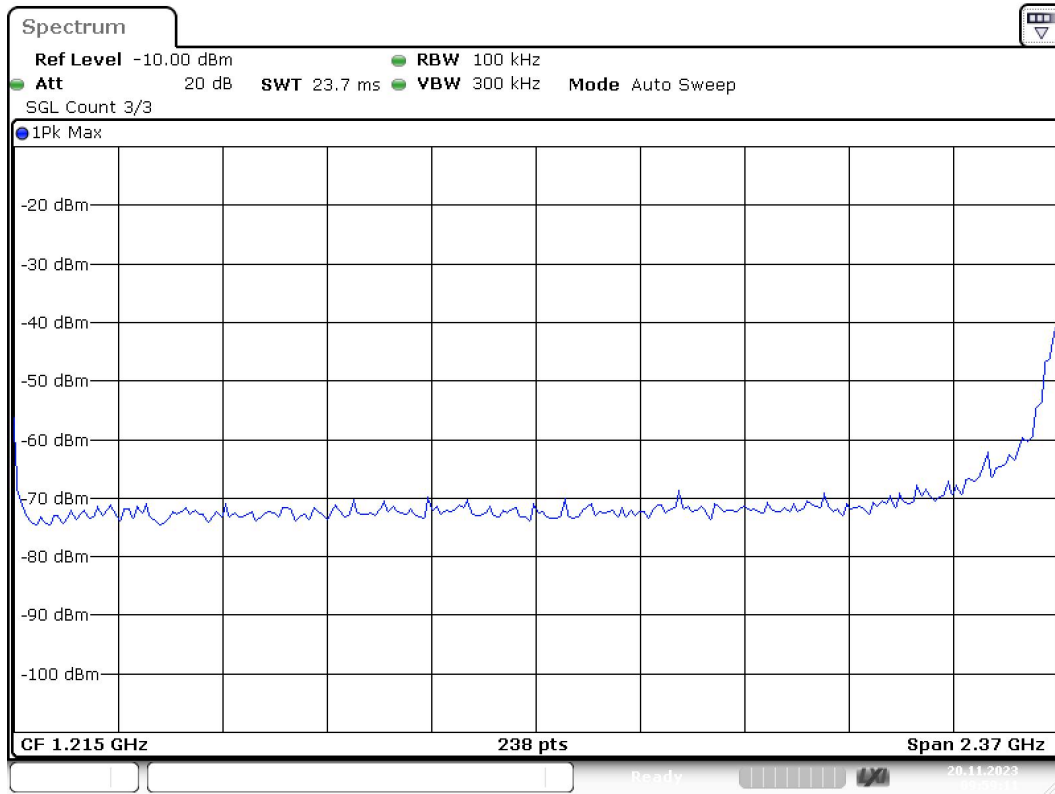


— Connector1



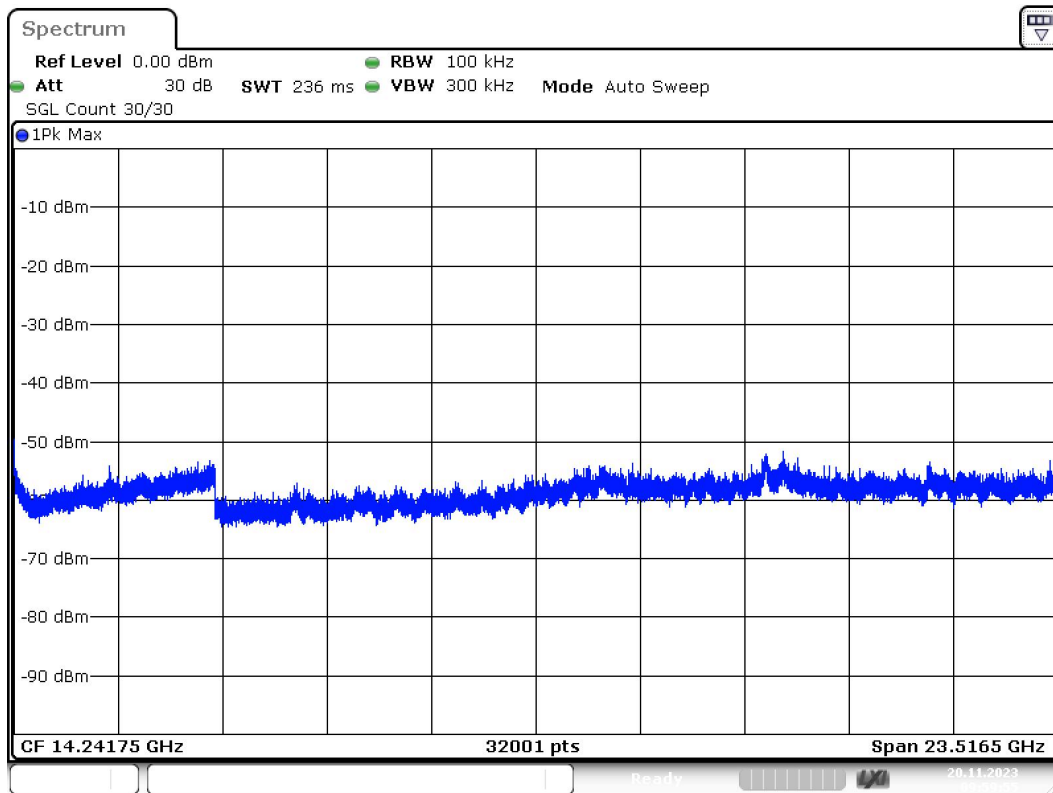
— Connector1

Spurious Connector 1_0



Date: 20.NOV.2023 09:59:12

Spurious Connector 1_1



Date: 20.NOV.2023 09:59:55

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
SweepTime	23.700 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

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	0.000 dBm	-30.000 dBm
Attenuation	30.000 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

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

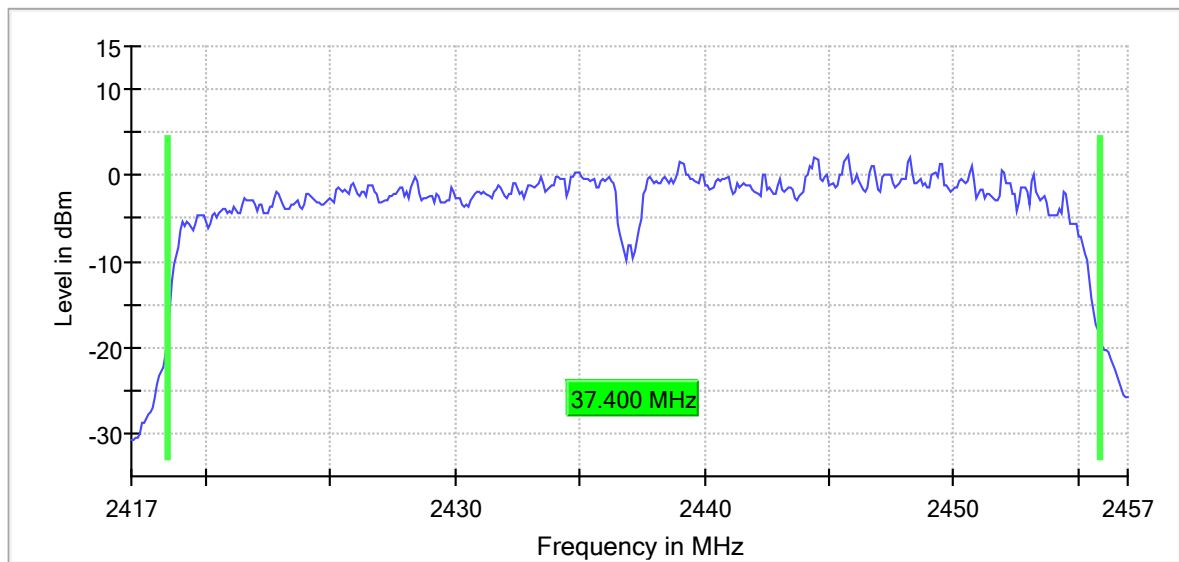
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2437.000000	37.400000	---	---	2418.450000	2455.850000

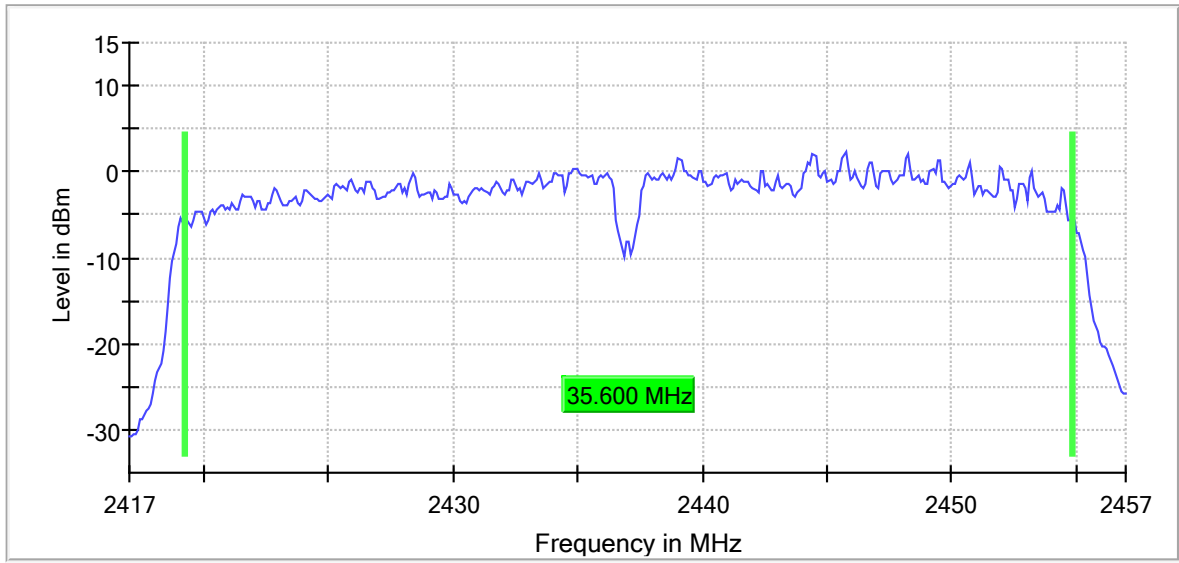
(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2437.000000	2.3	PASS

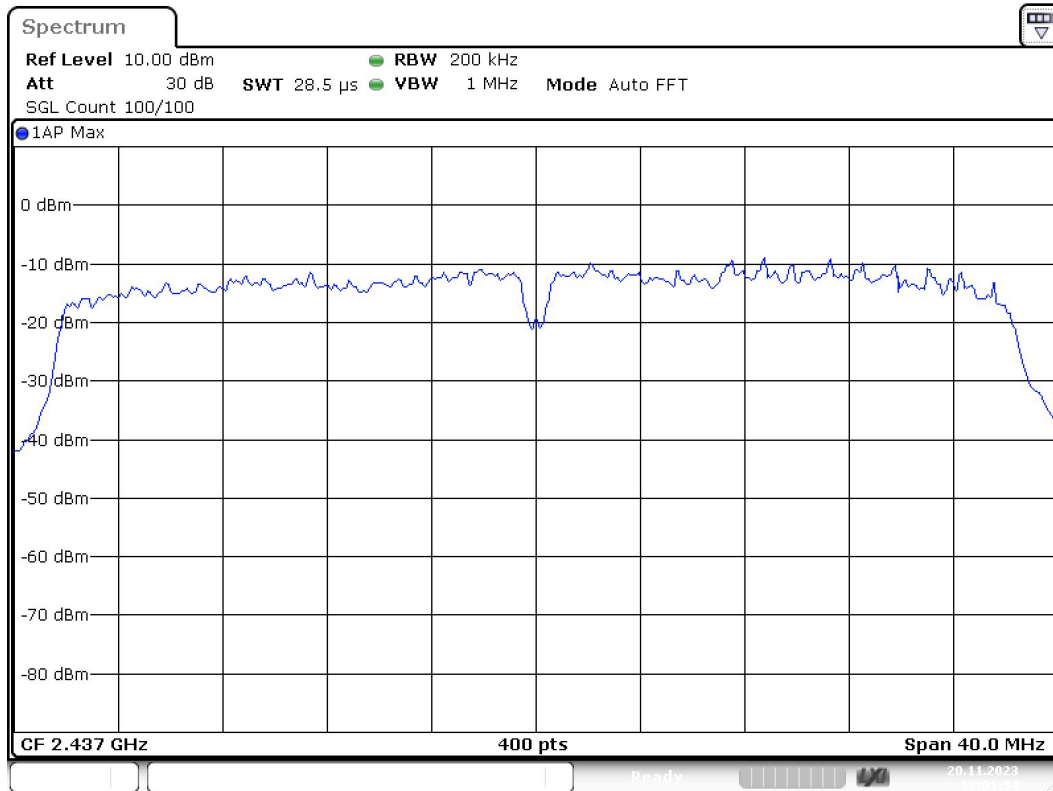
20 dB Bandwidth



99 % Bandwidth



Bandwidth



Date: 20.NOV.2023 10:01:54

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	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 C63.10-2013

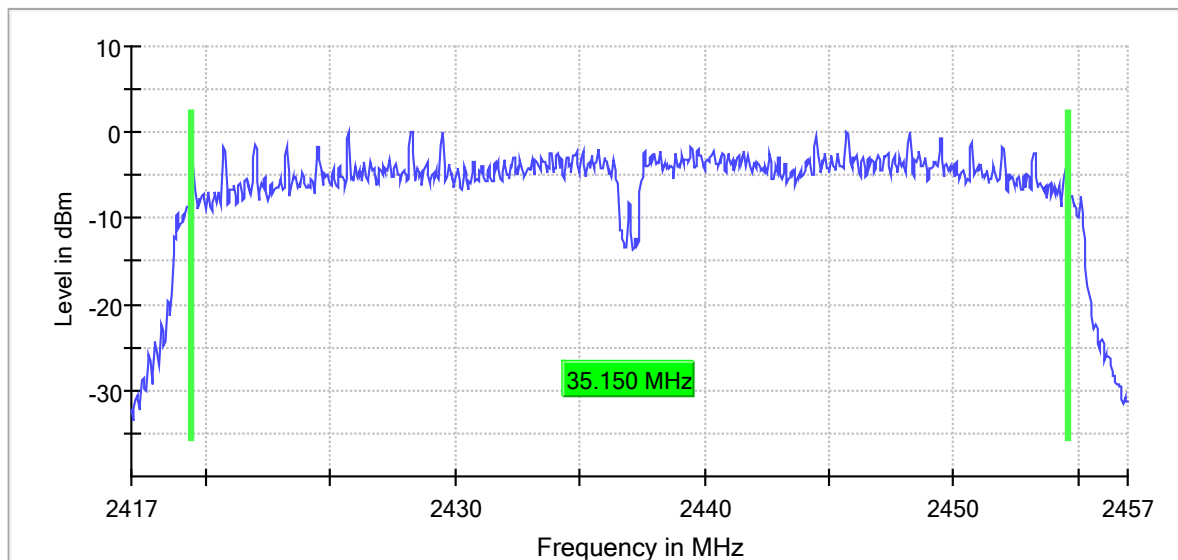
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2437.000000	35.150000	0.500000	---	2419.425000	2454.575000

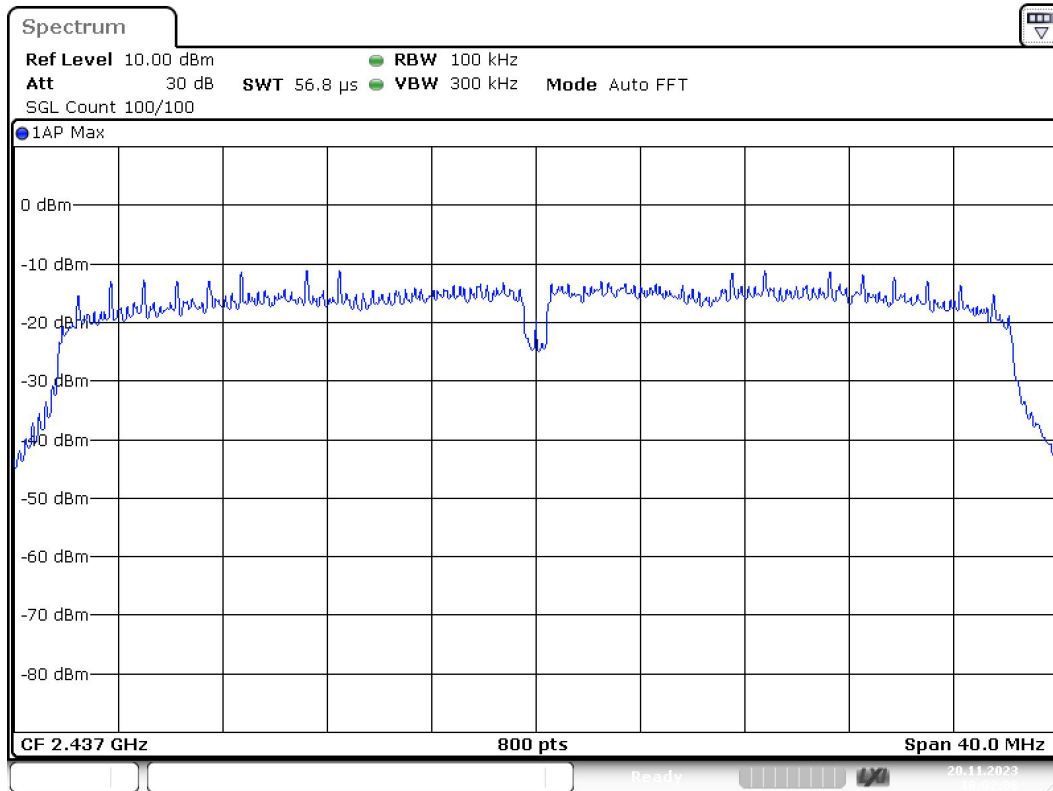
(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2437.000000	0.2	PASS

6 dB Bandwidth



Bandwidth



Date: 20.NOV.2023 10:02:09

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	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

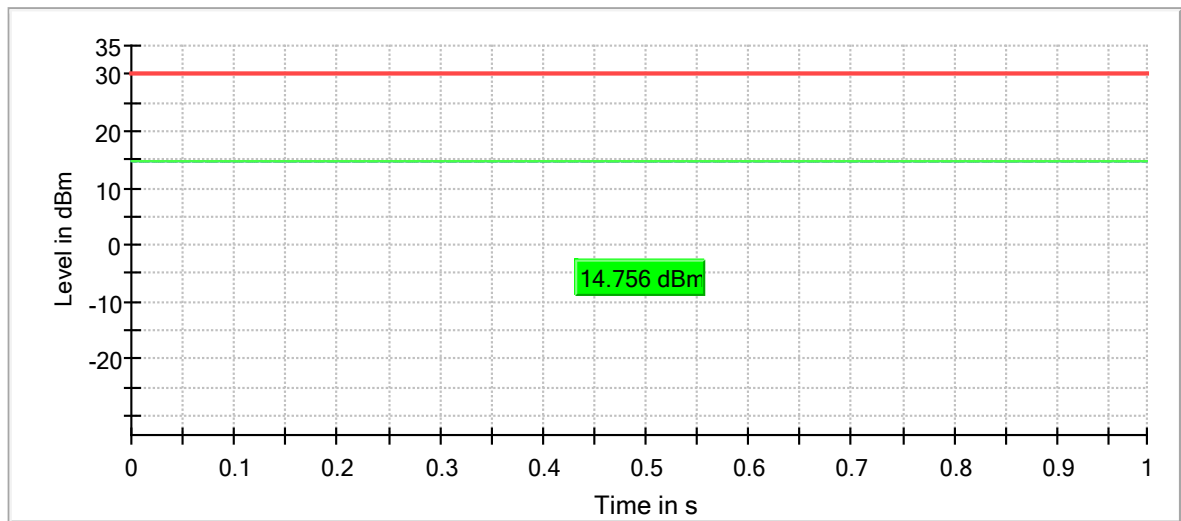
RF output power (2437 MHz; 20.000 dBm; 20 MHz)

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	14.8	30.0	14.8	99.020	PASS

Gated Trace



— Gated Trace — Overall — Limit

OSP PowerMeter settings

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

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

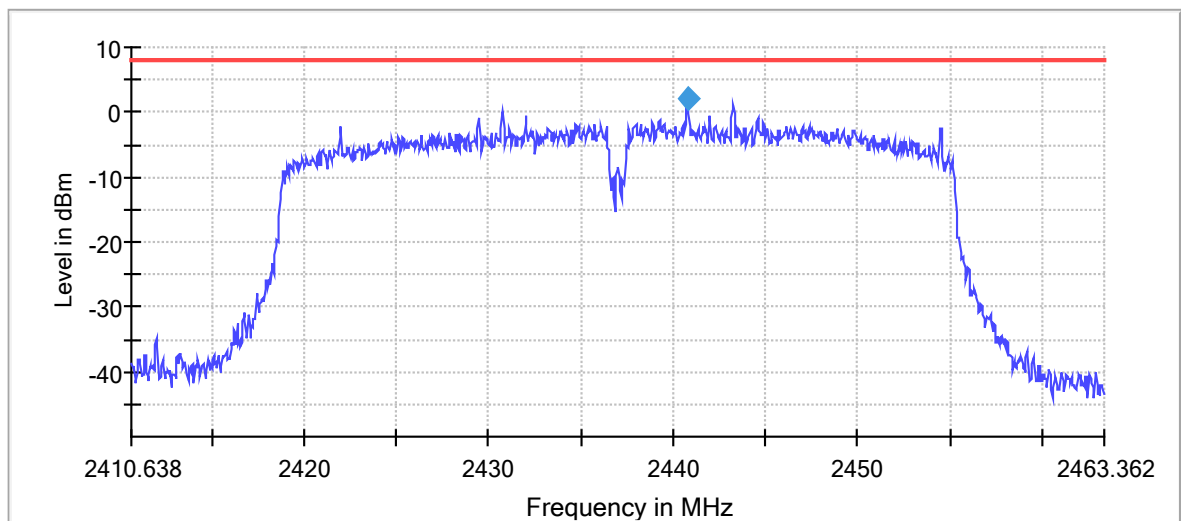
Customized settings.

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

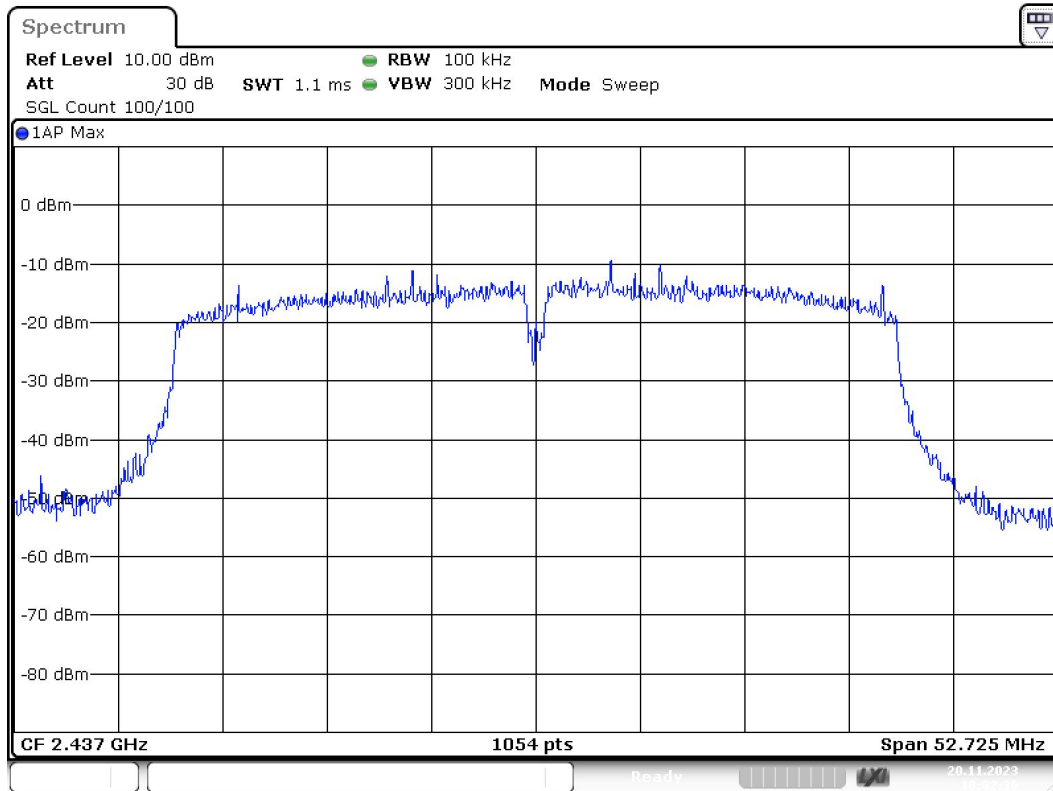
Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2437.000000	2440.776791	1.989	8.0	PASS

Peak Power Spectral Density



PSD Connector 1



Date: 20.NOV.2023 10:02:37

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.41064 GHz	2.41064 GHz
Stop Frequency	2.46336 GHz	2.46336 GHz
Span	52.725 MHz	52.725 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1054	~ 1054
Sweeptime	1.060 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
---	---	---	---	---	---

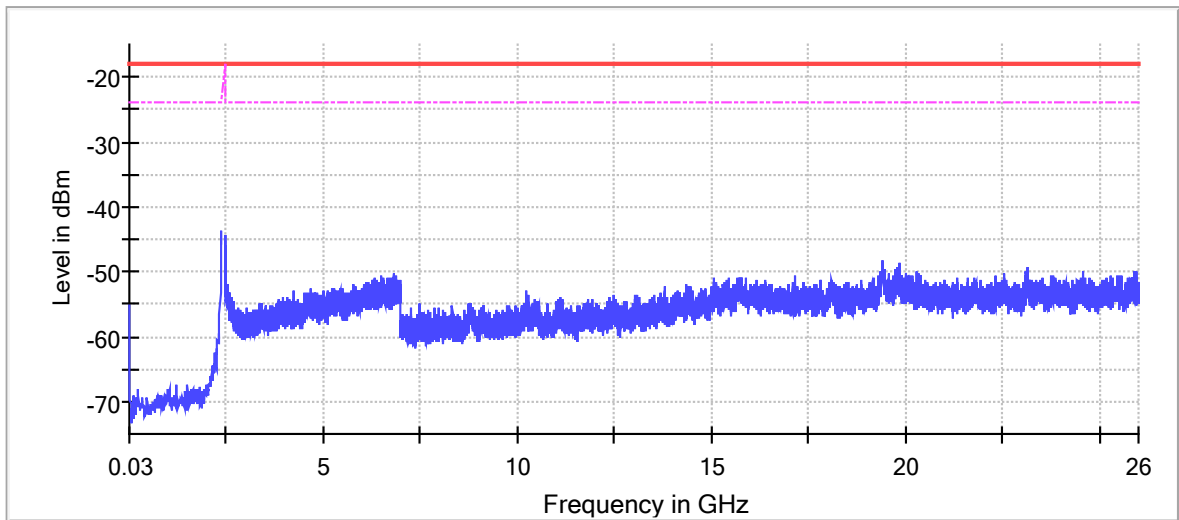
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2395.021008	-43.7	25.7	-18.0
2500.769390	-44.2	26.2	-18.0
2400.000000	-45.7	27.7	-18.0
2385.063025	-45.7	27.7	-18.0
2488.276640	-46.0	27.9	-18.0
2483.867434	-46.4	28.4	-18.0
2484.602301	-46.7	28.7	-18.0
2486.806904	-47.0	29.0	-18.0
2486.072037	-47.1	29.1	-18.0
2487.541772	-47.4	29.3	-18.0
2489.011507	-47.4	29.4	-18.0
2491.950978	-47.7	29.7	-18.0
2495.625316	-48.0	30.0	-18.0
2489.746375	-48.0	30.0	-18.0
2485.337169	-48.0	30.0	-18.0

Measurement Settings

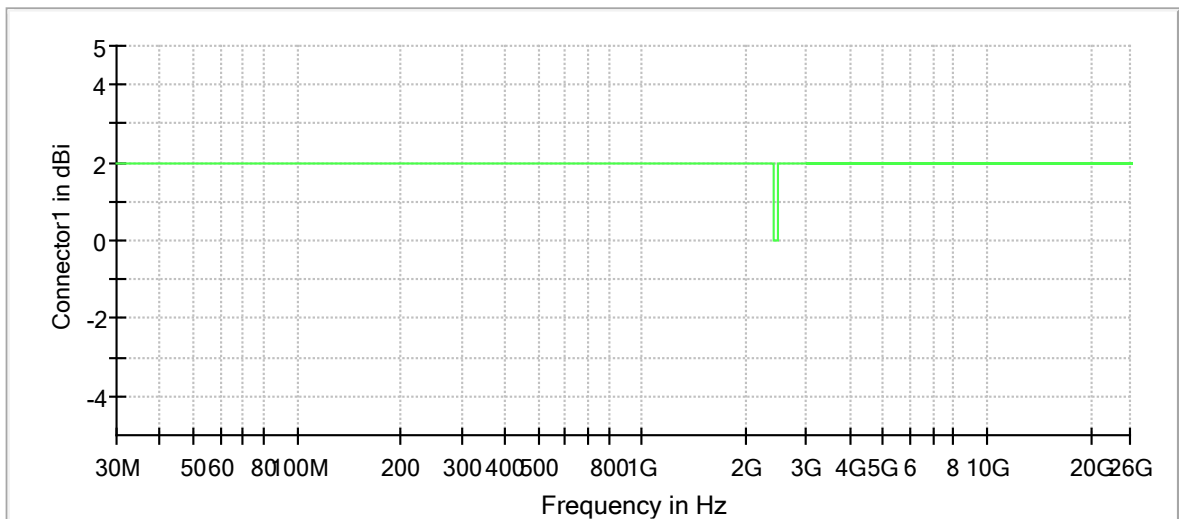
Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2483.500000	26000.000000	2	2

Spurious



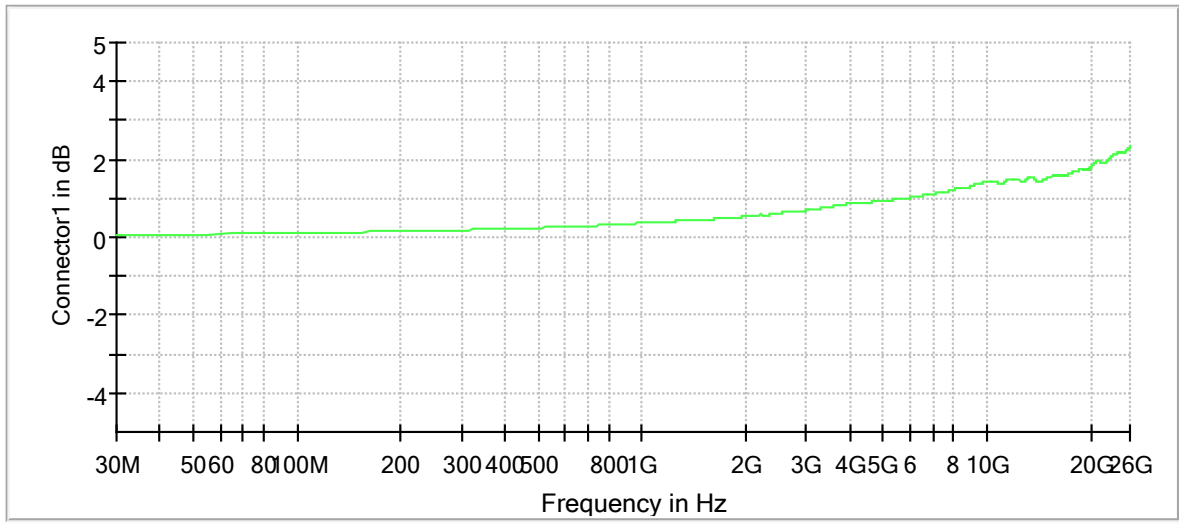
— Limit — Sum Level - - - Threshold × Critical × Final Critical

Gain



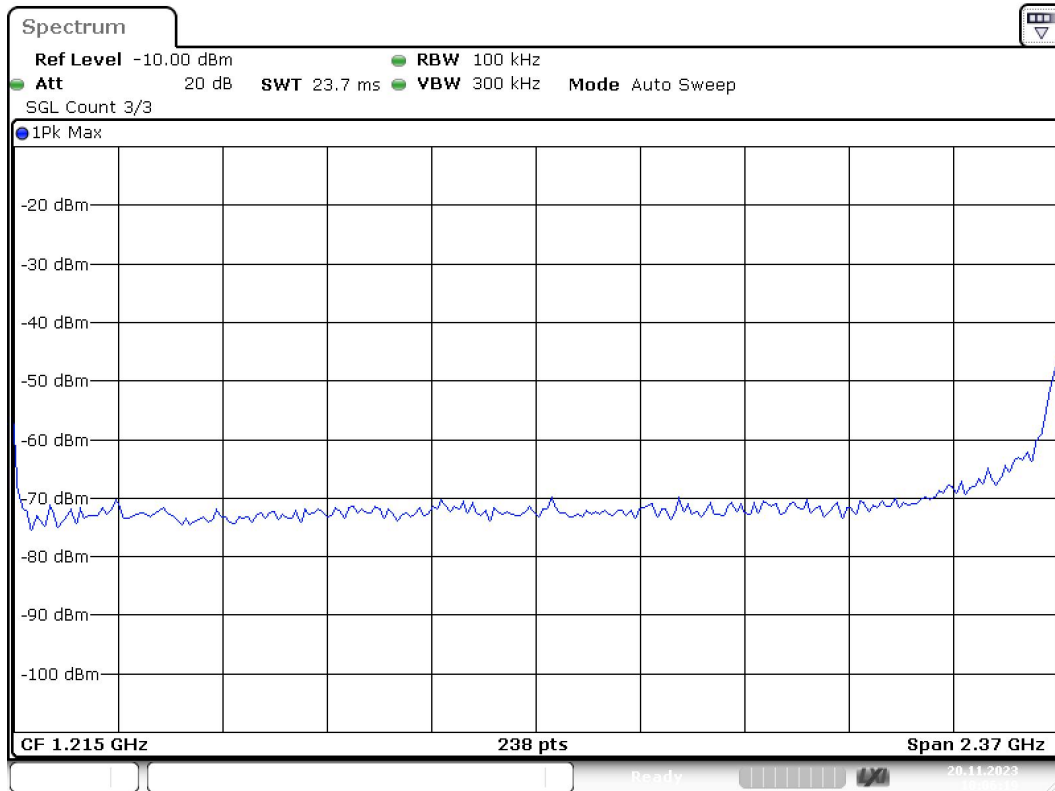
— Connector1

Attenuation



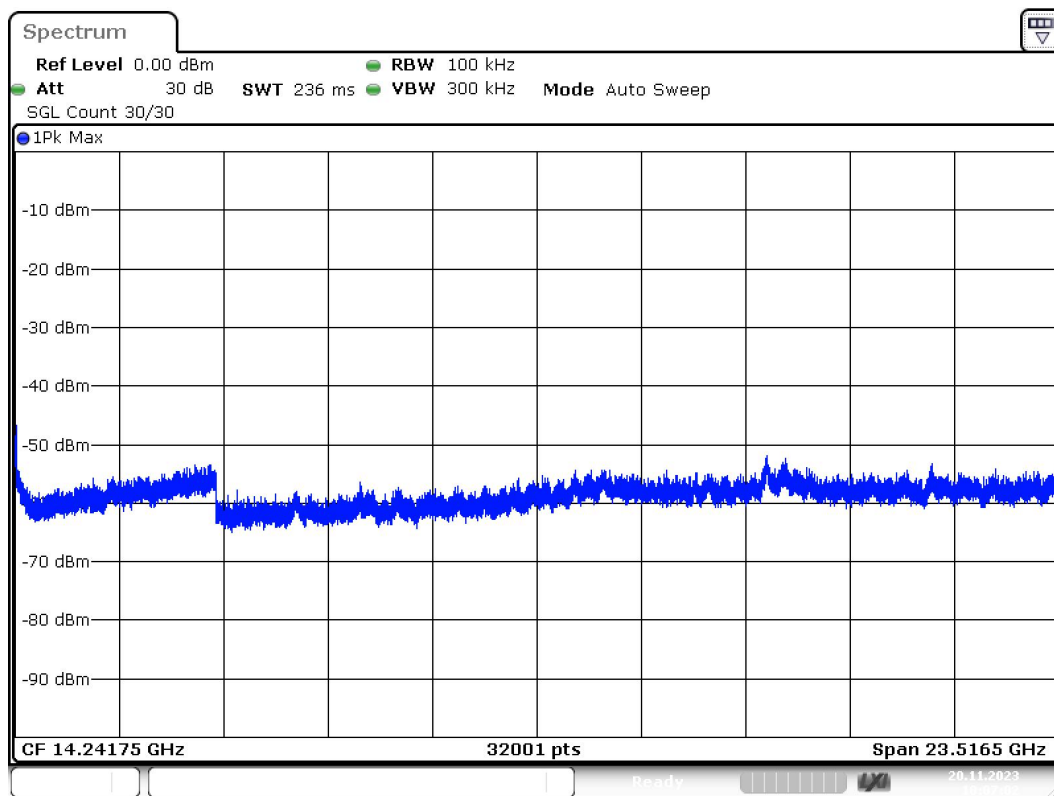
— Connector1

Spurious Connector 1_0



Date: 20.NOV.2023 10:06:19

Spurious Connector 1_1



Date: 20.NOV.2023 10:07:02

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
SweepTime	23.700 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

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	0.000 dBm	-30.000 dBm
Attenuation	30.000 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

Emission Bandwidth 20 dB (2452 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

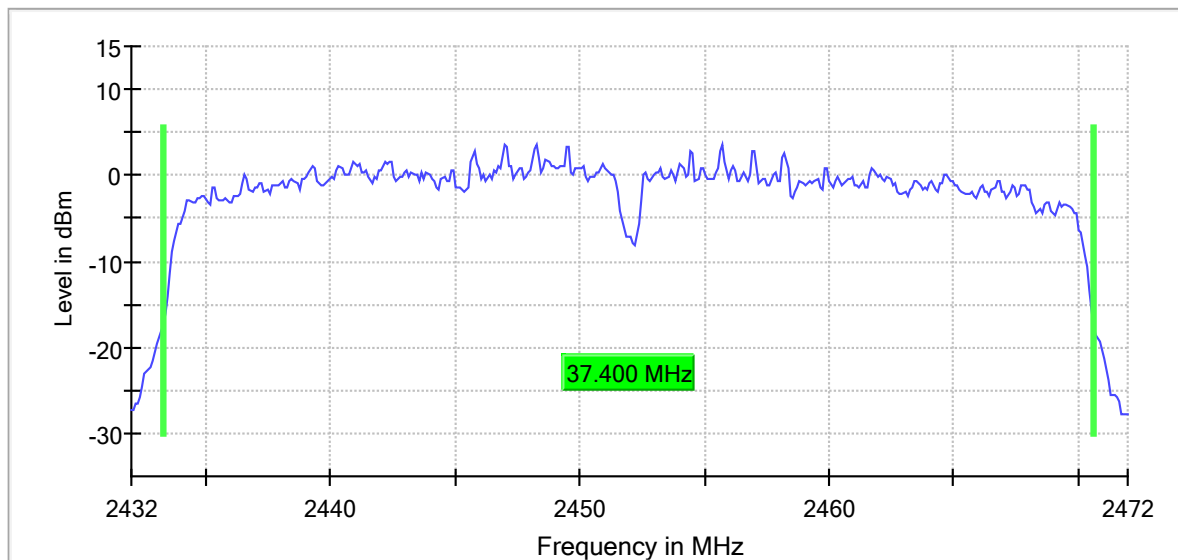
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2452.000000	37.400000	---	---	2433.250000	2470.650000

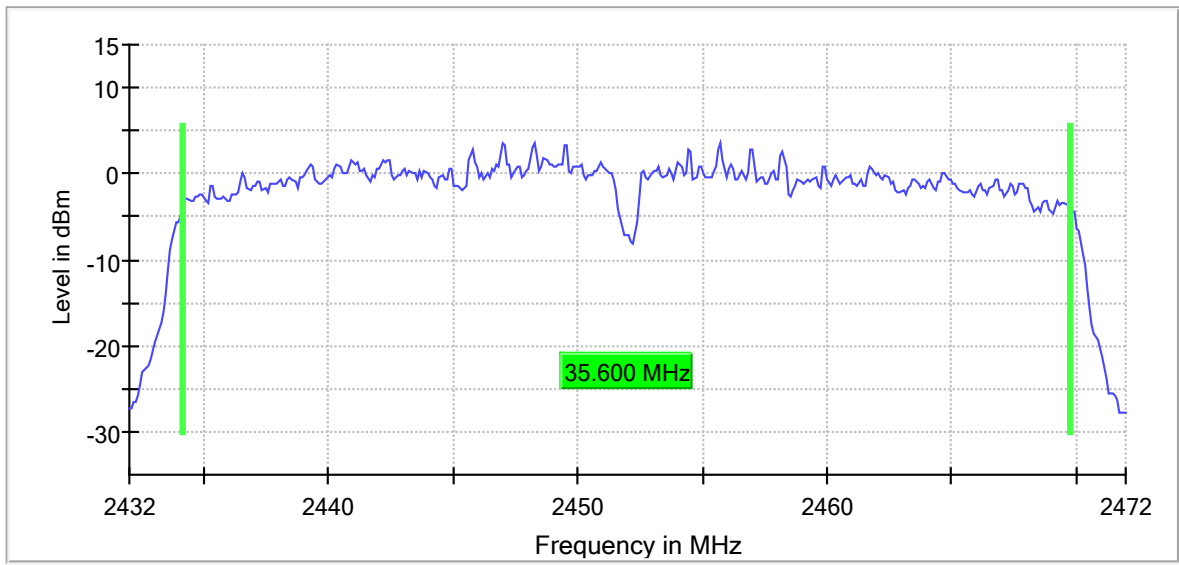
(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2452.000000	3.6	PASS

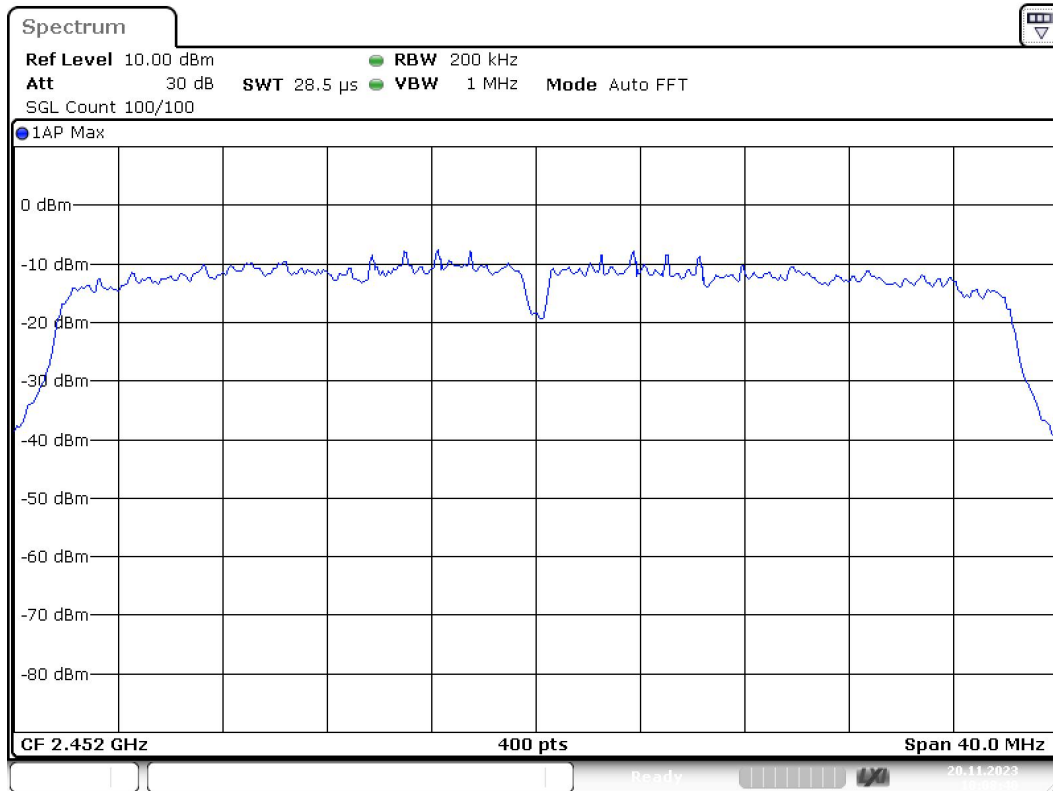
20 dB Bandwidth



99 % Bandwidth



Bandwidth



Date: 20.NOV.2023 10:08:41

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.43200 GHz	2.43200 GHz
Stop Frequency	2.47200 GHz	2.47200 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 (2452 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

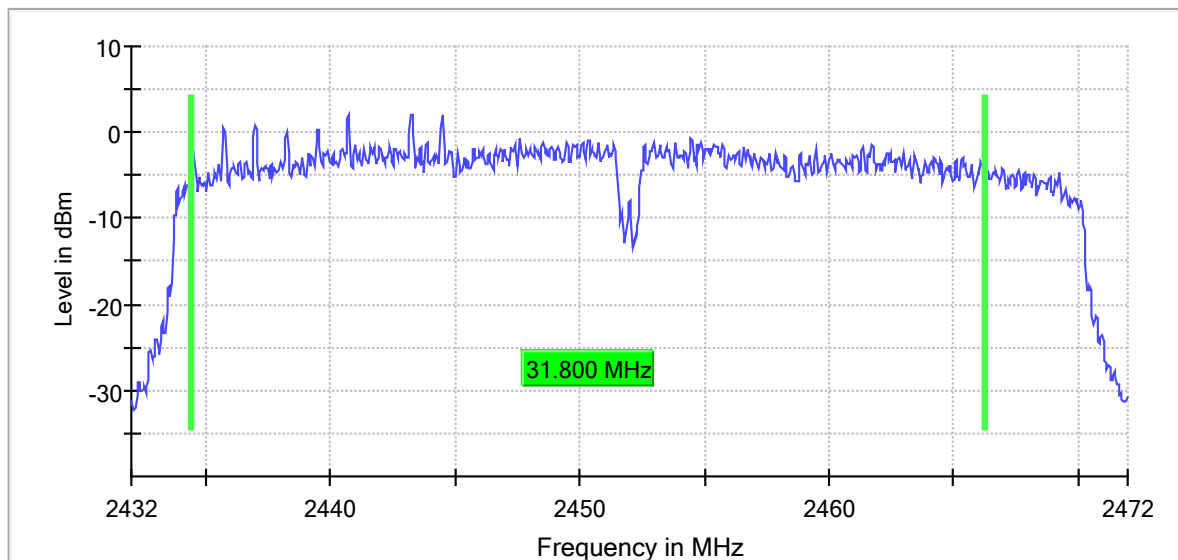
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2452.000000	31.800000	0.500000	---	2434.425000	2466.225000

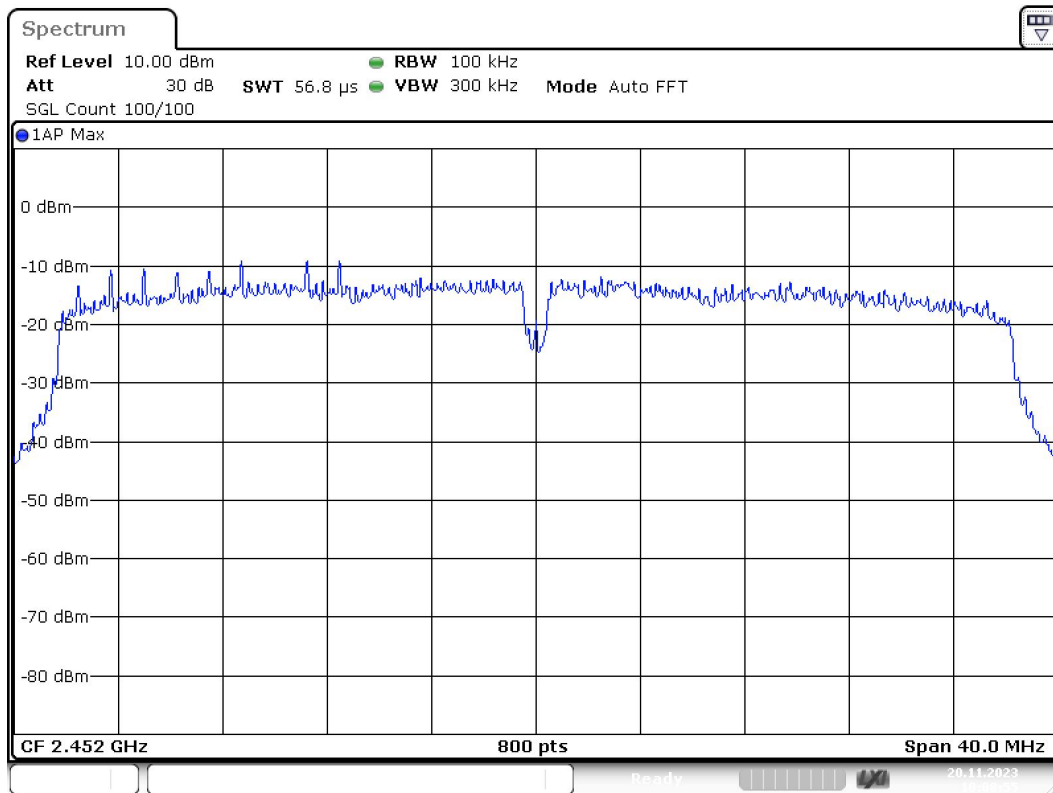
(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2452.000000	2.1	PASS

6 dB Bandwidth



Bandwidth



Date: 20.NOV.2023 10:08:56

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.43200 GHz	2.43200 GHz
Stop Frequency	2.47200 GHz	2.47200 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

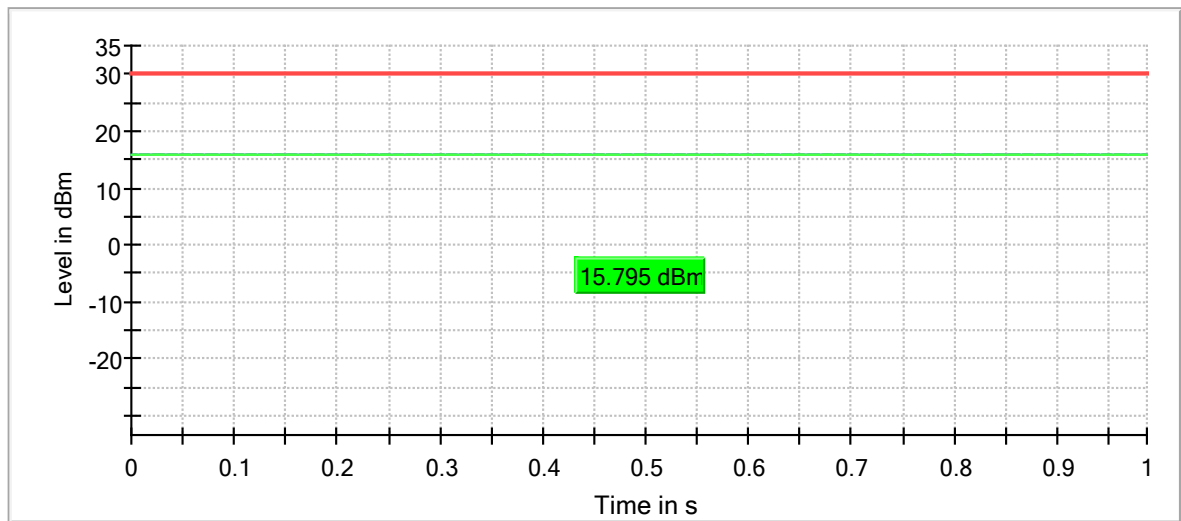
RF output power (2452 MHz; 20.000 dBm; 20 MHz)

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
2452.000000	15.8	30.0	15.8	99.019	PASS

Gated Trace



— Gated Trace — Overall — Limit

OSP PowerMeter settings

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

Peak Power Spectral Density (2452 MHz; 20.000 dBm; 20 MHz)

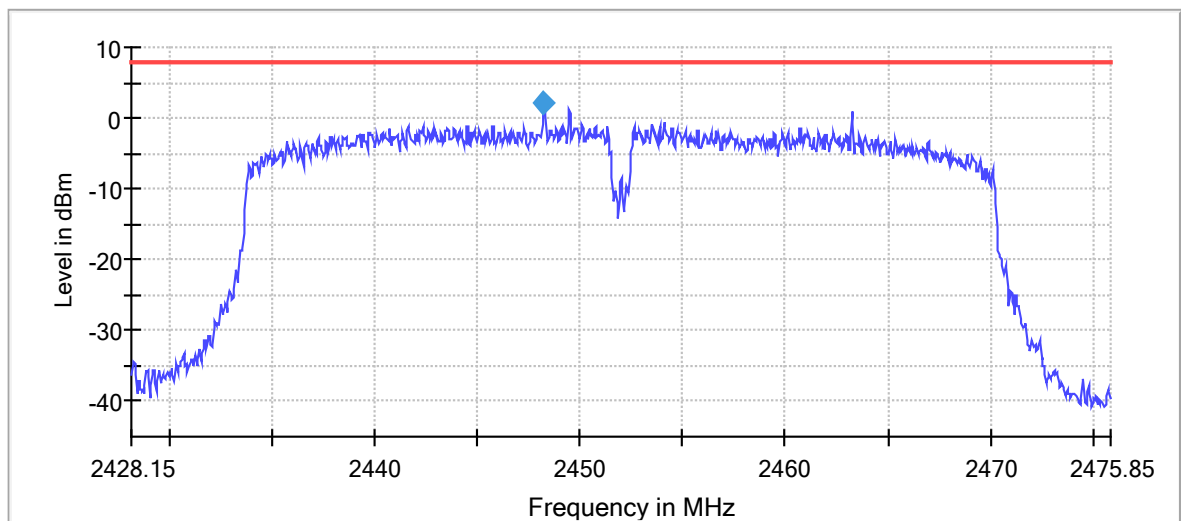
Customized settings.

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

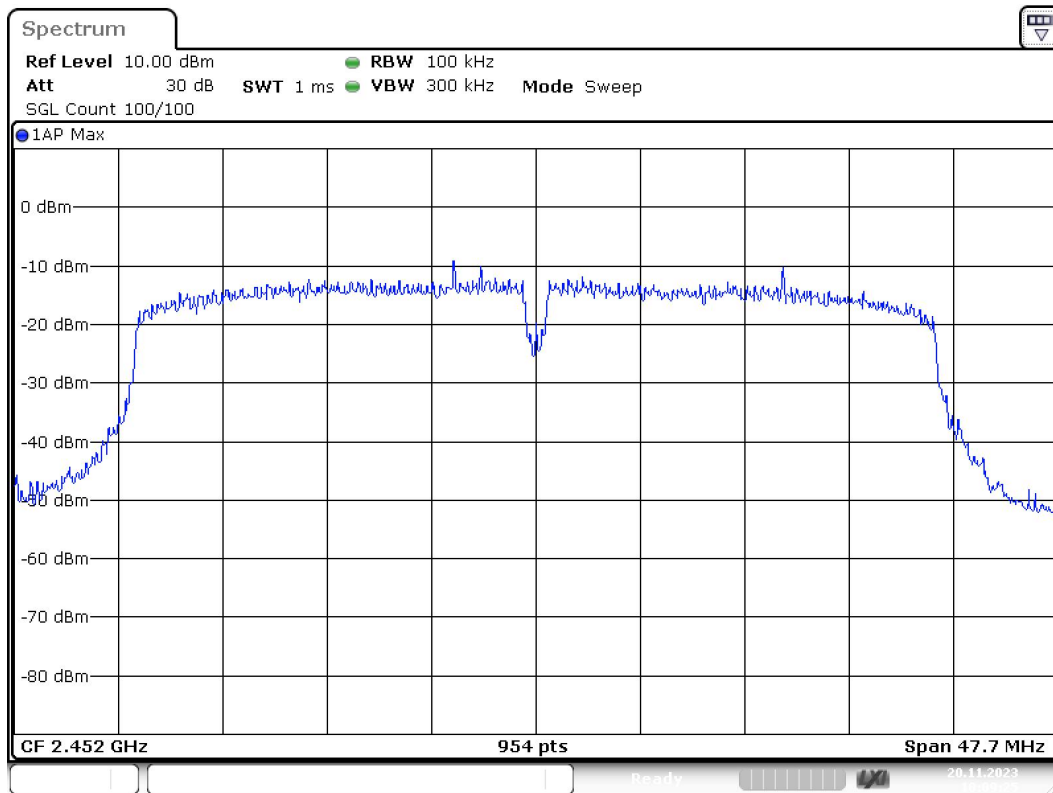
DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2452.000000	2448.225000	2.129	8.0	PASS

Peak Power Spectral Density



— Limit — Sum Level ◆ PSD

PSD Connector 1



Date: 20.NOV.2023 10:09:25

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.42815 GHz	2.42815 GHz
Stop Frequency	2.47585 GHz	2.47585 GHz
Span	47.700 MHz	47.700 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	954	~ 954
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 (2452 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
2452.000000	PASS

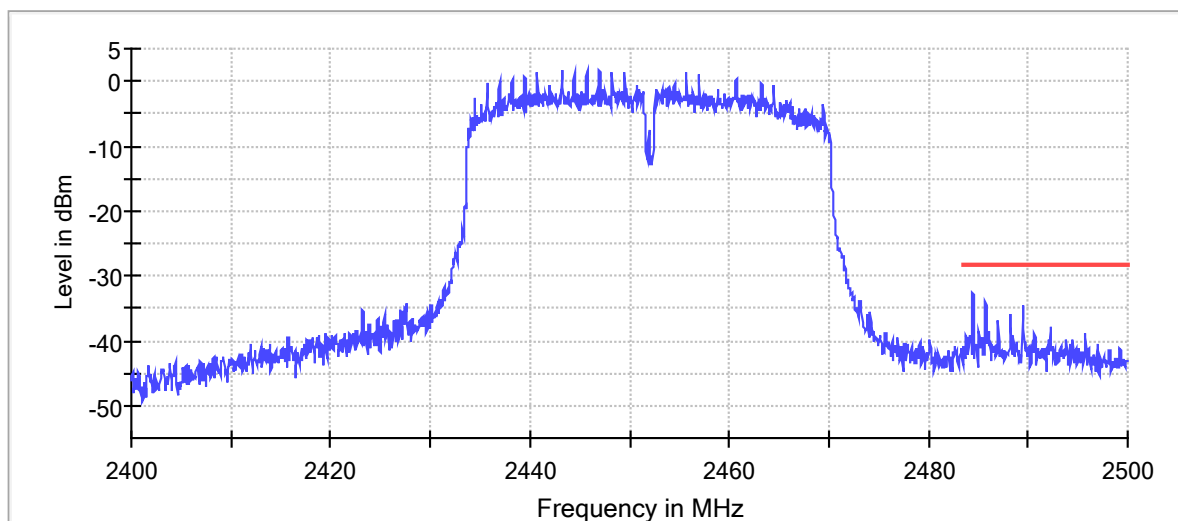
Inband Peak

Frequency (MHz)	Level (dBm)
2443.225000	1.7

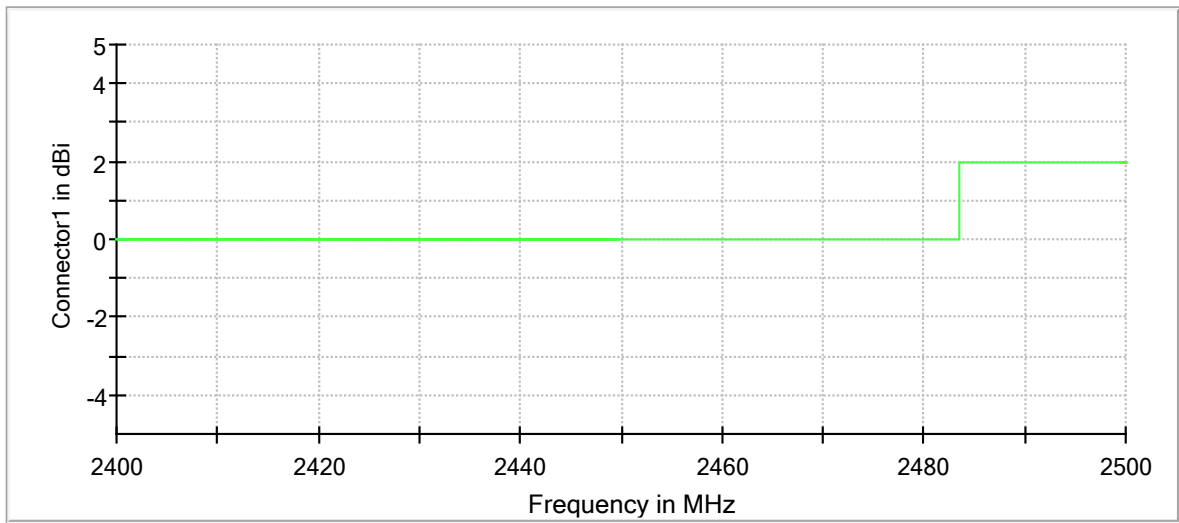
Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2484.475000	-32.6	4.3	-28.3	PASS
2484.525000	-33.0	4.6	-28.3	PASS
2485.725000	-33.9	5.5	-28.3	PASS
2484.425000	-34.0	5.6	-28.3	PASS
2485.775000	-34.4	6.1	-28.3	PASS
2489.475000	-34.6	6.2	-28.3	PASS
2489.525000	-34.7	6.4	-28.3	PASS
2485.675000	-34.9	6.6	-28.3	PASS
2488.225000	-35.9	7.6	-28.3	PASS
2488.275000	-36.0	7.7	-28.3	PASS
2484.575000	-36.5	8.2	-28.3	PASS
2489.425000	-36.6	8.3	-28.3	PASS
2486.975000	-36.7	8.4	-28.3	PASS
2487.025000	-36.9	8.5	-28.3	PASS
2488.175000	-37.0	8.7	-28.3	PASS

Band Edge

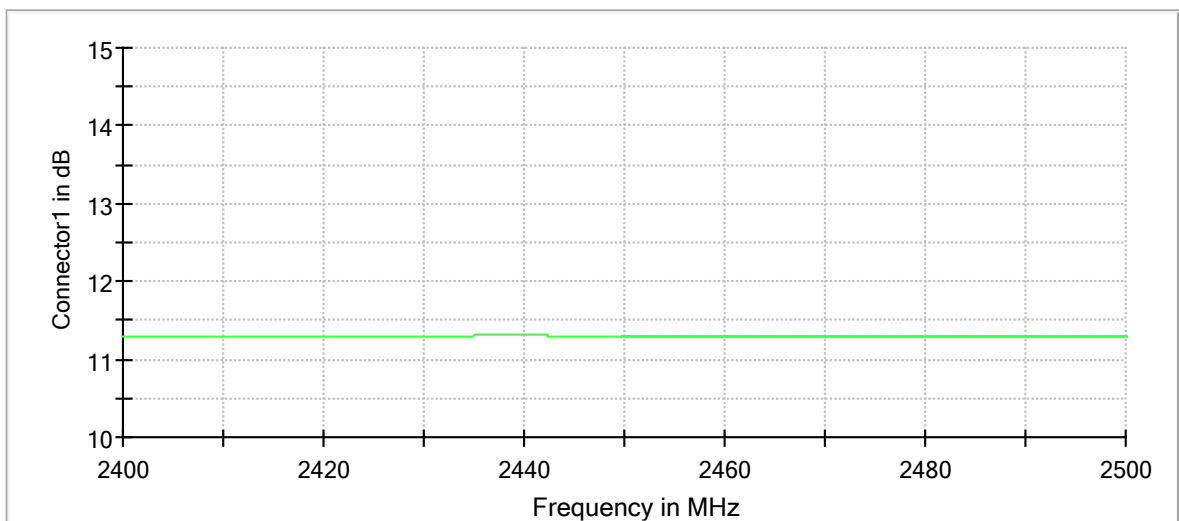


Gain



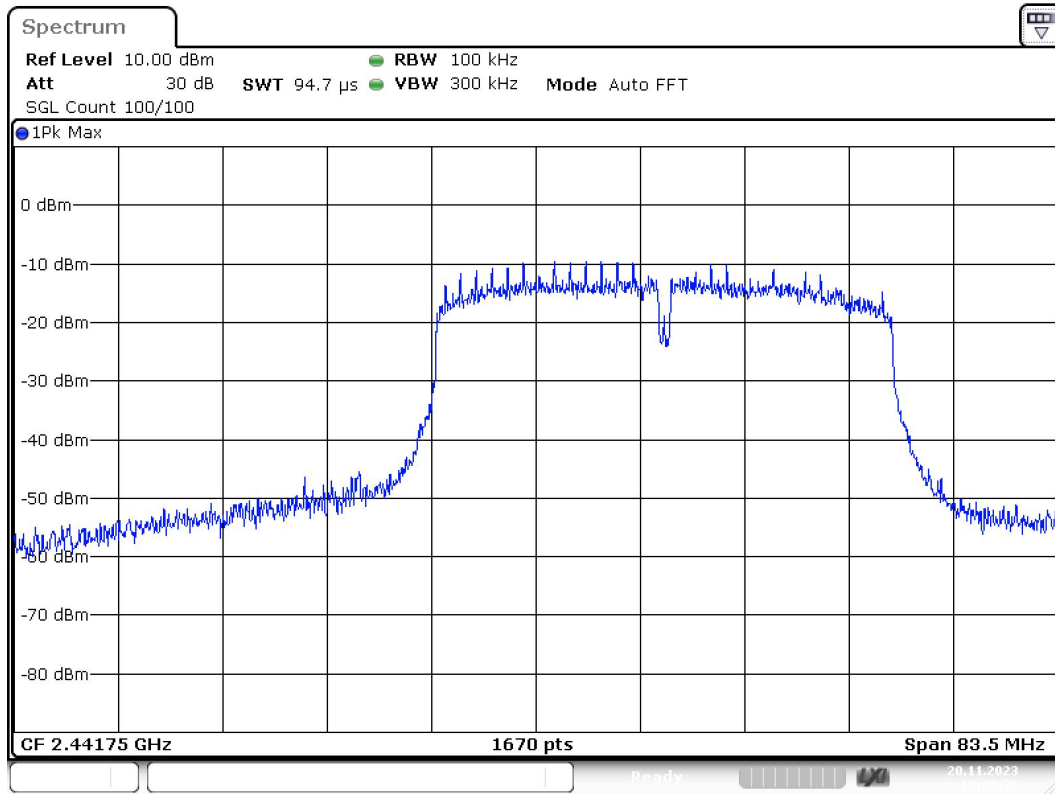
Connector1

Attenuation



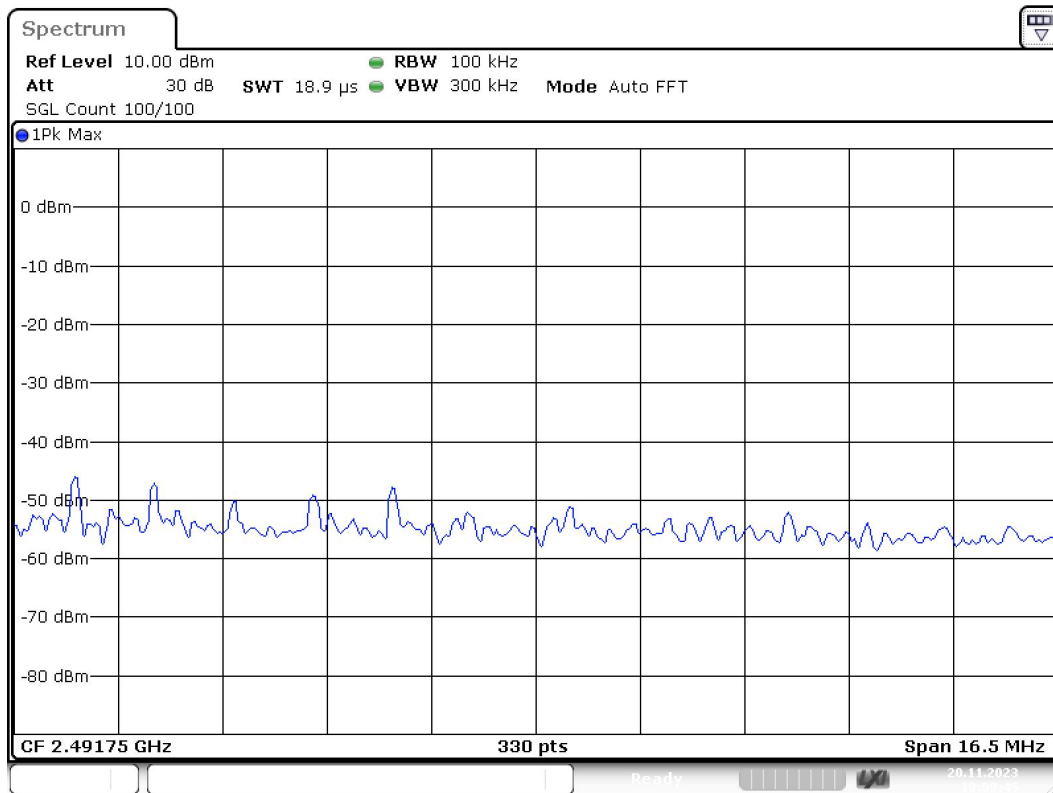
Connector1

Band Edge Connector 1_0



Date: 20.NOV.2023 10:09:39

Band Edge Connector 1_1



Date: 20.NOV.2023 10:09:46

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 (2452 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
2452.000000	PASS

Final measurements

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

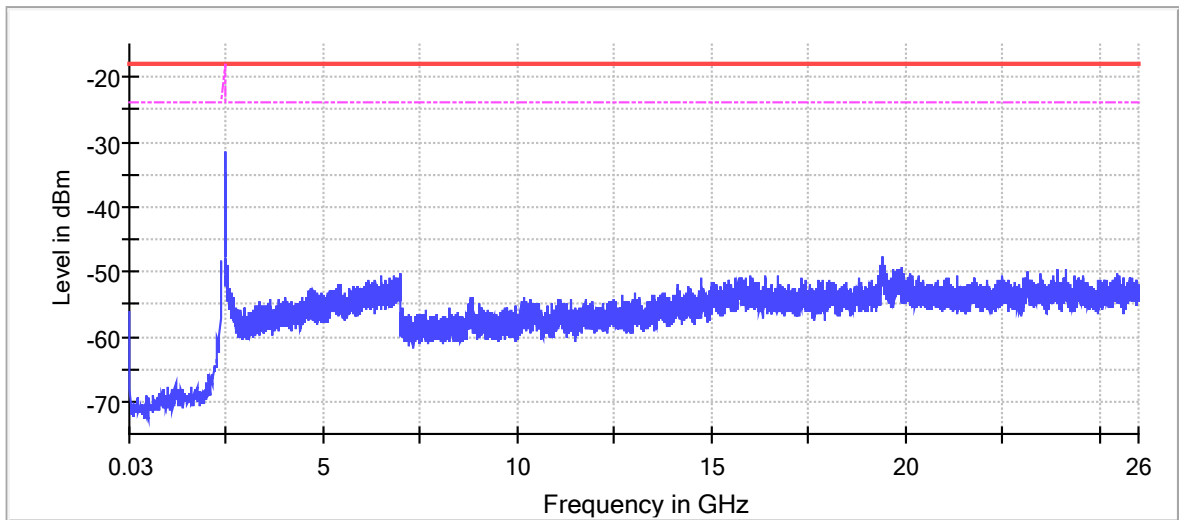
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2484.602301	-31.4	13.6	-17.9
2489.746375	-34.7	16.8	-17.9
2493.420713	-38.4	20.5	-17.9
2486.072037	-38.4	20.5	-17.9
2483.867434	-38.8	20.9	-17.9
2489.011507	-38.9	21.0	-17.9
2485.337169	-39.2	21.3	-17.9
2497.095052	-39.3	21.4	-17.9
2486.806904	-39.6	21.8	-17.9
2494.890449	-39.9	22.0	-17.9
2488.276640	-40.0	22.2	-17.9
2494.155581	-40.6	22.7	-17.9
2483.500000	-40.8	22.9	-17.9
2487.541772	-40.8	23.0	-17.9
2491.950978	-40.9	23.0	-17.9

Measurement Settings

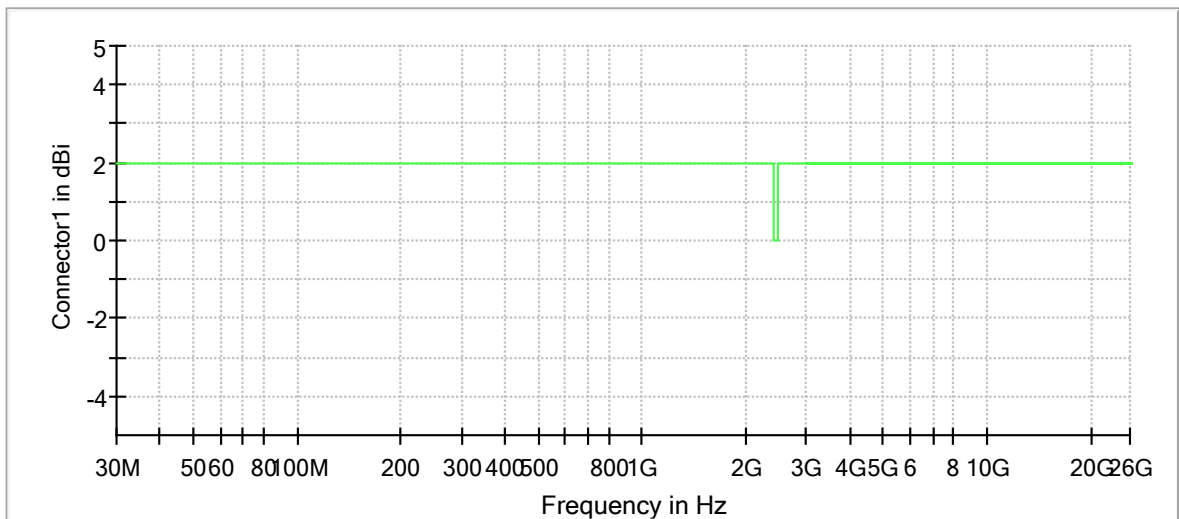
Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2483.500000	26000.000000	2	2

Spurious

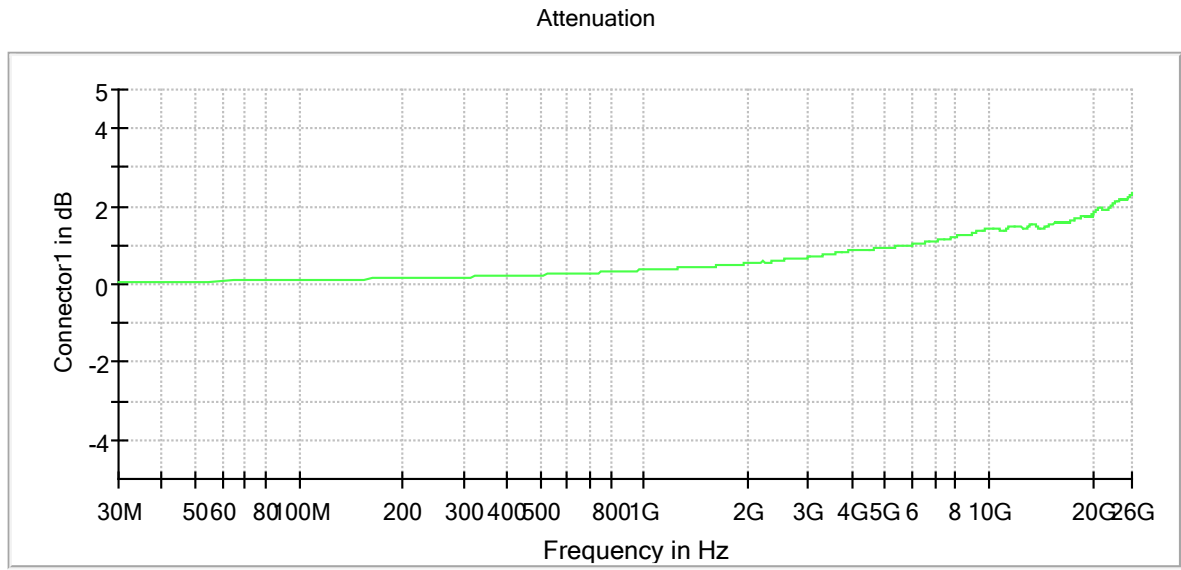


— Limit — Sum Level - - - Threshold × Critical × Final Critical

Gain

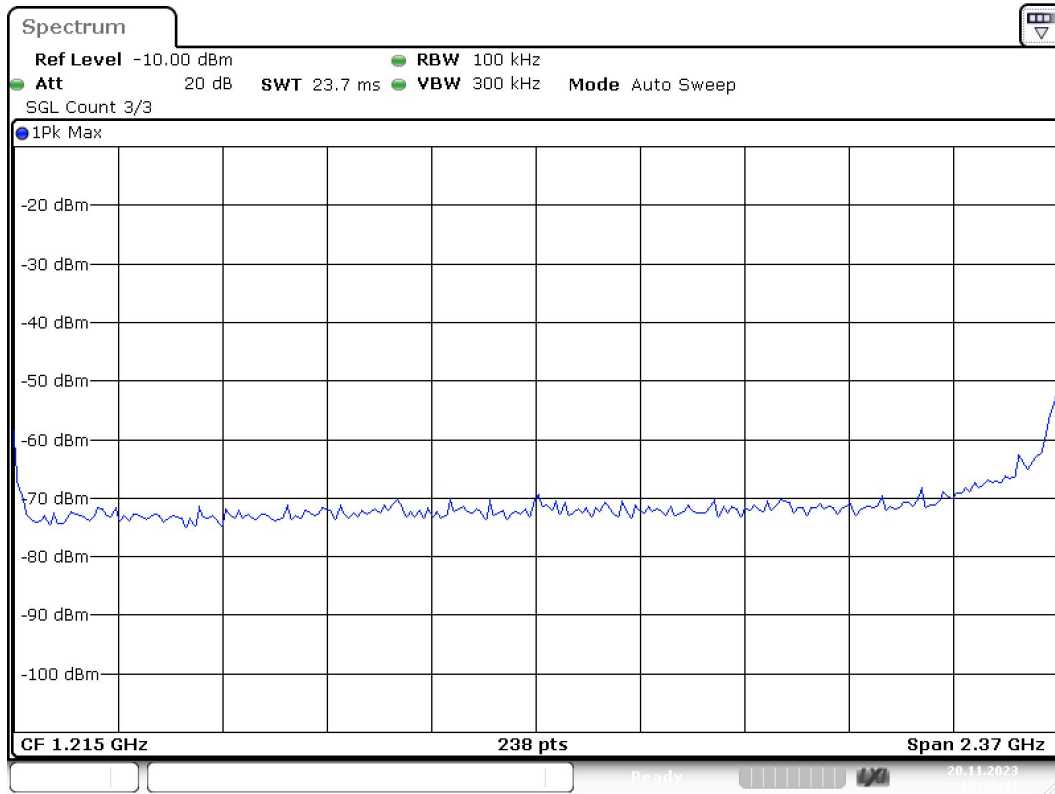


— Connector1



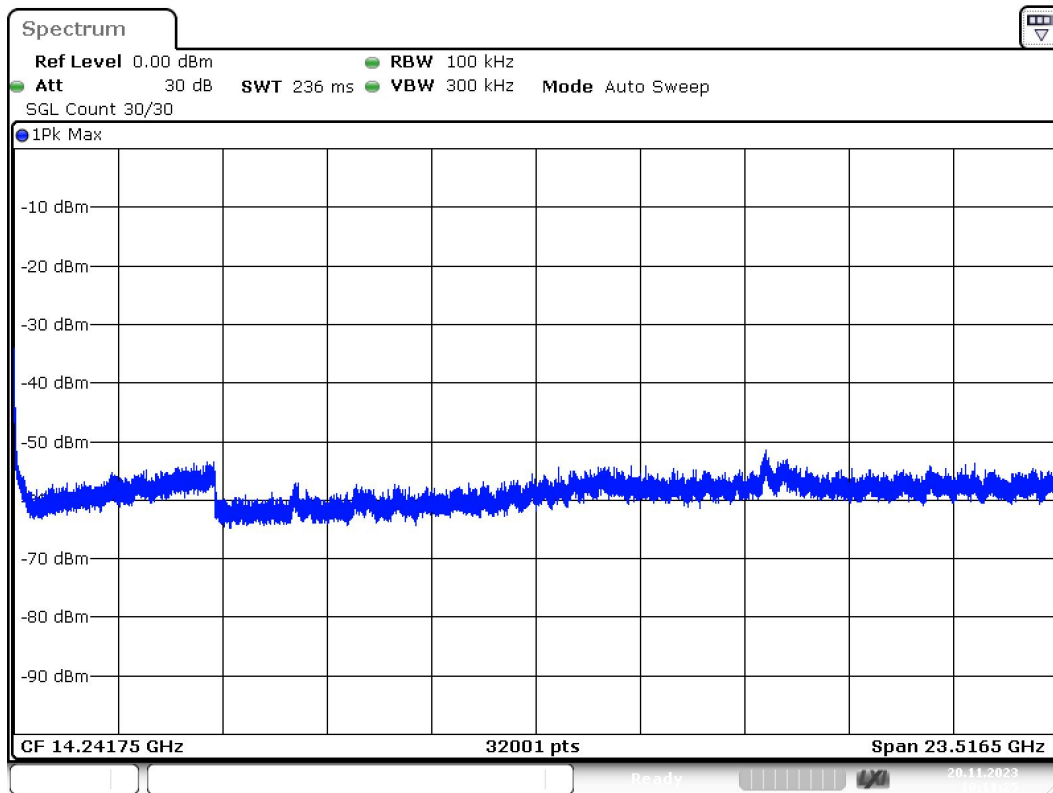
— Connector1

Spurious Connector 1_0



Date: 20.NOV.2023 10:10:41

Spurious Connector 1_1



Date: 20.NOV.2023 10:11:25

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
SweepTime	23.700 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

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	0.000 dBm	-30.000 dBm
Attenuation	30.000 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