

# FCC Part 47 §15.247 2400-2483.5 MHz 2015

## DUT Information

### Frequencies

BT CH 0 (2402 MHz)	BT CH 1 (2403 MHz)	BT CH 2 (2404 MHz)
BT CH 3 (2405 MHz)	BT CH 4 (2406 MHz)	BT CH 5 (2407 MHz)
BT CH 6 (2408 MHz)	BT CH 7 (2409 MHz)	BT CH 8 (2410 MHz)
BT CH 9 (2411 MHz)	BT CH 10 (2412 MHz)	BT CH 11 (2413 MHz)
BT CH 12 (2414 MHz)	BT CH 13 (2415 MHz)	BT CH 14 (2416 MHz)
BT CH 15 (2417 MHz)	BT CH 16 (2418 MHz)	BT CH 17 (2419 MHz)
BT CH 18 (2420 MHz)	BT CH 19 (2421 MHz)	BT CH 20 (2422 MHz)
BT CH 21 (2423 MHz)	BT CH 22 (2424 MHz)	BT CH 23 (2425 MHz)
BT CH 24 (2426 MHz)	BT CH 25 (2427 MHz)	BT CH 26 (2428 MHz)
BT CH 27 (2429 MHz)	BT CH 28 (2430 MHz)	BT CH 29 (2431 MHz)
BT CH 30 (2432 MHz)	BT CH 31 (2433 MHz)	BT CH 32 (2434 MHz)
BT CH 33 (2435 MHz)	BT CH 34 (2436 MHz)	BT CH 35 (2437 MHz)
BT CH 36 (2438 MHz)	BT CH 37 (2439 MHz)	BT CH 38 (2440 MHz)
BT CH 39 (2441 MHz)	BT CH 40 (2442 MHz)	BT CH 41 (2443 MHz)
BT CH 42 (2444 MHz)	BT CH 43 (2445 MHz)	BT CH 44 (2446 MHz)
BT CH 45 (2447 MHz)	BT CH 46 (2448 MHz)	BT CH 47 (2449 MHz)
BT CH 48 (2450 MHz)	BT CH 49 (2451 MHz)	BT CH 50 (2452 MHz)
BT CH 51 (2453 MHz)	BT CH 52 (2454 MHz)	BT CH 53 (2455 MHz)
BT CH 54 (2456 MHz)	BT CH 55 (2457 MHz)	BT CH 56 (2458 MHz)
BT CH 57 (2459 MHz)	BT CH 58 (2460 MHz)	BT CH 59 (2461 MHz)
BT CH 60 (2462 MHz)	BT CH 61 (2463 MHz)	BT CH 62 (2464 MHz)
BT CH 63 (2465 MHz)	BT CH 64 (2466 MHz)	BT CH 65 (2467 MHz)
BT CH 66 (2468 MHz)	BT CH 67 (2469 MHz)	BT CH 68 (2470 MHz)
BT CH 69 (2471 MHz)	BT CH 70 (2472 MHz)	BT CH 71 (2473 MHz)
BT CH 72 (2474 MHz)	BT CH 73 (2475 MHz)	BT CH 74 (2476 MHz)
BT CH 75 (2477 MHz)	BT CH 76 (2478 MHz)	BT CH 77 (2479 MHz)
BT CH 78 (2480 MHz)		

### Bandwidths

1 MHz (1 MHz)	2 MHz (2 MHz)	3 MHz (3 MHz)
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### Power

0.000 dBm (0 dBm)

### Beamforming Gain

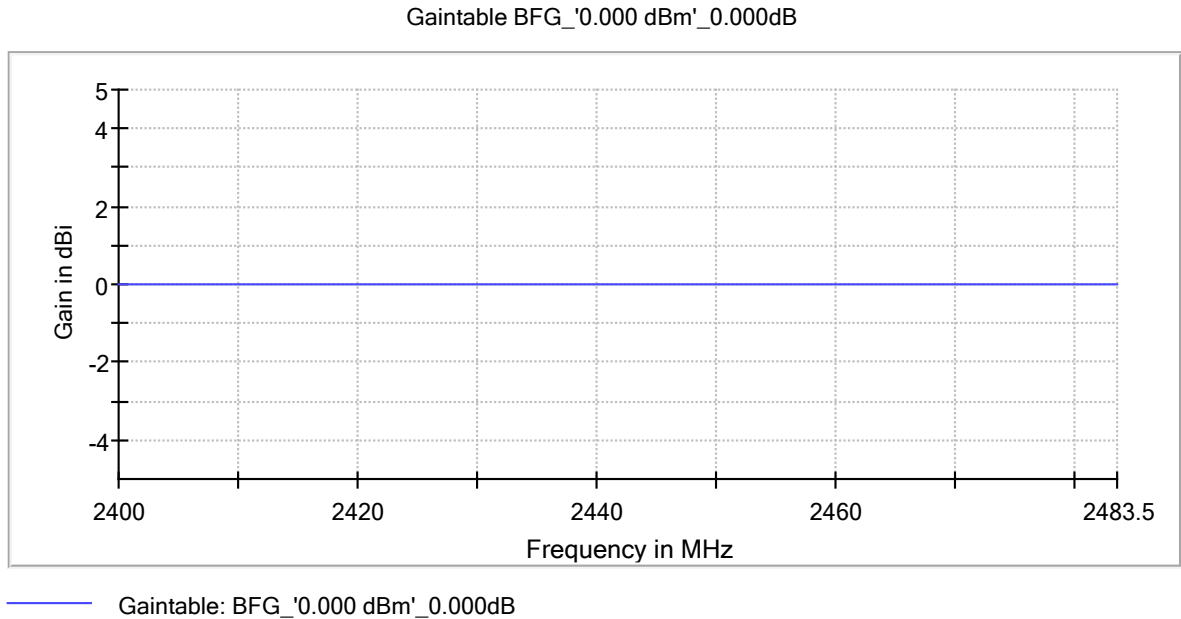
Powerstep name (value)	Beamforming gain table names
0.000 dBm (0 dBm)	BFG_'0.000 dBm'_0.000dB;

### Gain Tables

Powerstep name (value)	Gain table names
0.000 dBm (0 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 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 (SMB100A) @ VISA (ADR  
TCPIP::192.168.48.28::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  
1.27.0.0

## Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Minimum Emission Bandwidth 6 dB	2405.000	0.0	3.000000	PASS
Emission Bandwidth 20 dB	2405.000	0.0	3.000000	PASS
RF output power	2405.000	0.0	3.000000	PASS
Peak Power Spectral Density	2405.000	0.0	3.000000	PASS
Band Edge low	2405.000	0.0	3.000000	PASS
Tx Spurious Emission	2405.000	0.0	3.000000	PASS
Emission Bandwidth 20 dB	2440.000	0.0	3.000000	PASS
Minimum Emission Bandwidth 6 dB	2440.000	0.0	3.000000	PASS
RF output power	2440.000	0.0	3.000000	PASS
Peak Power Spectral Density	2440.000	0.0	3.000000	PASS
Tx Spurious Emission	2440.000	0.0	3.000000	PASS
Emission Bandwidth 20 dB	2480.000	0.0	3.000000	PASS
Minimum Emission Bandwidth 6 dB	2480.000	0.0	3.000000	PASS
RF output power	2480.000	0.0	3.000000	PASS
Peak Power Spectral Density	2480.000	0.0	3.000000	PASS
Band Edge high	2480.000	0.0	3.000000	PASS
Tx Spurious Emission	2480.000	0.0	3.000000	PASS

## Minimum Emission Bandwidth 6 dB (2405 MHz; 0.000 dBm; 3 MHz)

Customized settings.

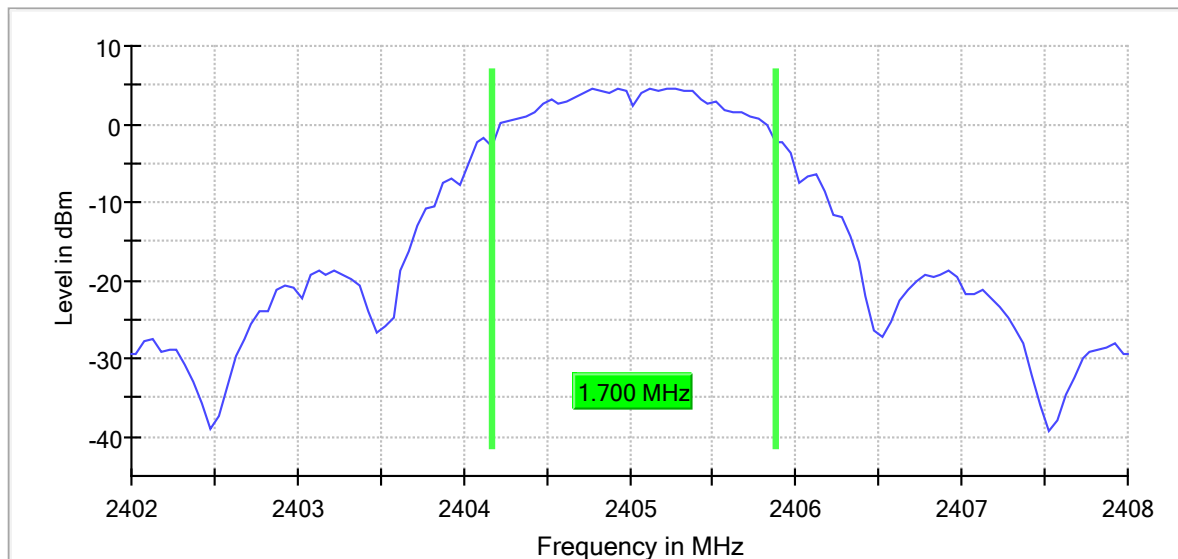
### 6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2405.000000	1.700000	0.500000	---	2404.175000	2405.875000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2405.000000	4.6	PASS

6 dB Bandwidth



### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40200 GHz	2.40200 GHz
Stop Frequency	2.40800 GHz	2.40800 GHz
Span	6.000 MHz	6.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	120	~ 120
Sweeptime	18.984 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 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 (2405 MHz; 0.000 dBm; 3 MHz)

Customized settings.

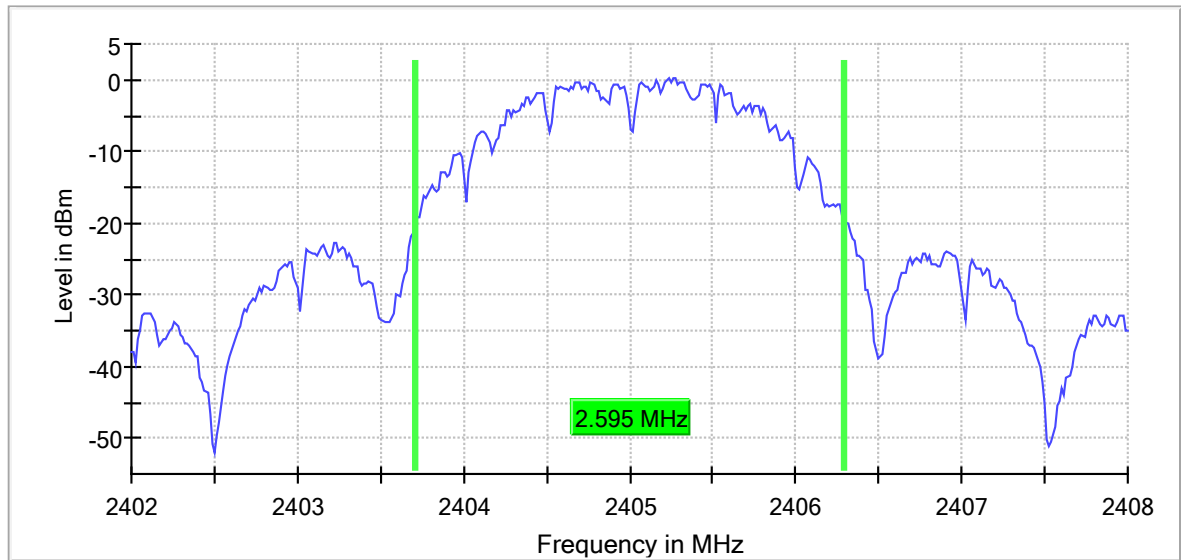
### 20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2405.000000	2.595000	---	---	2403.702500	2406.297500

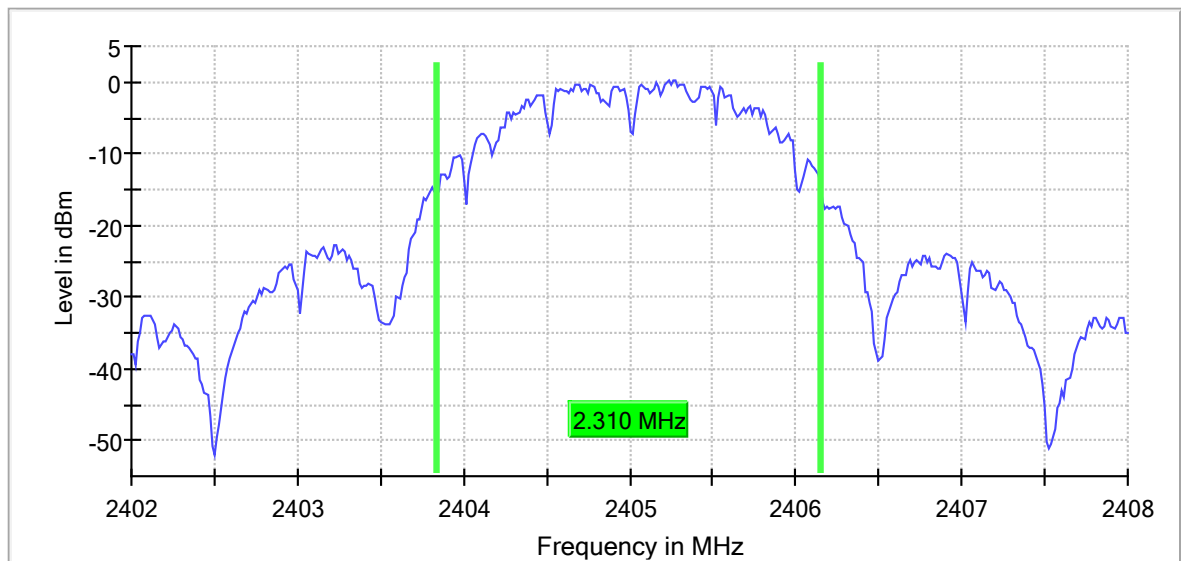
(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2405.000000	0.3	PASS

20 dB Bandwidth



99 % Bandwidth



## Measurement

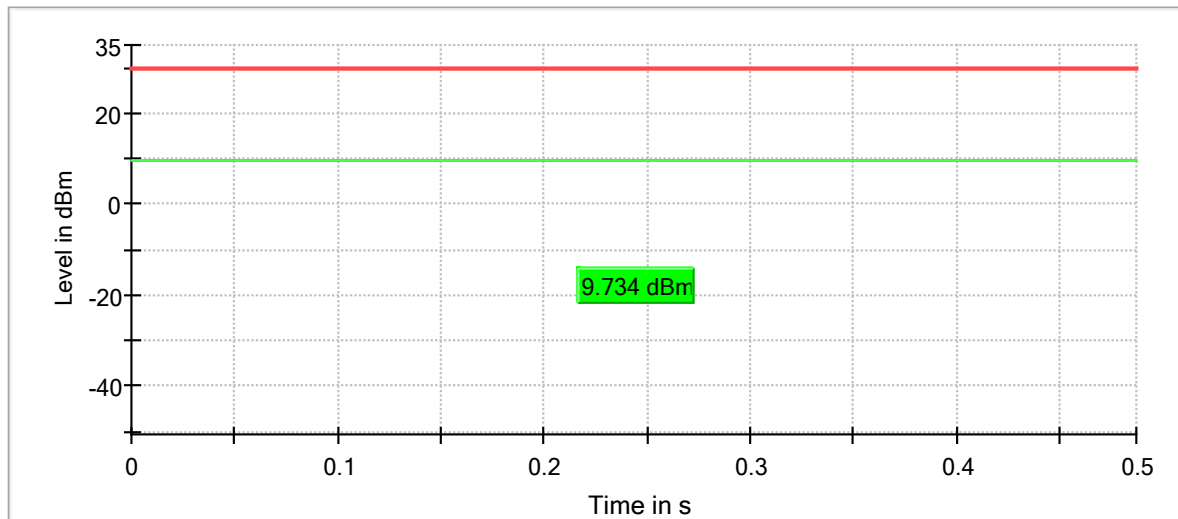
Setting	Instrument Value	Target Value
Start Frequency	2.40200 GHz	2.40200 GHz
Stop Frequency	2.40800 GHz	2.40800 GHz
Span	6.000 MHz	6.000 MHz
RBW	30.000 kHz	>= 30.000 kHz
VBW	100.000 kHz	>= 90.000 kHz
SweepPoints	400	~ 400
SweepTime	63.216 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 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 (2405 MHz; 0.000 dBm; 3 MHz)

### Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2405.000000	9.7	30.0	9.7	48.922	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 µs	1.000 µs

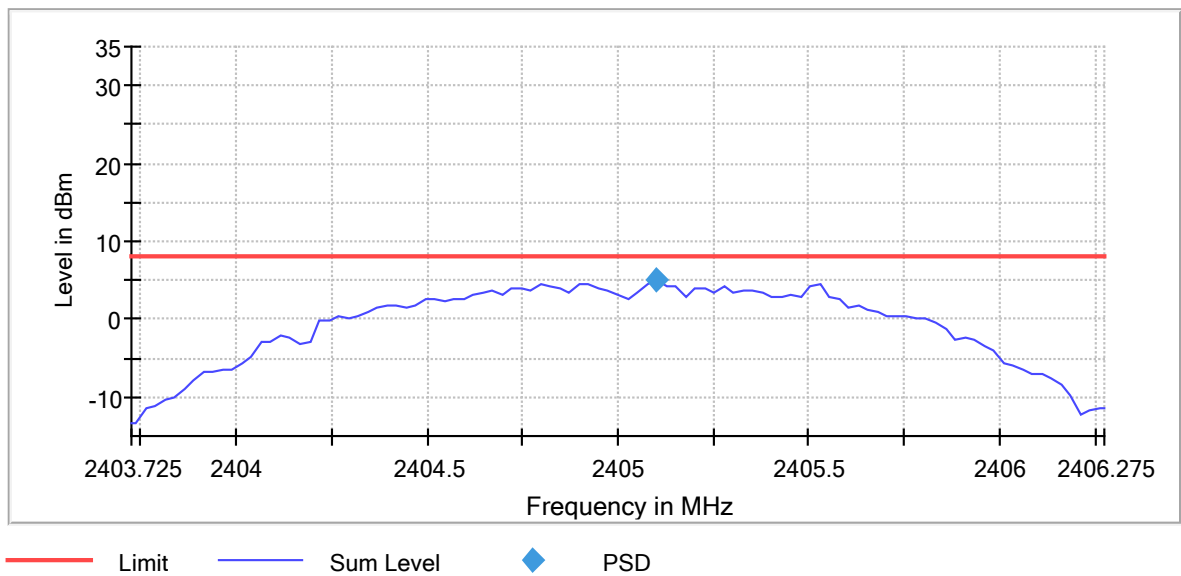
## Peak Power Spectral Density (2405 MHz; 0.000 dBm; 3 MHz)

Customized settings.

### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2405.000000	2405.100990	4.934	8.0	PASS

Peak Power Spectral Density



### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40373 GHz	2.40373 GHz
Stop Frequency	2.40628 GHz	2.40628 GHz
Span	2.550 MHz	2.550 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 51
Sweeptime	1.000 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 (2405 MHz; 0.000 dBm; 3 MHz)

Customized settings.

### Result

DUT Frequency (MHz)	Result
2405.000000	PASS

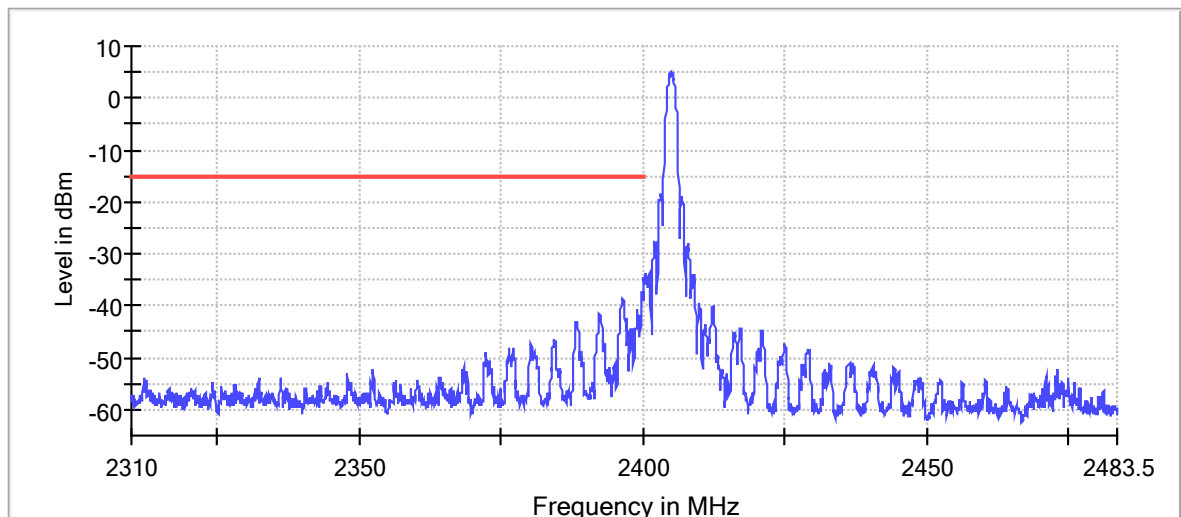
### Inband Peak

Frequency (MHz)	Level (dBm)
2405.075000	5.2

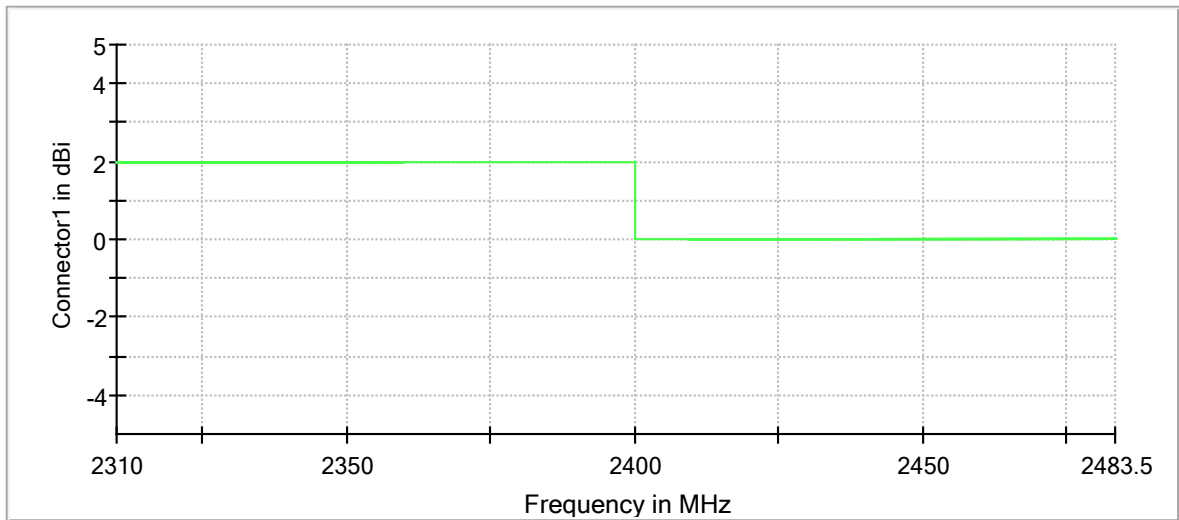
### Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2399.975000	-37.3	22.2	-15.1	PASS
2399.925000	-37.5	22.5	-15.1	PASS
2399.875000	-38.2	23.1	-15.1	PASS
2396.525000	-38.6	23.5	-15.1	PASS
2396.475000	-38.6	23.5	-15.1	PASS
2396.575000	-38.8	23.8	-15.1	PASS
2396.425000	-38.9	23.8	-15.1	PASS
2396.625000	-39.2	24.1	-15.1	PASS
2396.375000	-39.2	24.2	-15.1	PASS
2396.325000	-39.4	24.3	-15.1	PASS
2396.675000	-39.4	24.4	-15.1	PASS
2396.275000	-39.5	24.4	-15.1	PASS
2396.725000	-39.8	24.7	-15.1	PASS
2399.775000	-39.8	24.7	-15.1	PASS
2399.825000	-39.8	24.7	-15.1	PASS

Band Edge

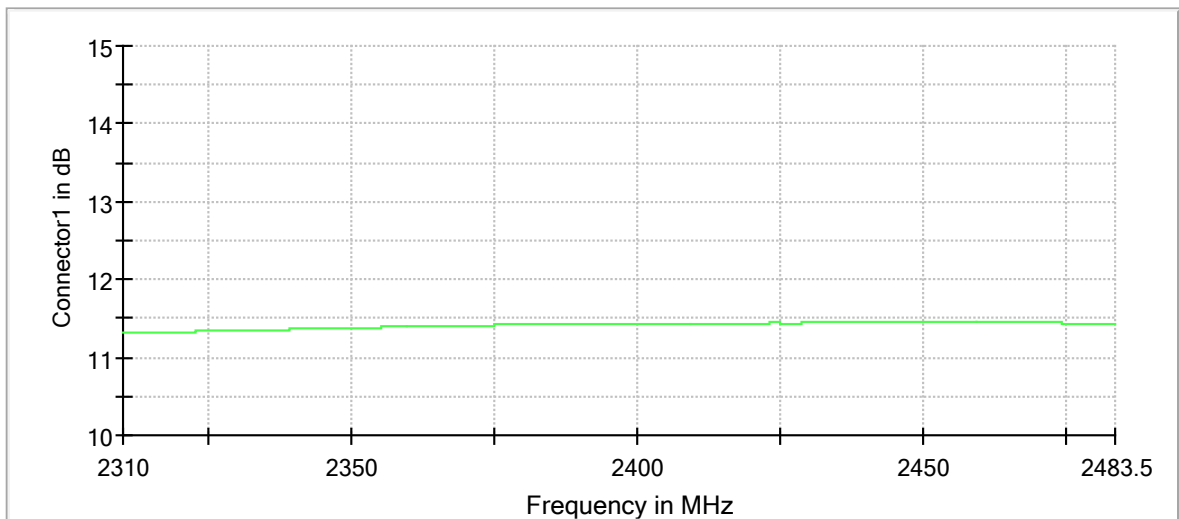


Gain



Connector1

Attenuation



Connector1

### 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	7 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.03 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 $\mu$ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.23 dB	0.50 dB

## Tx Spurious Emission (2405 MHz; 0.000 dBm; 3 MHz)

Customized settings.

### Result

DUT Frequency (MHz)	Result
2405.000000	PASS

### Final measurements

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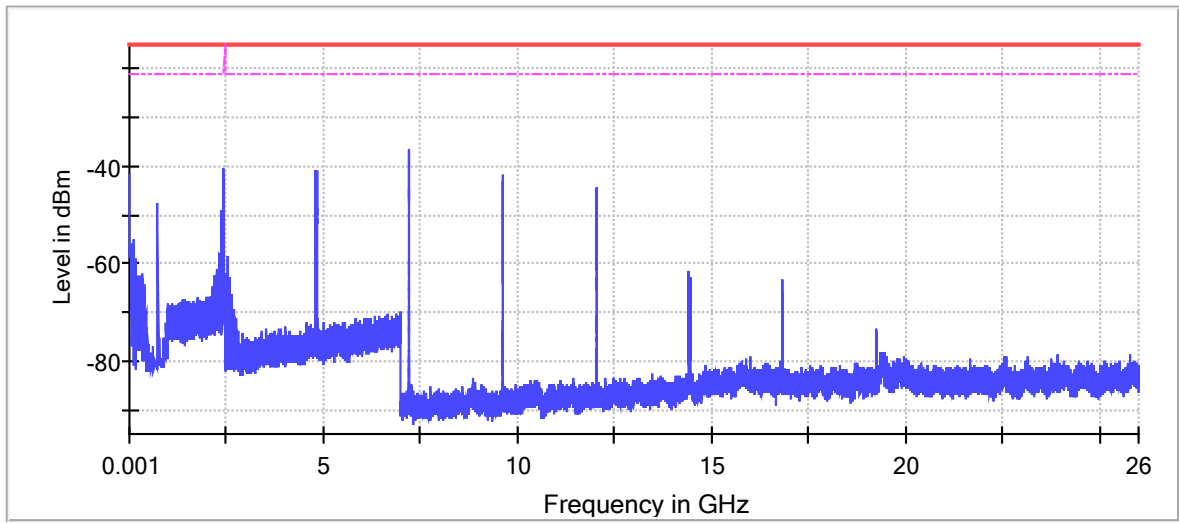
### Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
7216.383863	-36.3	21.3	-15.1
7213.977688	-36.9	21.8	-15.1
7213.633949	-36.9	21.9	-15.1
7216.727602	-38.1	23.1	-15.1
7216.040124	-39.0	24.0	-15.1
2399.975000	-40.4	25.4	-15.1
7213.290210	-40.5	25.4	-15.1
7214.321427	-40.6	25.5	-15.1
4809.071974	-40.8	25.7	-15.1
4811.047881	-40.9	25.8	-15.1
2399.925000	-41.6	26.5	-15.1
9618.090060	-41.7	26.6	-15.1
5.945545	-41.8	26.7	-15.1
1.000000	-41.8	26.8	-15.1
2399.825000	-41.9	26.8	-15.1

### Measurement Settings

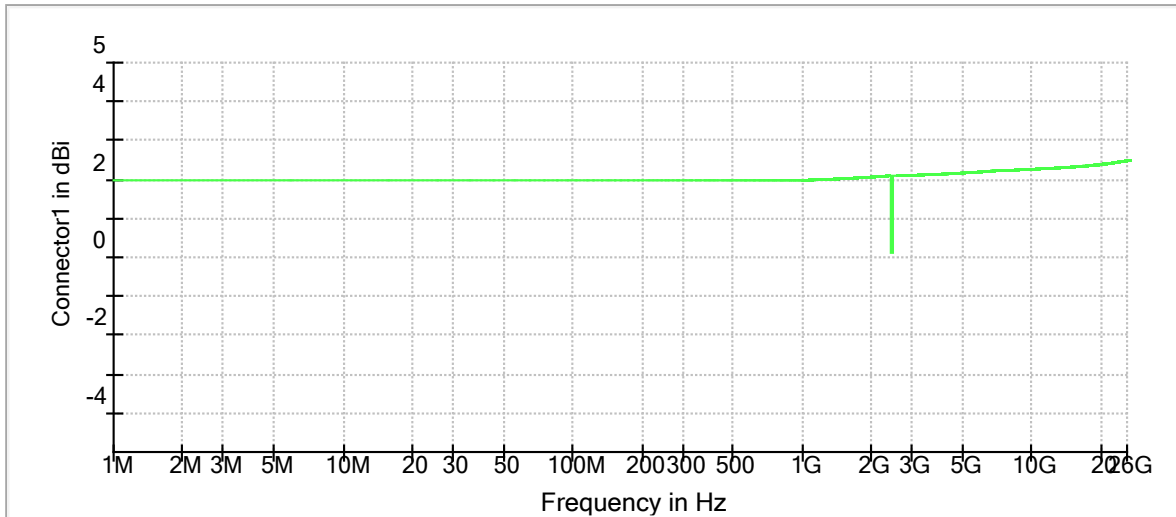
Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
1.000000	1000.000000	1	1
1000.000000	2400.000000	2	2
2483.500000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2

Spurious



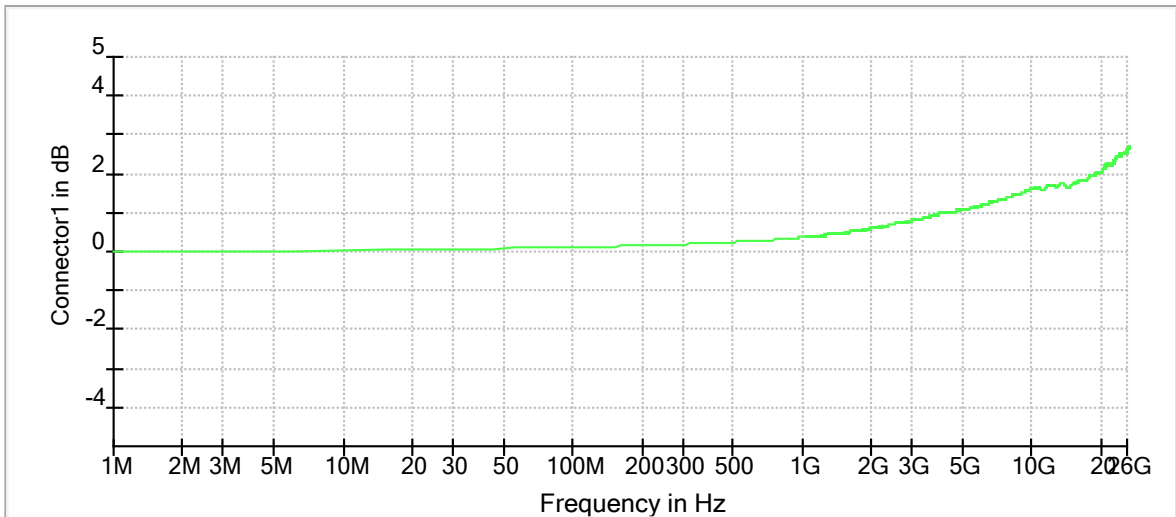
— Limit    — Sum Level    - - - Threshold    × Critical    × Final Critical

Gain



Connector1

Attenuation



Connector1

### 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	-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 (2440 MHz; 0.000 dBm; 3 MHz)

Customized settings.

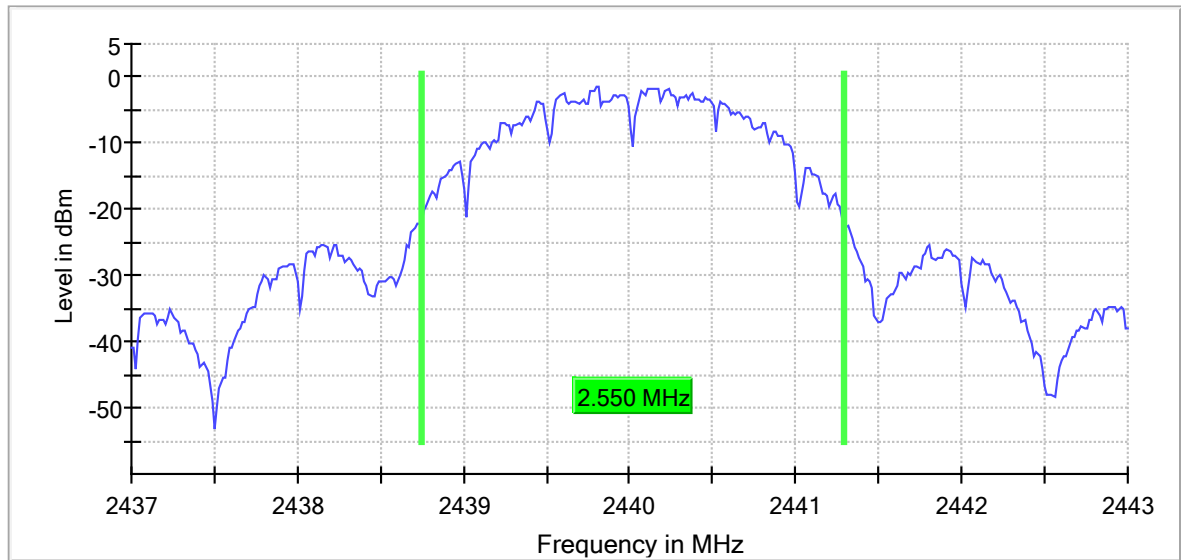
### 20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2440.000000	2.550000	---	---	2438.747500	2441.297500

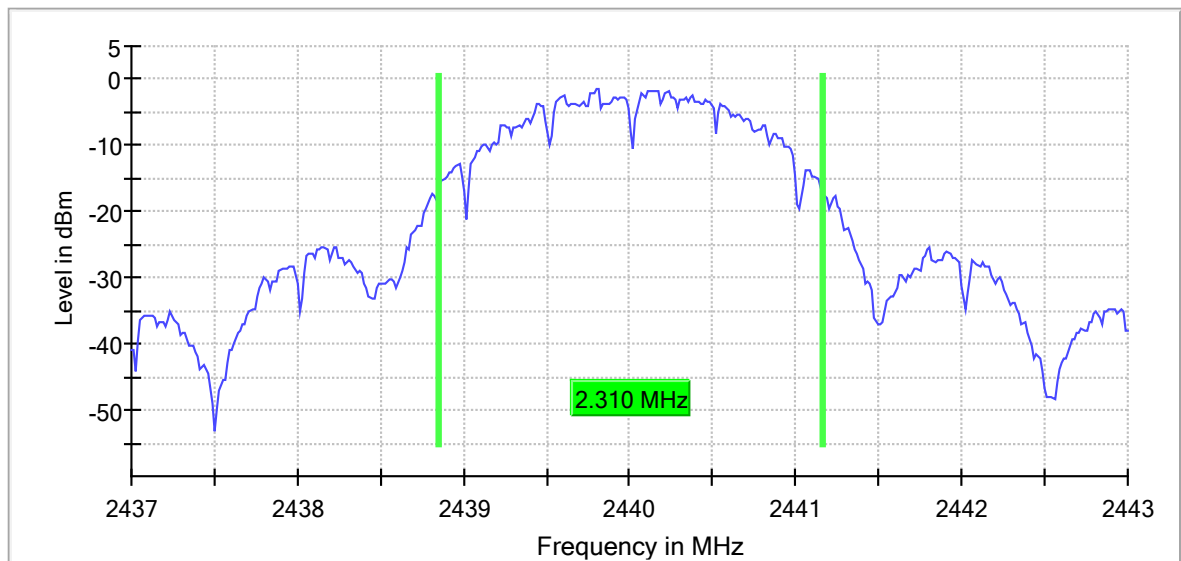
(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2440.000000	-1.4	PASS

20 dB Bandwidth



99 % Bandwidth



## Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.43700 GHz	2.43700 GHz
Stop Frequency	2.44300 GHz	2.44300 GHz
Span	6.000 MHz	6.000 MHz
RBW	30.000 kHz	>= 30.000 kHz
VBW	100.000 kHz	>= 90.000 kHz
SweepPoints	400	~ 400
SweepTime	63.216 $\mu$ s	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 (2440 MHz; 0.000 dBm; 3 MHz)

Customized settings.

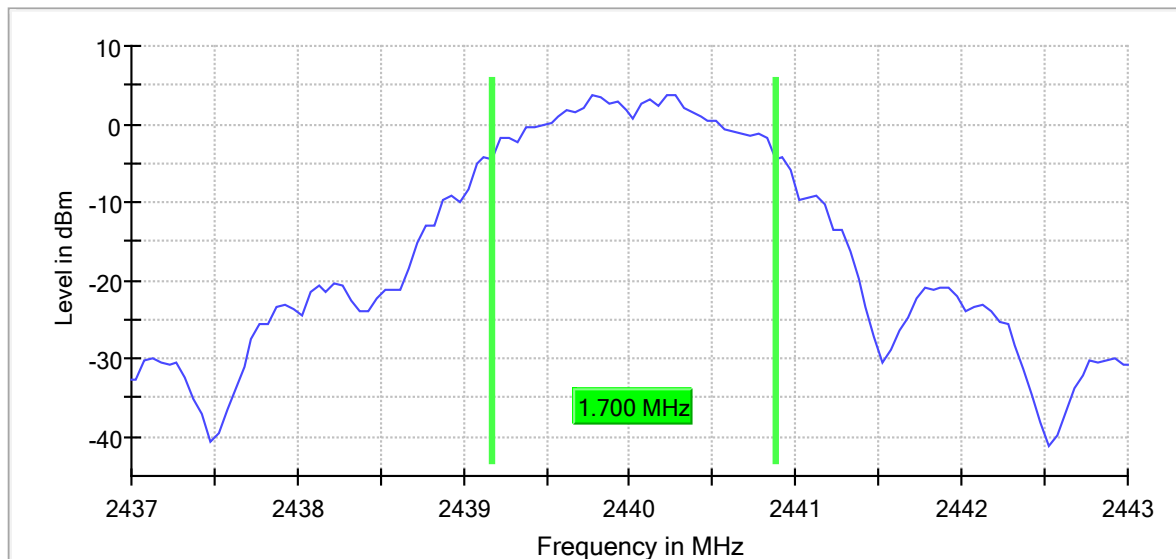
### 6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2440.000000	1.700000	0.500000	---	2439.175000	2440.875000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2440.000000	3.7	PASS

6 dB Bandwidth



### Measurement

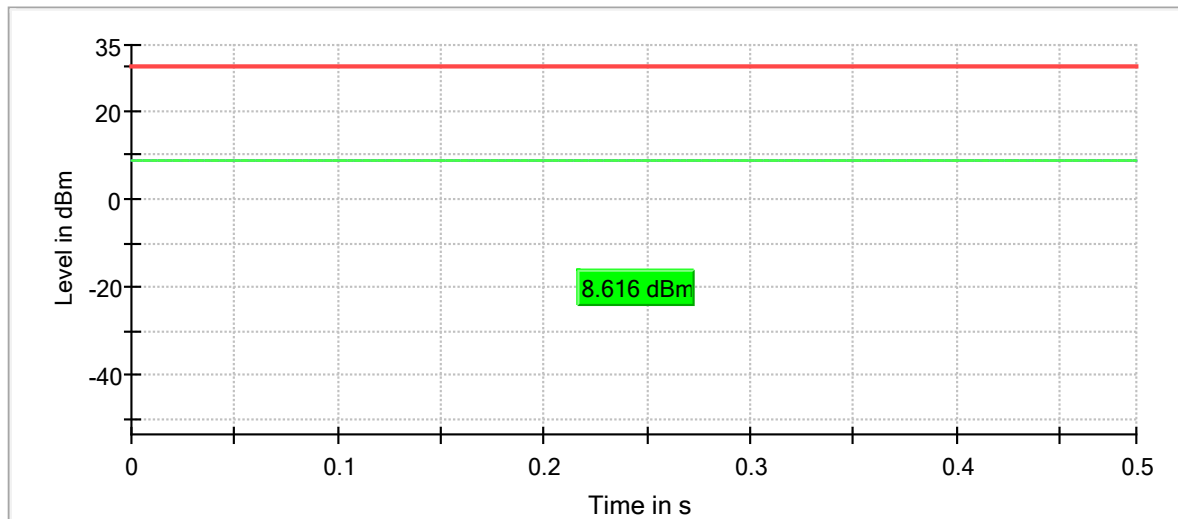
Setting	Instrument Value	Target Value
Start Frequency	2.43700 GHz	2.43700 GHz
Stop Frequency	2.44300 GHz	2.44300 GHz
Span	6.000 MHz	6.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	120	~ 120
Sweeptime	18.984 $\mu$ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	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 (2440 MHz; 0.000 dBm; 3 MHz)

### Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2440.000000	8.6	30.0	8.6	48.916	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 µs	1.000 µs

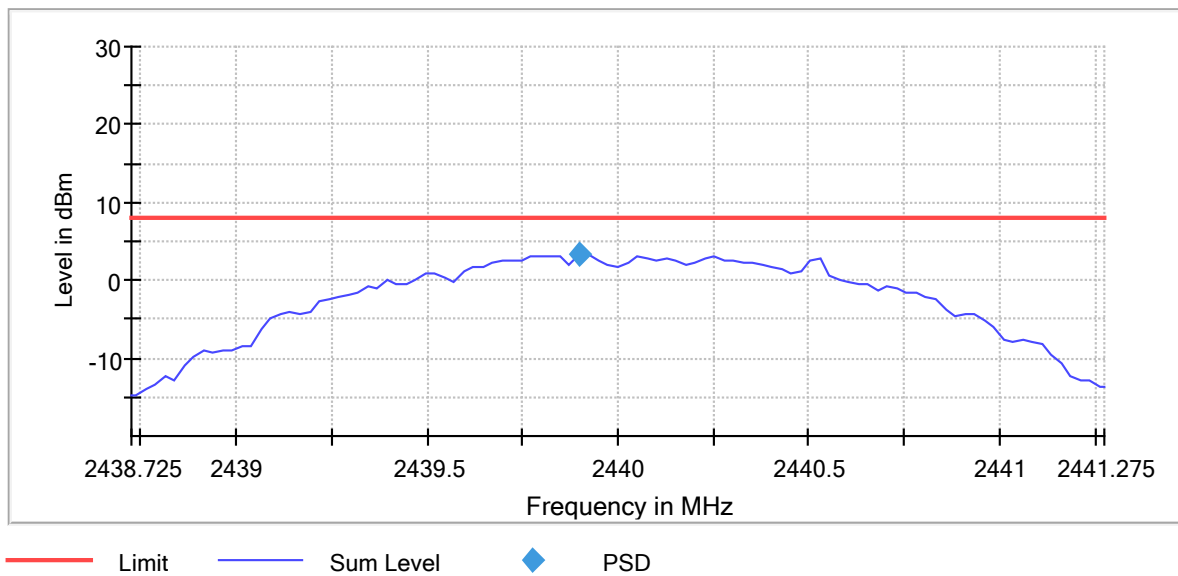
## Peak Power Spectral Density (2440 MHz; 0.000 dBm; 3 MHz)

Customized settings.

### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2440.000000	2439.899010	3.277	8.0	PASS

Peak Power Spectral Density



### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.43873 GHz	2.43873 GHz
Stop Frequency	2.44128 GHz	2.44128 GHz
Span	2.550 MHz	2.550 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 51
Sweeptime	1.000 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

## Tx Spurious Emission (2440 MHz; 0.000 dBm; 3 MHz)

Customized settings.

### Result

DUT Frequency (MHz)	Result
2440.000000	PASS

### Final measurements

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

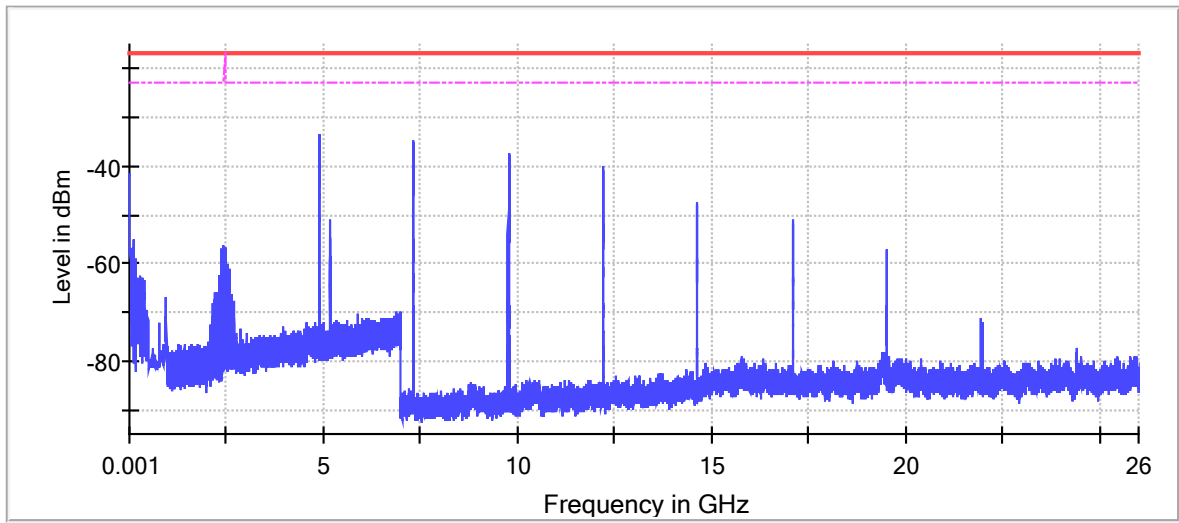
### Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
4881.051444	-33.5	16.7	-16.7
4879.075537	-33.6	16.9	-16.7
7321.224337	-34.9	18.2	-16.7
7318.818162	-35.2	18.5	-16.7
7321.568076	-35.6	18.9	-16.7
4881.192580	-36.8	20.1	-16.7
9762.116809	-37.2	20.5	-16.7
7318.474423	-37.3	20.5	-16.7
4880.486899	-37.3	20.6	-16.7
9757.991938	-37.7	21.0	-16.7
4880.910307	-37.8	21.1	-16.7
4879.216673	-38.0	21.3	-16.7
4880.628035	-38.6	21.8	-16.7
7319.161901	-38.6	21.9	-16.7
4878.934400	-39.3	22.6	-16.7

### Measurement Settings

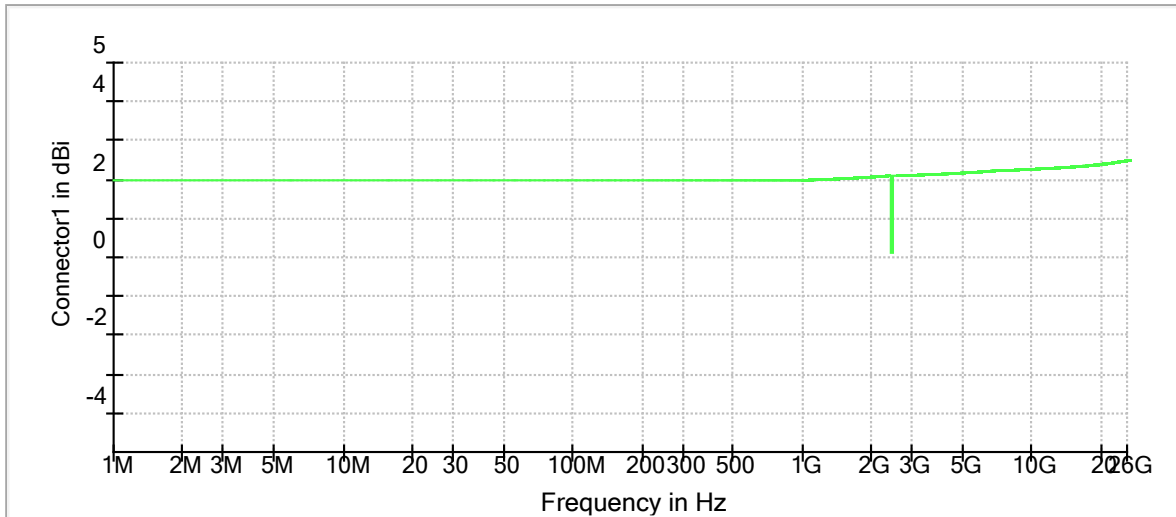
Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
1.000000	1000.000000	1	1
1000.000000	2400.000000	2	2
2483.500000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2

Spurious



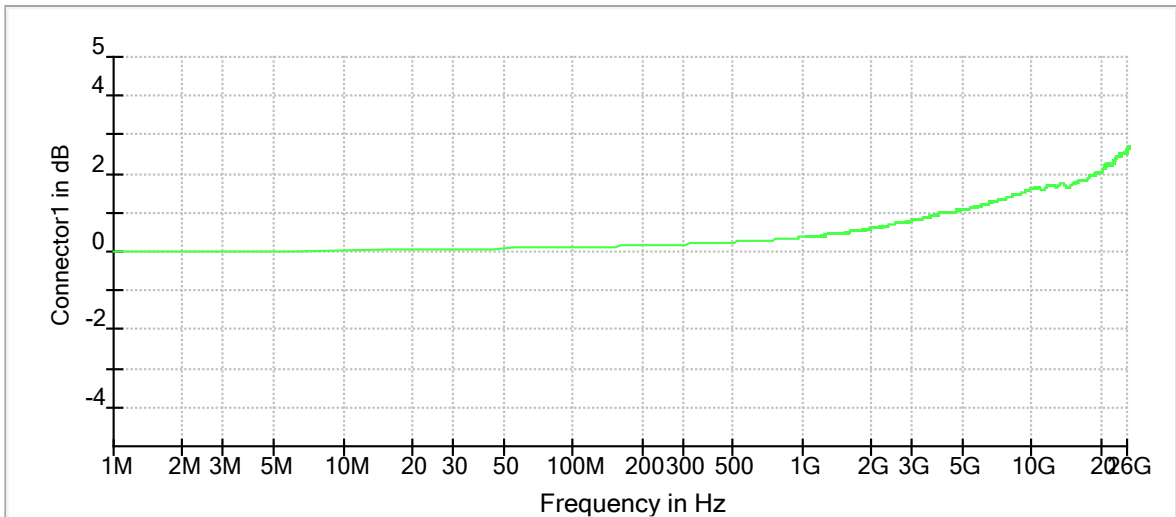
— Limit    — Sum Level    - - - Threshold    × Critical    × Final Critical

Gain



Connector1

Attenuation



Connector1

### 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

## Emission Bandwidth 20 dB (2480 MHz; 0.000 dBm; 3 MHz)

Customized settings.

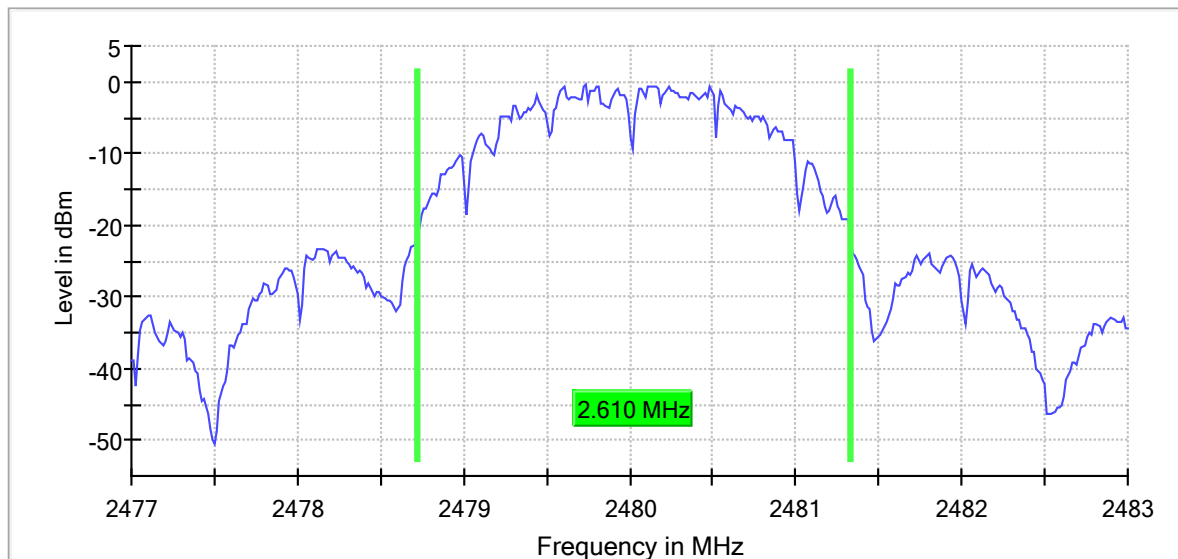
### 20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	2.610000	---	---	2478.717500	2481.327500

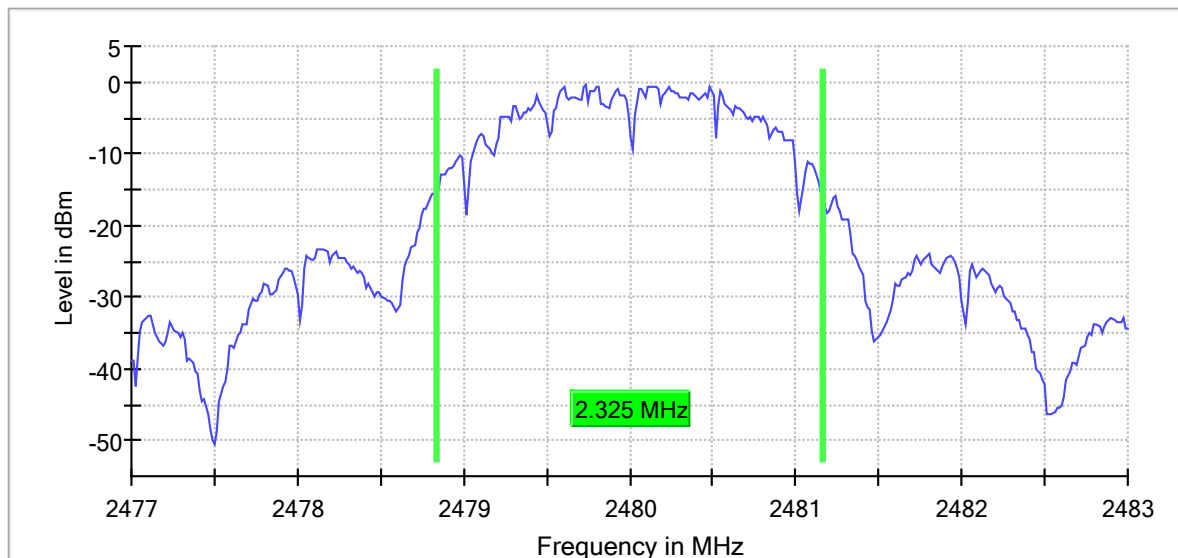
(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-0.5	PASS

20 dB Bandwidth



99 % Bandwidth



## Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47700 GHz	2.47700 GHz
Stop Frequency	2.48300 GHz	2.48300 GHz
Span	6.000 MHz	6.000 MHz
RBW	30.000 kHz	>= 30.000 kHz
VBW	100.000 kHz	>= 90.000 kHz
SweepPoints	400	~ 400
SweepTime	63.216 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 (2480 MHz; 0.000 dBm; 3 MHz)

Customized settings.

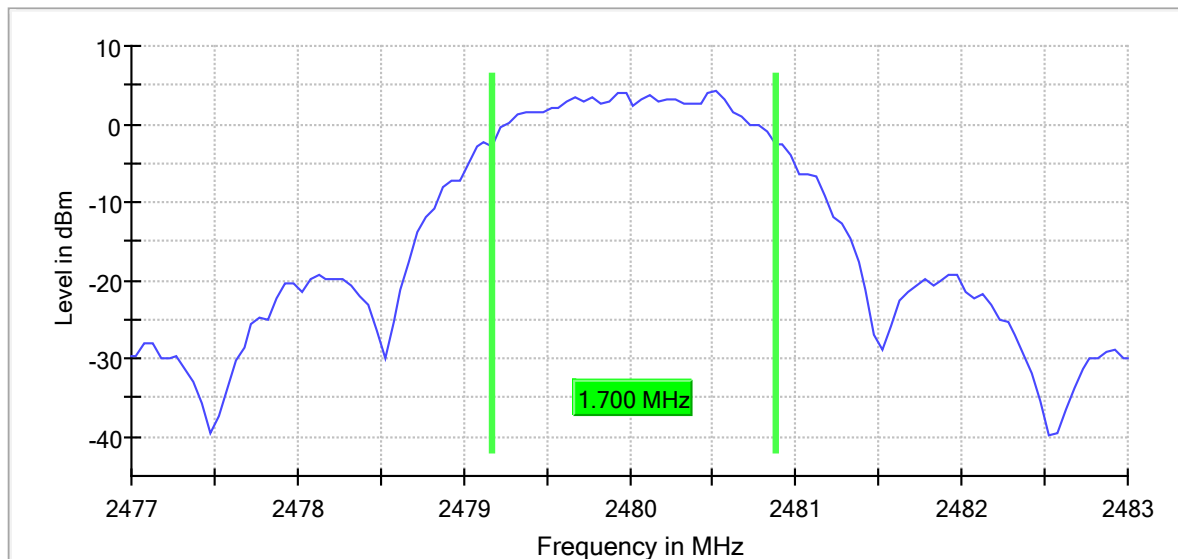
### 6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.700000	0.500000	---	2479.175000	2480.875000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	4.3	PASS

6 dB Bandwidth



### Measurement

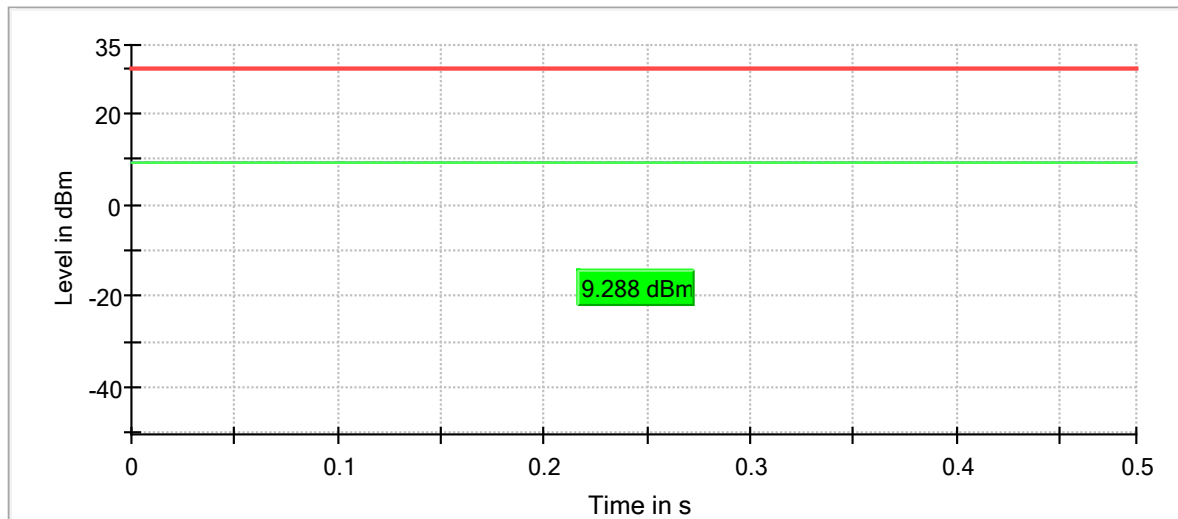
Setting	Instrument Value	Target Value
Start Frequency	2.47700 GHz	2.47700 GHz
Stop Frequency	2.48300 GHz	2.48300 GHz
Span	6.000 MHz	6.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	120	~ 120
Sweeptime	18.984 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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 (2480 MHz; 0.000 dBm; 3 MHz)

### Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2480.000000	9.3	30.0	9.3	48.919	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 $\mu$ s	1.000 $\mu$ s

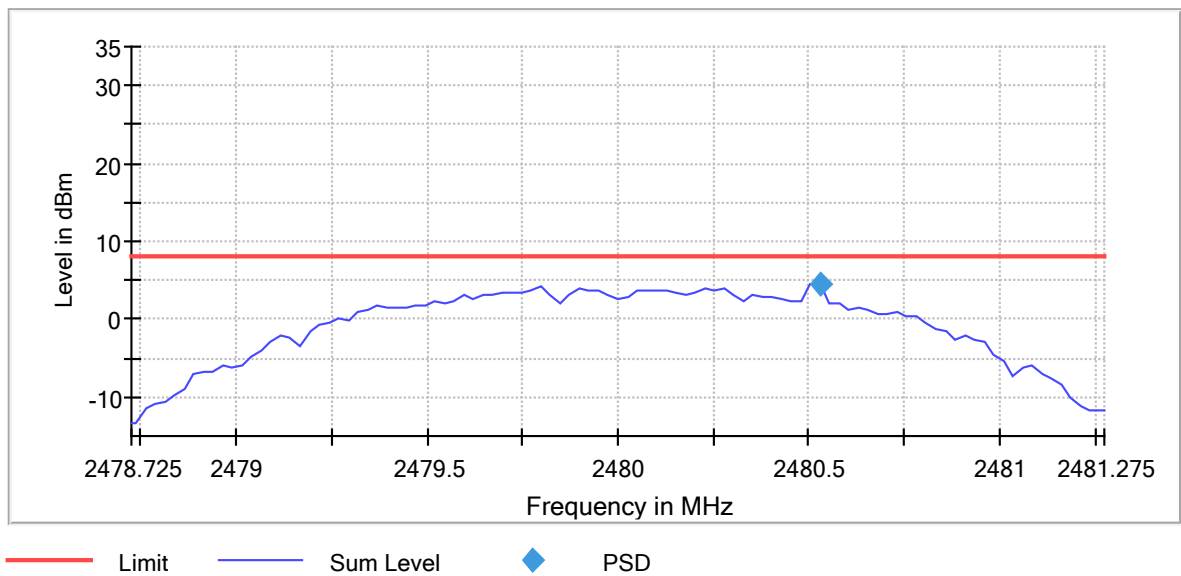
## Peak Power Spectral Density (2480 MHz; 0.000 dBm; 3 MHz)

Customized settings.

### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2480.000000	2480.530198	4.434	8.0	PASS

Peak Power Spectral Density



### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47873 GHz	2.47873 GHz
Stop Frequency	2.48128 GHz	2.48128 GHz
Span	2.550 MHz	2.550 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 51
Sweeptime	1.000 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 high (2480 MHz; 0.000 dBm; 3 MHz)

Customized settings.

### Result

DUT Frequency (MHz)	Result
2480.000000	PASS

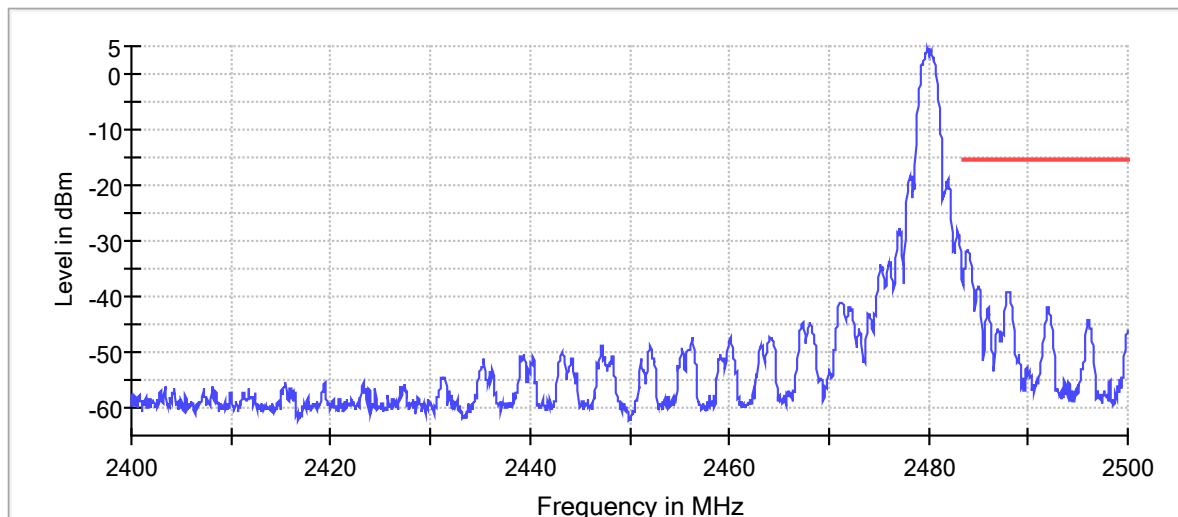
### Inband Peak

Frequency (MHz)	Level (dBm)
2479.975000	4.7

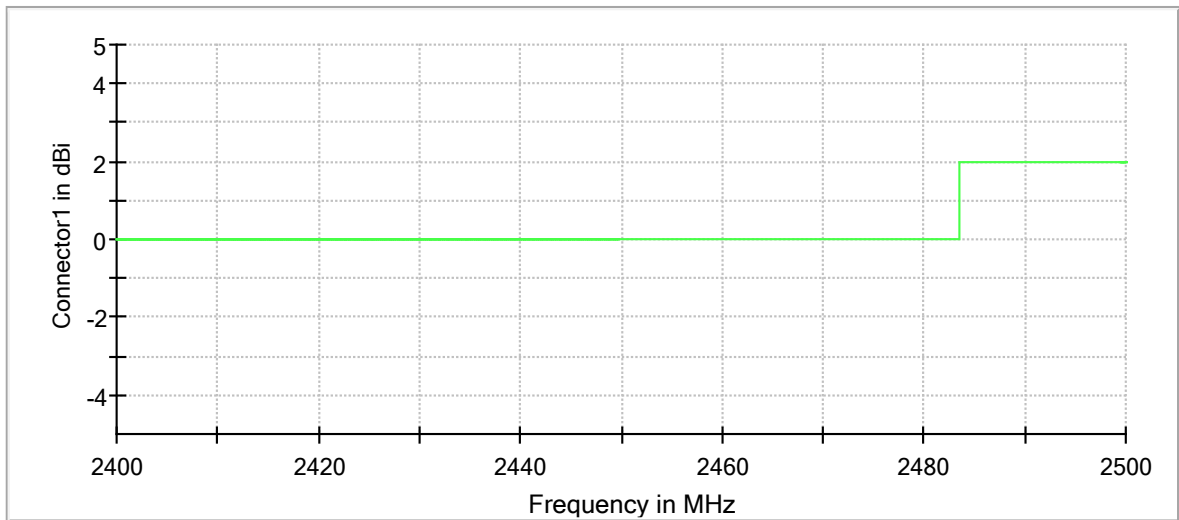
### Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2483.925000	-31.7	16.1	-15.6	PASS
2483.975000	-31.7	16.2	-15.6	PASS
2483.875000	-31.8	16.2	-15.6	PASS
2484.025000	-31.9	16.3	-15.6	PASS
2483.825000	-32.0	16.5	-15.6	PASS
2484.075000	-32.1	16.6	-15.6	PASS
2484.125000	-32.3	16.7	-15.6	PASS
2484.175000	-32.6	17.0	-15.6	PASS
2483.775000	-32.8	17.2	-15.6	PASS
2484.225000	-33.4	17.8	-15.6	PASS
2483.725000	-33.8	18.3	-15.6	PASS
2484.275000	-34.4	18.9	-15.6	PASS
2483.675000	-34.6	19.1	-15.6	PASS
2483.625000	-35.1	19.5	-15.6	PASS
2484.325000	-35.1	19.5	-15.6	PASS

Band Edge

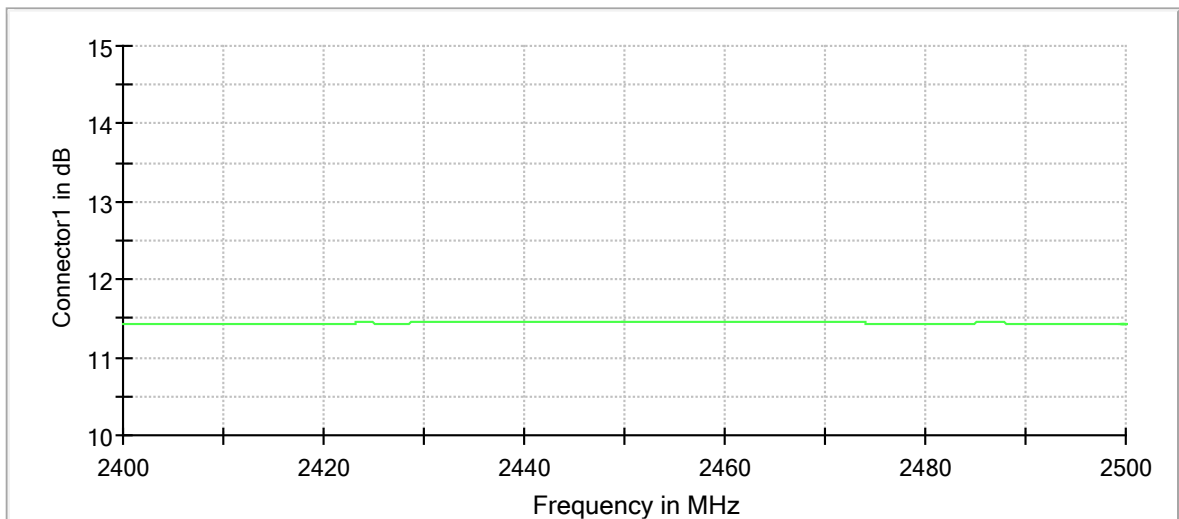


Gain



Connector1

Attenuation



Connector1

### 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	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB

Run	14 / max. 150	max. 150
Stable	3 / 3	3
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 $\mu$ s	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

## Tx Spurious Emission (2480 MHz; 0.000 dBm; 3 MHz)

Customized settings.

### Result

DUT Frequency (MHz)	Result
2480.000000	PASS

### Final measurements

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

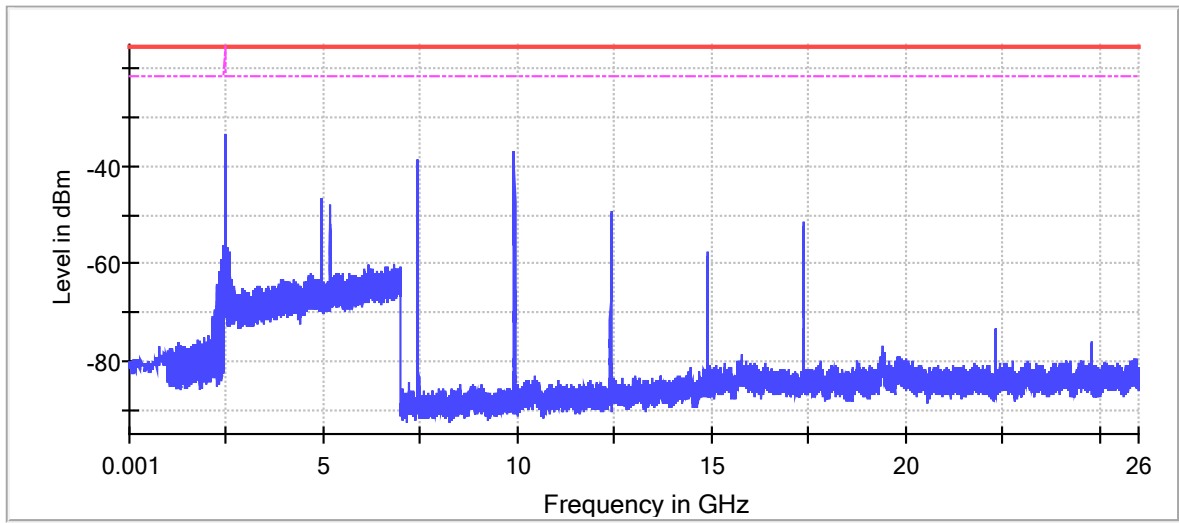
### Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2483.852841	-33.3	17.7	-15.6
2484.135113	-33.7	18.1	-15.6
2483.993977	-33.9	18.3	-15.6
2484.276249	-35.4	19.8	-15.6
9921.955564	-37.1	21.6	-15.6
9918.174432	-37.4	21.8	-15.6
2485.123066	-37.8	22.2	-15.6
2483.570568	-38.0	22.4	-15.6
2483.711704	-38.1	22.5	-15.6
7441.533077	-38.6	23.0	-15.6
9922.299303	-38.7	23.2	-15.6
2484.840794	-38.8	23.2	-15.6
7438.783163	-38.8	23.2	-15.6
2484.981930	-38.9	23.3	-15.6
7441.189338	-39.0	23.4	-15.6

### Measurement Settings

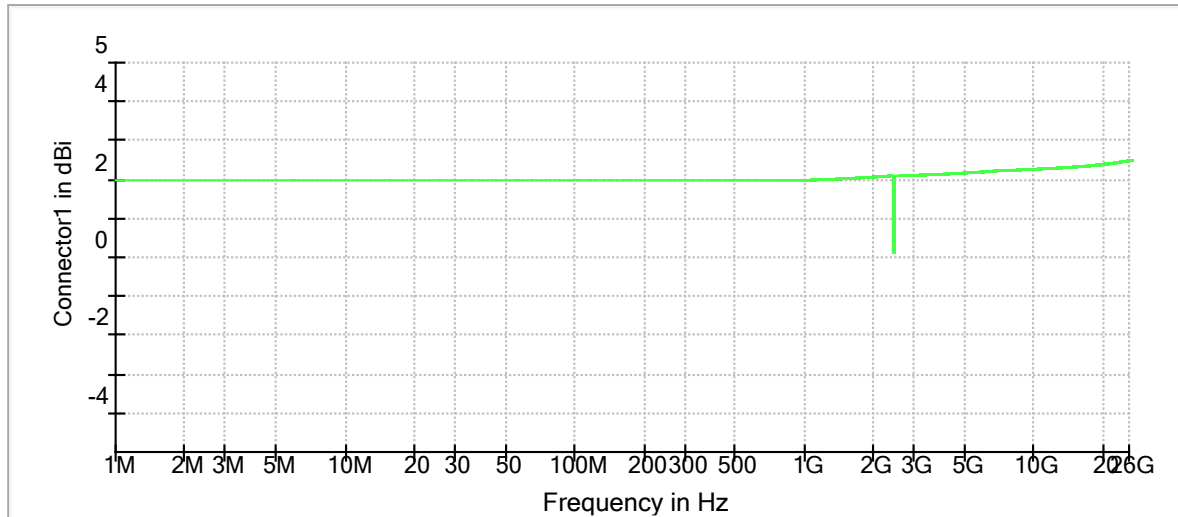
Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
1.000000	1000.000000	1	1
1000.000000	2400.000000	2	2
2483.500000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2

Spurious



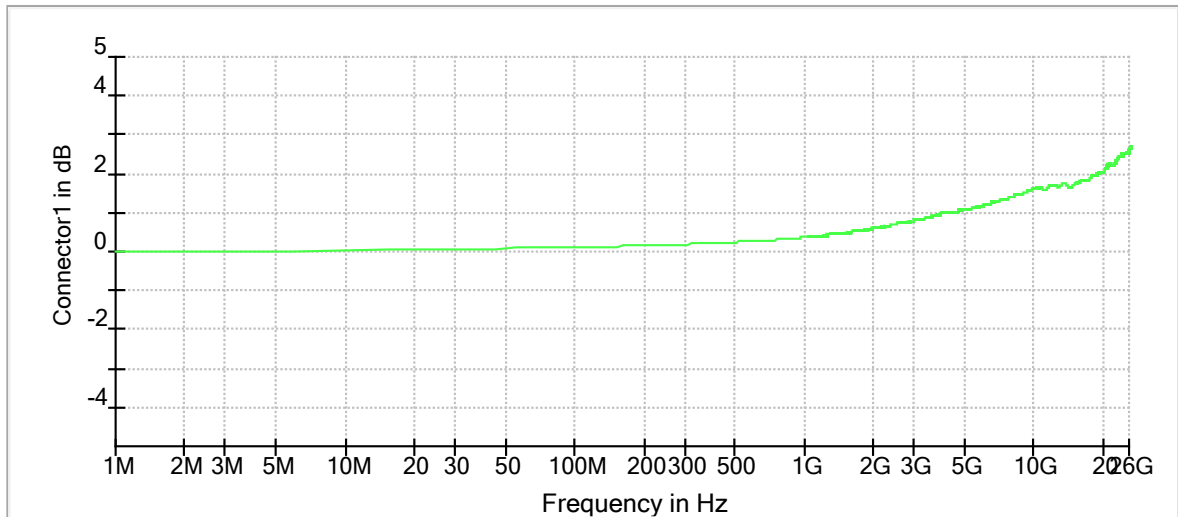
— Limit    — Sum Level    - - - Threshold    × Critical    × Final Critical

Gain



Connector1

Attenuation



Connector1

### 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