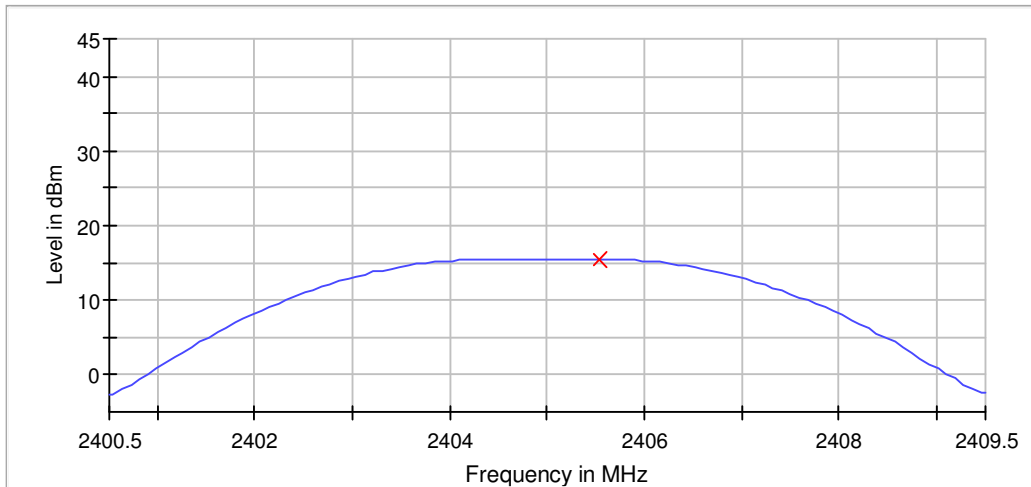


## 9 Appendix

### Appendix 15.247

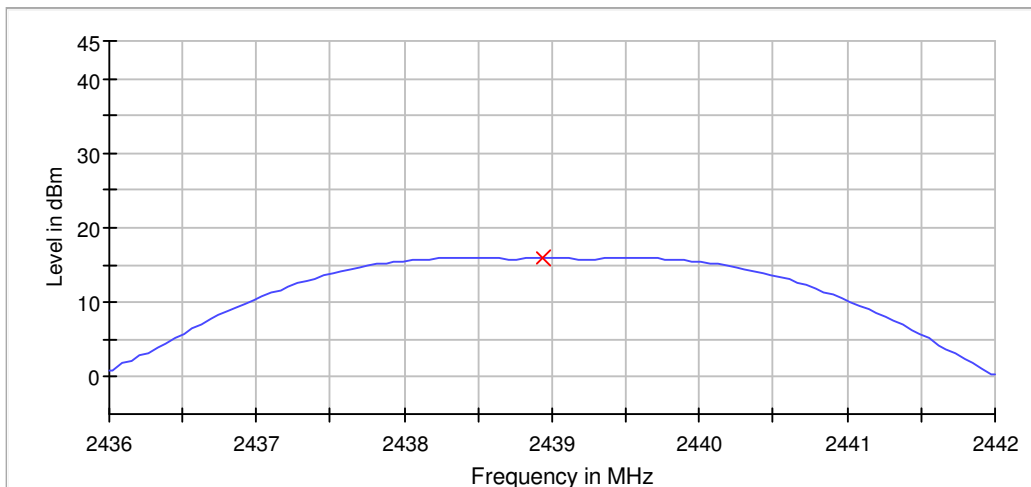
#### Conducted Peak Output Power

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2405.000000	15.4	21.0	PASS



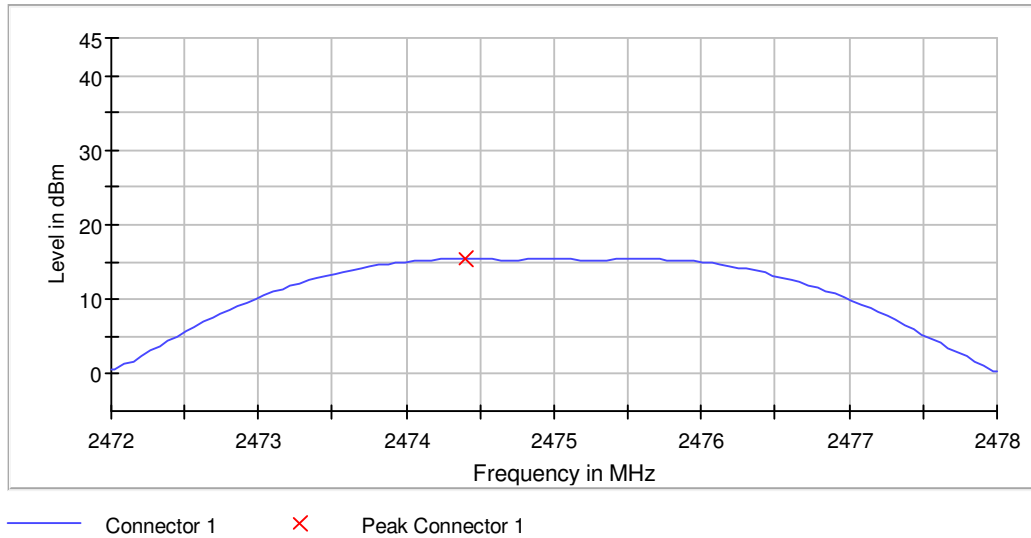
— Connector 1      × Peak Connector 1

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2439.000000	15.9	21.0	PASS



— Connector 1      × Peak Connector 1

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2475.000000	15.4	21.0	PASS



## Measurement

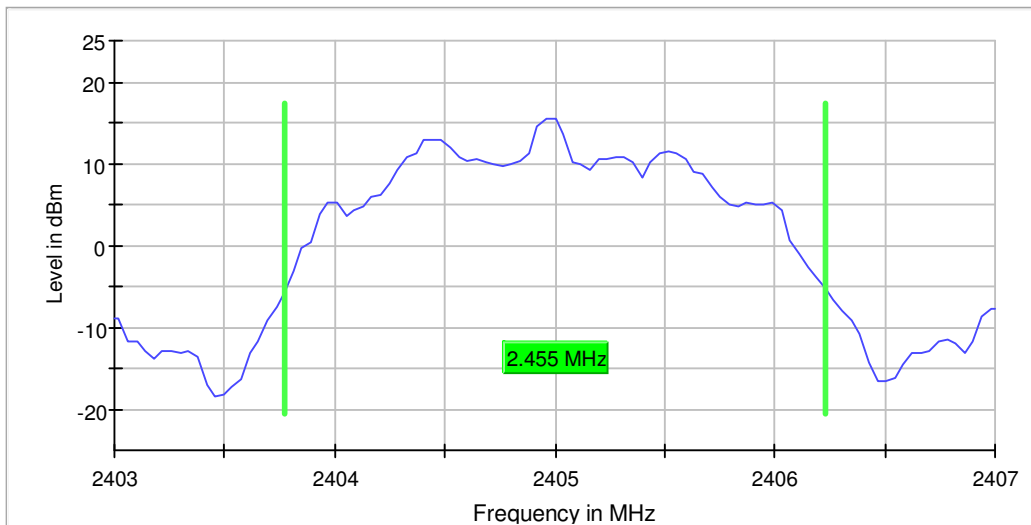
Setting	Instrument Value	Target Value
Start Frequency	2.40050 GHz	2.40050 GHz
Stop Frequency	2.40950 GHz	2.40950 GHz
Span	9.000 MHz	9.000 MHz
RBW	3.000 MHz	>= 2.000 MHz
VBW	10.000 MHz	>= 9.000 MHz
SweepPoints	101	~ 101
SweepTime	1.000 ms	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.02 dB	0.50 dB

### 20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2405.000000	2.455446	---	---	2403.772277	2406.227723

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2405.000000	15.4	PASS

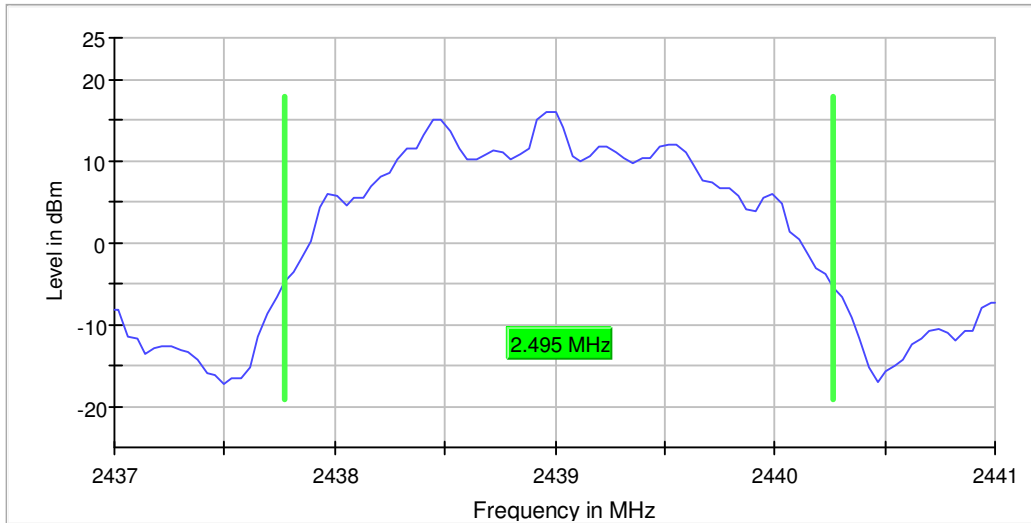


### 20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2439.000000	2.495050	---	---	2437.772277	2440.267327

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2439.000000	15.8	PASS

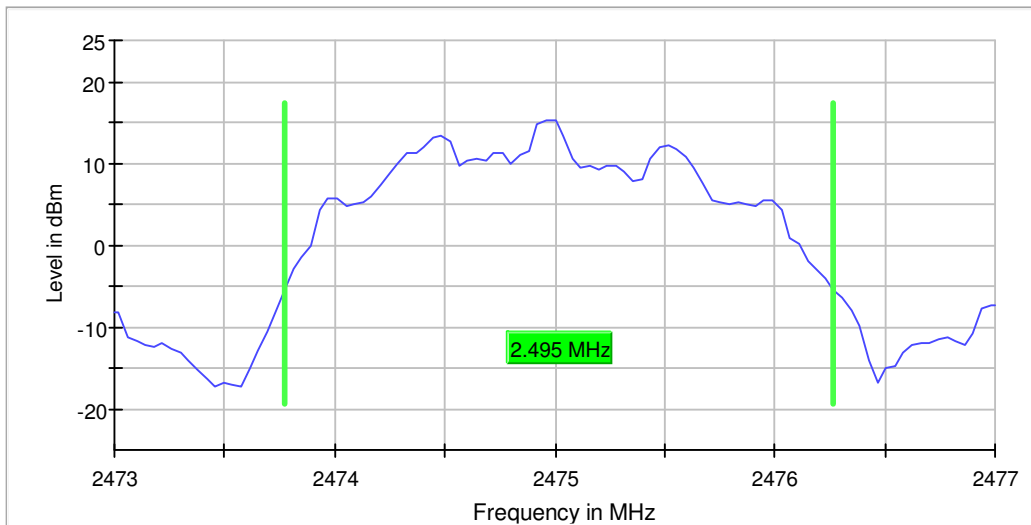


### 20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2475.000000	2.495050	---	---	2473.772277	2476.267327

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2475.000000	15.3	PASS



### Measurement

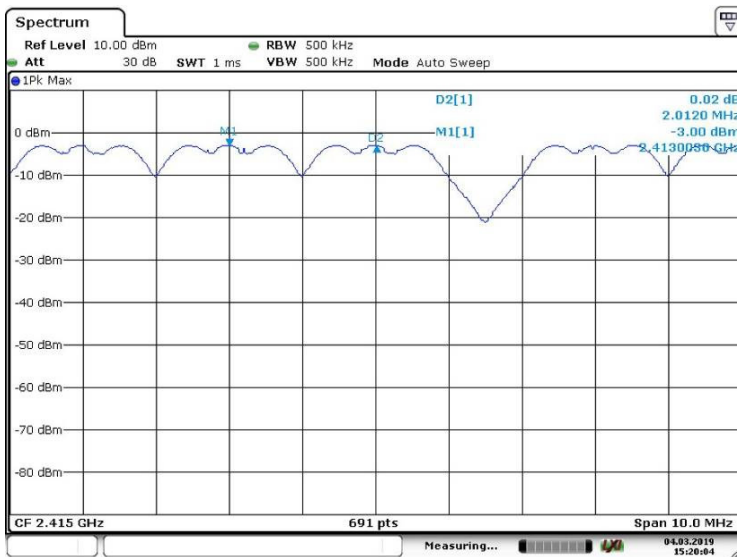
Setting	Instrument Value	Target Value
Start Frequency	2.40300 GHz	2.40300 GHz
Stop Frequency	2.40700 GHz	2.40700 GHz
Span	4.000 MHz	4.000 MHz

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RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 80
SweepTime	18.938 us	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
StableMode	Trace	Trace
StableValue	0.50 dB	0.50 dB
Run	15 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.06 dB	0.50 dB

### Carrier Frequency Separation

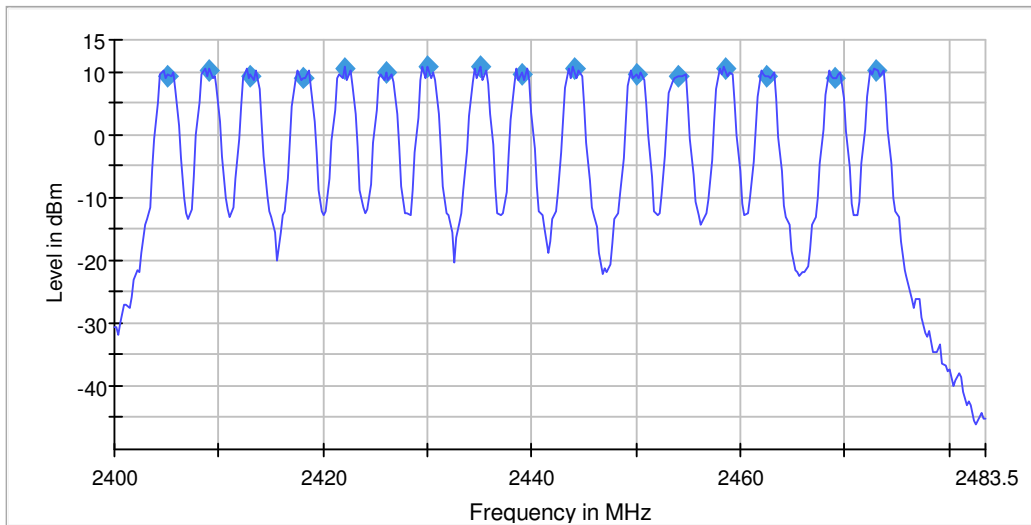
DUT Frequency (MHz)	Separation (kHz)	Limit Min(kHz)	Limit Max	Result
2415.000000	2012.0	1663.0	--	PASS



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### Hopping Frequencies

Hopping Frequencies	Limit Min	Limit Max	Result
16	15	---	PASS

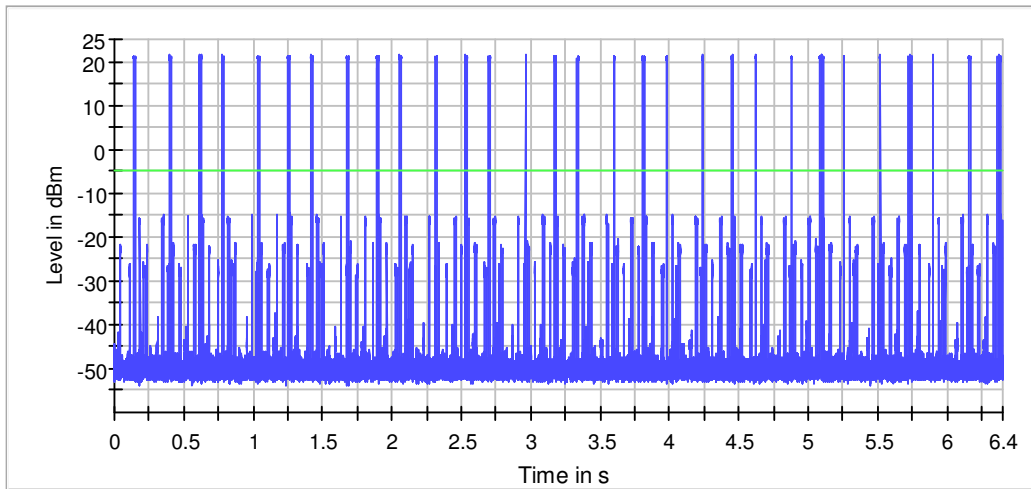


## Measurement

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	200.000 kHz	<= 299.000 kHz
VBW	200.000 kHz	>= 200.000 kHz
SweepPoints	418	~ 418
SweepTime	1.060 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	76 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.05 dB	0.50 dB

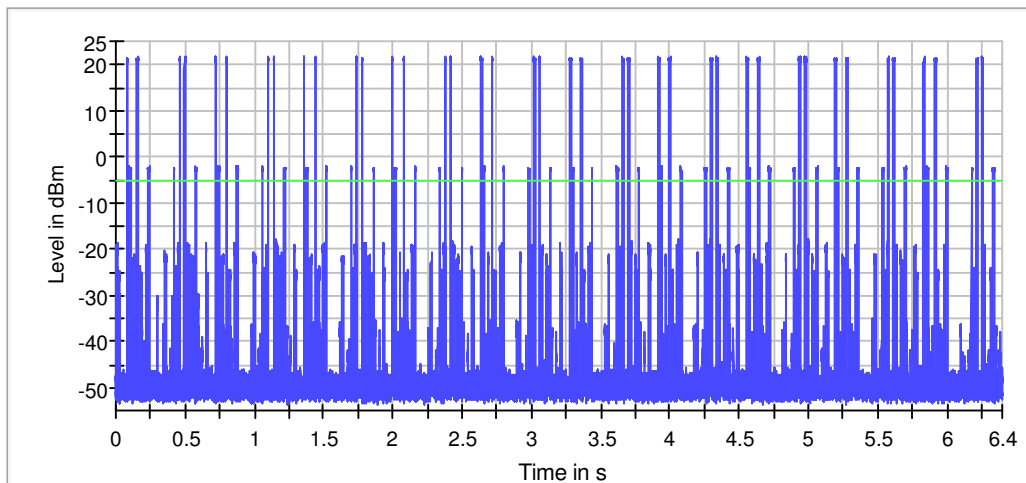
### Dwell Time

DUT Frequency (MHz)	Time (ms)	Limit Max (ms)	Limit Min (ms)	Threshold (dBm)	Result
2405.000000	311.020	400.000	0.000	-5.0	PASS



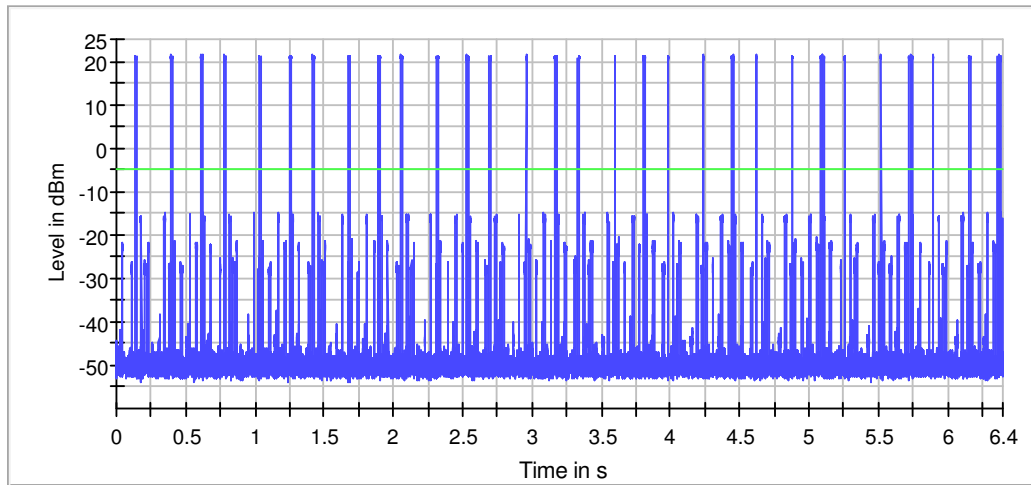
— Trace — Threshold

DUT Frequency (MHz)	Time (ms)	Limit Max (ms)	Limit Min (ms)	Threshold (dBm)	Result
2439.000000	370.694	400.000	0.000	-5.0	PASS



— Trace — Threshold

DUT Frequency (MHz)	Time (ms)	Limit Max (ms)	Limit Min (ms)	Threshold (dBm)	Result
2475.000000	361.400	400.000	0.000	-5.0	PASS



— Trace      — Threshold

## Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.40500 GHz	2.40500 GHz
Span	ZeroSpan	ZeroSpan
RBW	1.000 MHz	~ 1.000 MHz
VBW	3.000 MHz	~ 3.000 MHz
SweepPoints	30001	~ 30001
SweepTime	6.400 s	6.400 s
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
SweepType	Sweep	AUTO
Preamplifier	off	off
Trigger	External	External
Trigger Offset	0.000 ms	0.000 ms



### Bandedge

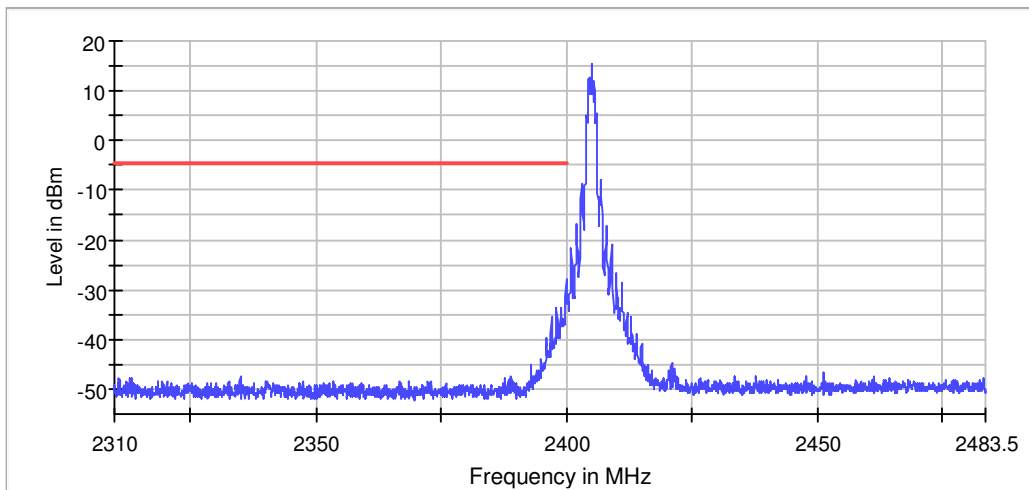
DUT Frequency (MHz)	Result
2405.000000	PASS

### Inband Peak

Frequency (MHz)	Level (dBm)
2404.975000	15.3

### Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2399.975000	-27.7	23.0	-4.7	PASS
2399.925000	-31.2	26.5	-4.7	PASS
2399.875000	-32.6	27.9	-4.7	PASS
2399.025000	-33.6	28.9	-4.7	PASS
2397.975000	-33.6	28.9	-4.7	PASS
2398.025000	-33.9	29.3	-4.7	PASS
2399.075000	-34.6	30.0	-4.7	PASS
2398.975000	-34.9	30.2	-4.7	PASS
2399.825000	-35.1	30.4	-4.7	PASS
2398.875000	-35.2	30.5	-4.7	PASS
2398.825000	-35.2	30.5	-4.7	PASS
2397.025000	-35.5	30.8	-4.7	PASS
2396.975000	-35.6	30.9	-4.7	PASS
2397.925000	-35.7	31.0	-4.7	PASS
2399.225000	-35.7	31.1	-4.7	PASS



— Limit    — Sum Level    × Fail

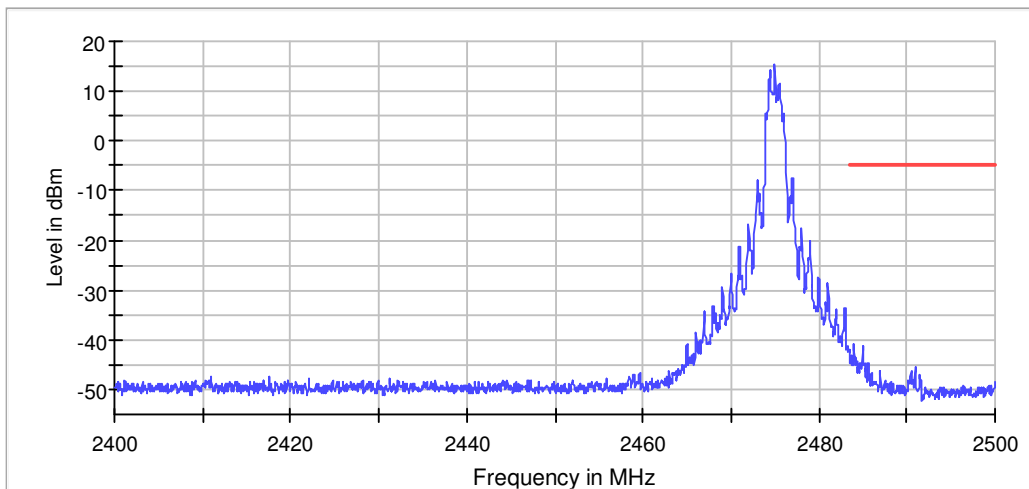
DUT Frequency (MHz)	Result
2475.000000	PASS

### Inband Peak

Frequency (MHz)	Level (dBm)
2475.025000	15.3

## Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2483.975000	-40.7	36.1	-4.7	PASS
2483.925000	-41.2	36.6	-4.7	PASS
2484.975000	-41.4	36.7	-4.7	PASS
2485.025000	-41.5	36.8	-4.7	PASS
2484.025000	-41.9	37.2	-4.7	PASS
2484.925000	-42.0	37.3	-4.7	PASS
2483.675000	-43.0	38.3	-4.7	PASS
2483.725000	-43.4	38.7	-4.7	PASS
2484.125000	-43.5	38.8	-4.7	PASS
2483.775000	-44.1	39.4	-4.7	PASS
2484.075000	-44.3	39.6	-4.7	PASS
2484.275000	-44.5	39.8	-4.7	PASS
2483.525000	-44.5	39.8	-4.7	PASS
2484.175000	-44.6	39.9	-4.7	PASS
2484.725000	-44.6	39.9	-4.7	PASS



— Limit    — Sum Level    × Fail

## Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	1.670 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace

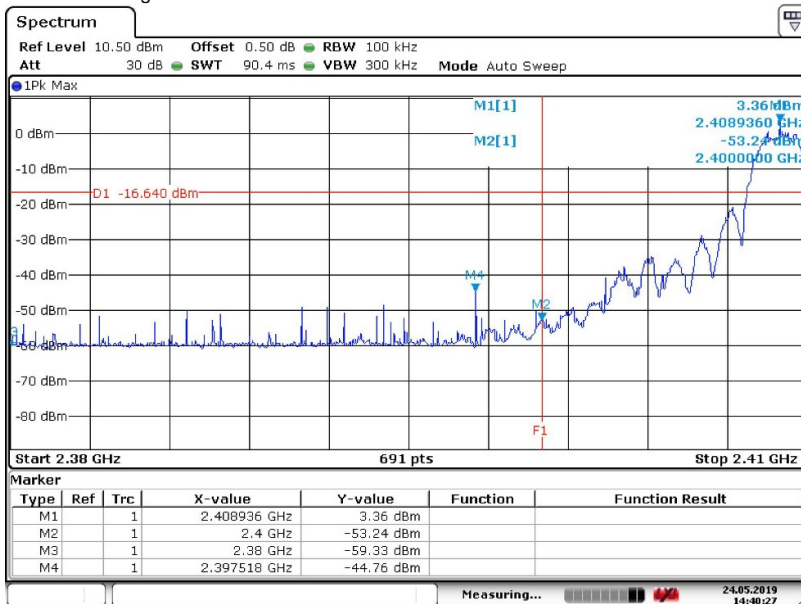
Stablevalue	0.50 dB	0.50 dB
Run	23 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.14 dB	0.50 dB

## Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.48350 GHz	2.48350 GHz
Stop Frequency	2.50000 GHz	2.50000 GHz
Span	16.500 MHz	16.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	330	~ 330
SweepTime	37.969 $\mu$ s	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	FET	AUTO
Preamplifier	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

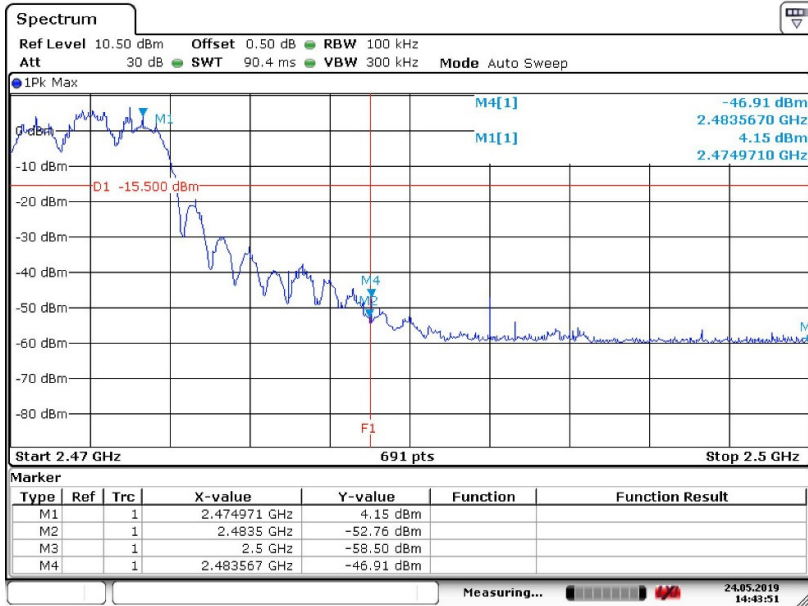
## Bandedge (Hopping mode)

Lower Band edge



Date: 24.MAY.2019 14:40:28

Higher Band edge

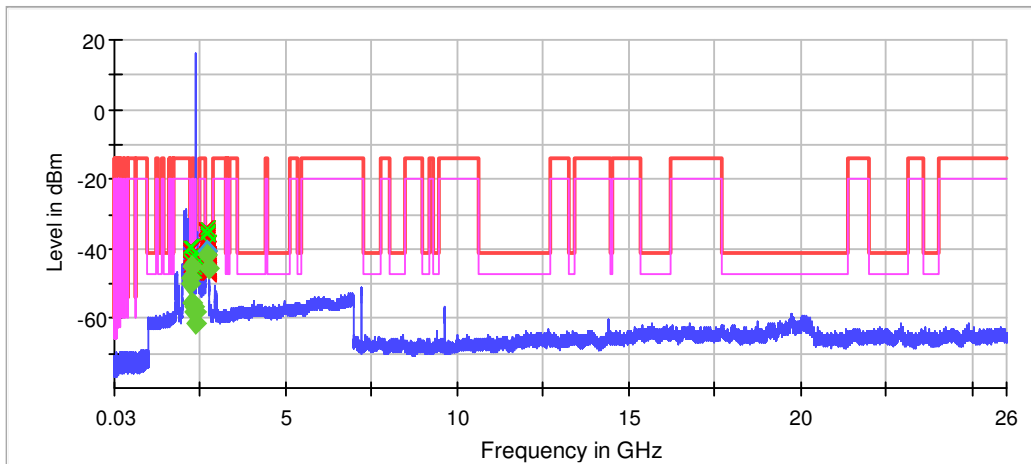


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## Tx Spurious Emission

Frequency (MHz)	Result
2405.000000	PASS

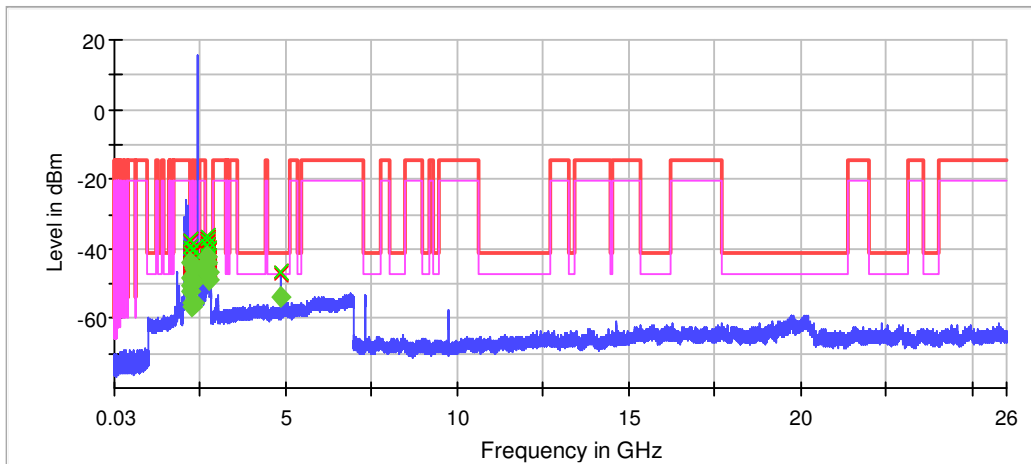
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2213.750000	-39.8	-48.4	-41.2	7.2	PASS
2245.250000	-43.2	-49.8	-41.2	8.6	PASS
2276.750000	-39.5	-45.1	-41.2	3.9	PASS
2294.250000	-42.3	-55.3	-41.2	14.1	PASS
2310.250000	-45.2	-58.1	-41.2	16.9	PASS
2341.750000	-45.9	-56.3	-41.2	15.1	PASS
2385.250000	-44.4	-61.3	-41.2	20.1	PASS
2387.750000	-42.5	-58.4	-41.2	17.2	PASS
2724.750000	-35.7	-41.9	-41.2	0.7	PASS
2757.250000	-38.2	-45.3	-41.2	4.1	PASS



— Limit  
— Sum Level  
— Threshold  
◆ Final Critical  
◆ Fail  
◆ Pass  
× Critical

Frequency (MHz)	Result
2439.000000	PASS

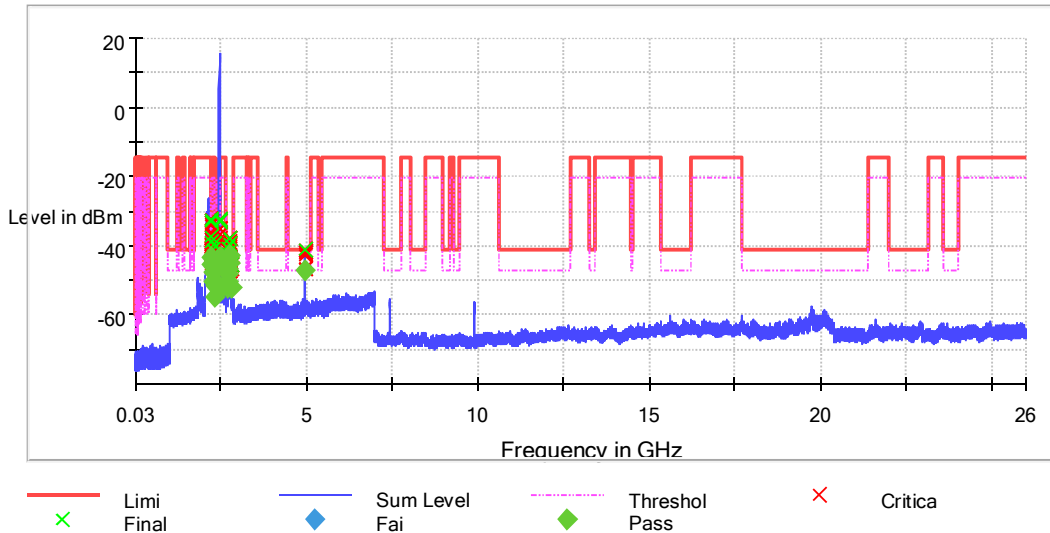
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2200.250000	-39.5	-52.1	-41.2	10.9	PASS
2215.750000	-37.6	-44.1	-41.2	2.9	PASS
2230.750000	-43.0	-50.5	-41.2	9.3	PASS
2247.250000	-41.0	-48.1	-41.2	6.9	PASS
2280.250000	-44.3	-56.3	-41.2	15.1	PASS
2295.750000	-46.2	-55.7	-41.2	14.5	PASS
2311.250000	-40.1	-45.7	-41.2	4.5	PASS
2326.750000	-43.5	-49.5	-41.2	8.3	PASS
2343.750000	-46.8	-55.5	-41.2	14.3	PASS
2694.750000	-38.8	-43.9	-41.2	2.7	PASS
2710.750000	-41.7	-47.4	-41.2	6.2	PASS
2727.750000	-37.3	-44.1	-41.2	2.9	PASS
2742.750000	-36.5	-42.5	-41.2	1.3	PASS
2758.750000	-40.0	-46.4	-41.2	5.2	PASS
2790.750000	-42.4	-49.1	-41.2	7.9	PASS
4879.250000	-46.9	-53.7	-41.2	12.5	PASS



— Limit  
— Sum Level  
— Threshold  
◆ Final Critical  
◆ Fail  
◆ Pass  
✕ Critical

Frequency (MHz)	Result
2475.000000	PASS

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2234.750000	-39.1	-45.3	-41.2	4.1	PASS
2250.750000	-37.5	-43.2	-41.2	2.0	PASS
2266.750000	-43.0	-50.2	-41.2	9.0	PASS
2282.750000	-41.3	-47.8	-41.2	6.6	PASS
2315.750000	-44.0	-51.7	-41.2	10.5	PASS
2331.750000	-45.6	-55.0	-41.2	13.8	PASS
2346.750000	-39.8	-45.4	-41.2	4.2	PASS
2363.750000	-43.4	-50.8	-41.2	9.6	PASS
2483.750000	-32.7	-43.5	-41.2	2.3	PASS
2486.750000	-32.8	-52.7	-41.2	11.5	PASS
2699.750000	-43.6	-50.4	-41.2	9.2	PASS
2714.750000	-46.0	-52.3	-41.2	11.1	PASS
2731.750000	-40.7	-46.9	-41.2	5.7	PASS
2747.250000	-42.3	-48.3	-41.2	7.1	PASS
2763.250000	-37.9	-43.1	-41.2	1.9	PASS
2778.750000	-39.7	-45.1	-41.2	3.9	PASS
2827.250000	-45.4	-52.0	-41.2	10.8	PASS
4951.250000	-41.1	-47.2	-41.2	6.0	PASS



### Pre Measurement 1

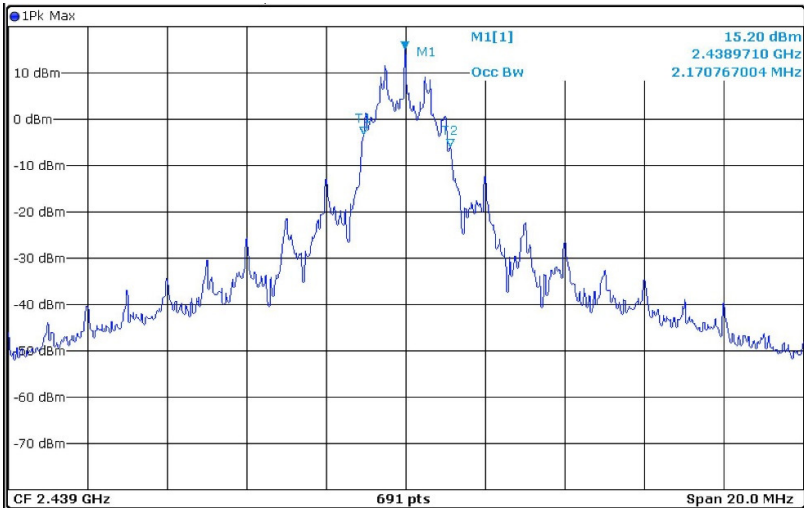
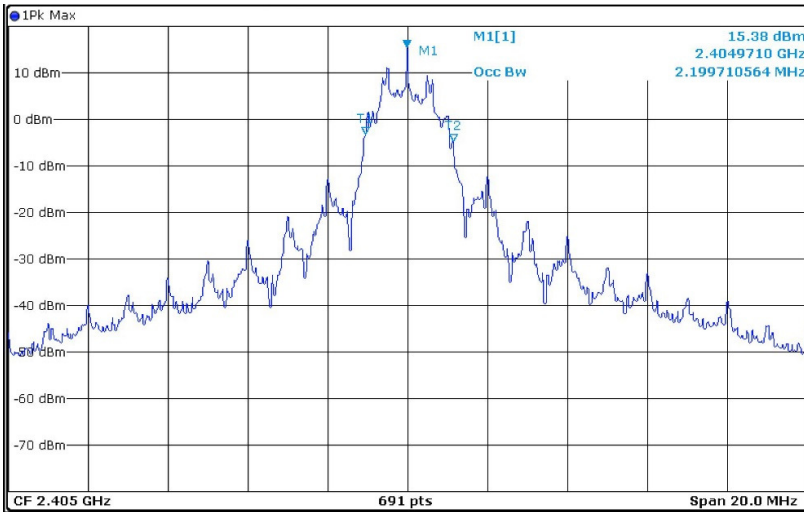
Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	19400	~ 19400
SweepTime	19.400 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

### Pre Measurement 2

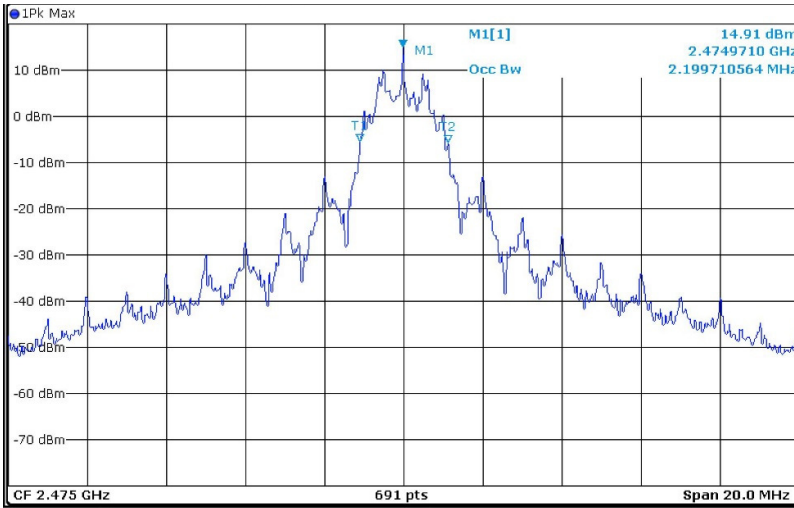
Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	2800	~ 2800
SweepTime	2.800 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	41 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.16 dB	0.50 dB

## 99% Bandwidth

Frequency (MHz)	Bandwidth (MHz)
2405.0	2.20
2439.0	2.17
2475.0	2.20







## Measurement

Setting	Instrument Value	Target Value
RBW	100.000 kHz	$\geq 60.000$ kHz
VBW	300.000 kHz	$\geq 300.000$ kHz
SweepPoints	121	~ 121
SweepTime	1.000 s	1.000 s
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
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

BU

- End of the Report -