Summary

802.11n

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
RF output power	2412.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	2412.000	20.0	20.000000	PASS
Peak Power Spectral Density	2412.000	20.0	20.000000	PASS
Occupied Channel Bandwidth 99%	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
Emissions in restricted frequency bands (Average)	2412.000	20.0	20.000000	PASS
RF output power	2442.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	2442.000	20.0	20.000000	PASS
Peak Power Spectral Density	2442.000	20.0	20.000000	PASS
Occupied Channel Bandwidth 99%	2442.000	20.0	20.000000	PASS
Tx Spurious Emission	2442.000	20.0	20.000000	PASS
Emissions in restricted frequency bands (Average)	2442.000	20.0	20.000000	PASS
RF output power	2462.000	20.0	20.000000	PASS
Minimum Emission Bandwidth 6 dB	2462.000	20.0	20.000000	PASS
Peak Power Spectral Density	2462.000	20.0	20.000000	PASS
Occupied Channel Bandwidth 99%	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
Emissions in restricted frequency bands (Average)	2462.000	20.0	20.000000	PASS

RF output power (2412 MHz; 20 MHz)

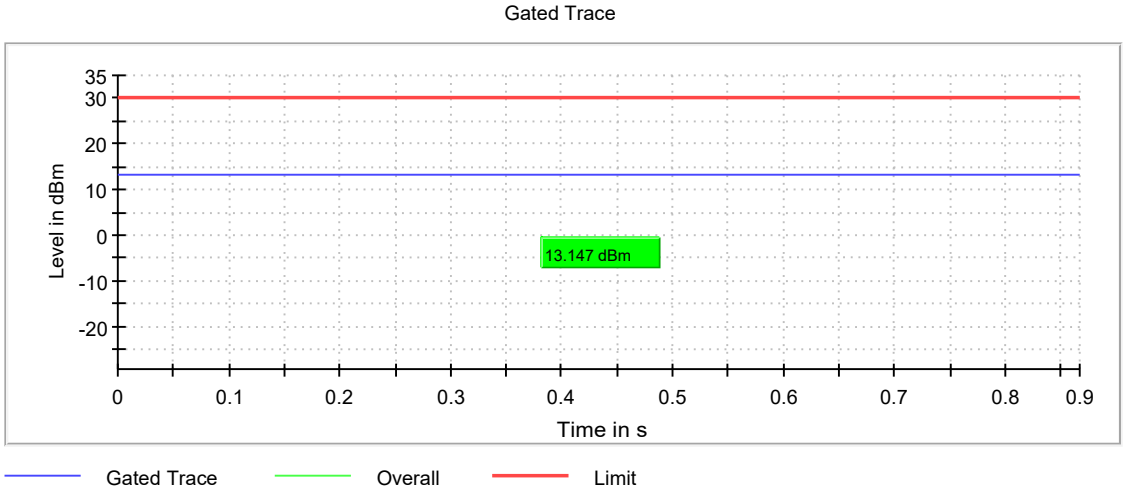
Customized settings.

Test according to FCC title 47 part 15 §15.247(b), KDB 558074 D01 DTS Meas Guidance v05 and ANSI C63.10-2013 11.9.2.3.2

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.
Expanded Combined Uncertainty of absolute Level Measurement (K=2) < 1 dB

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2412.000000	13.1	30.0	13.1	86.715	PASS



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

Customized settings.

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05 and ANSI C63.10-2013 11.8.1

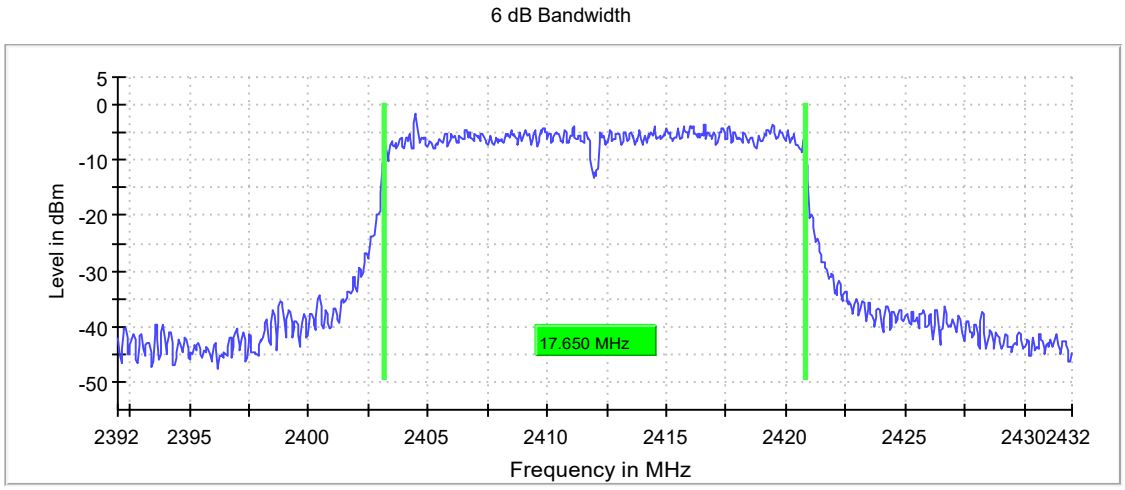
Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.
Expanded Uncertainty (K=2) < 2%

6 dB Bandwidth

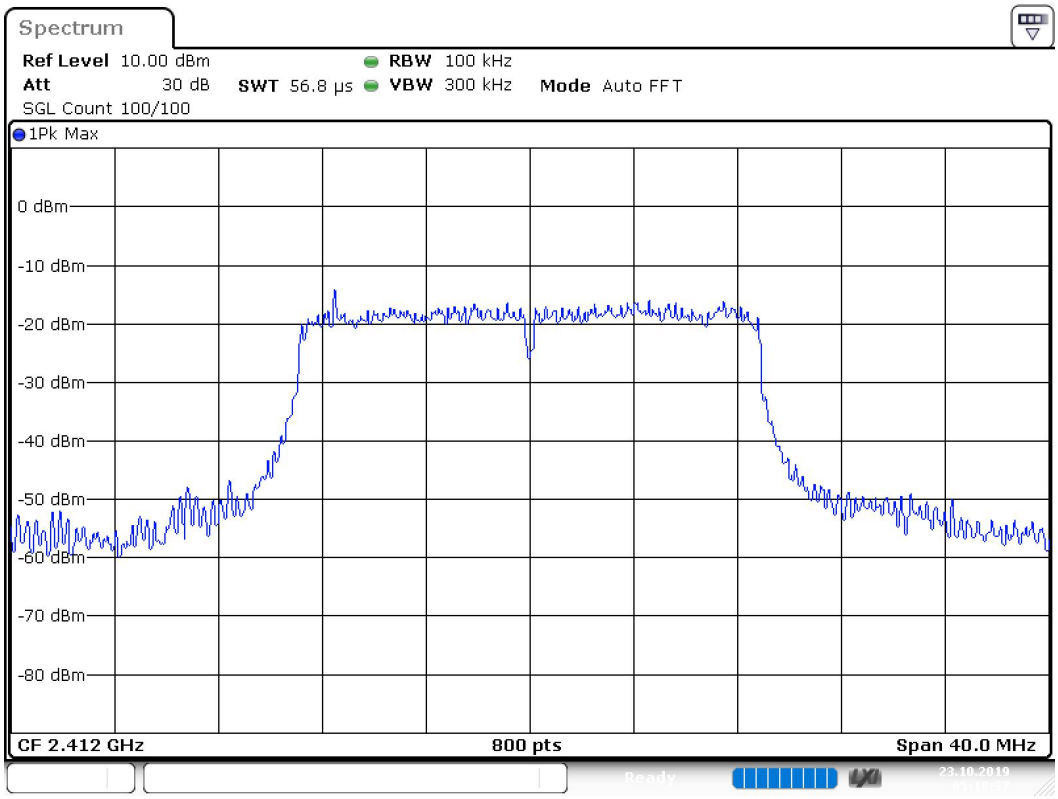
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2412.000000	17.650000	0.500000	---	2403.175000	2420.825000

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2412.000000	-1.7	PASS



Bandwidth



Date: 23.OCT.2019 05:18:38

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	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off

Peak Power Spectral Density (2412 MHz; 20 MHz)

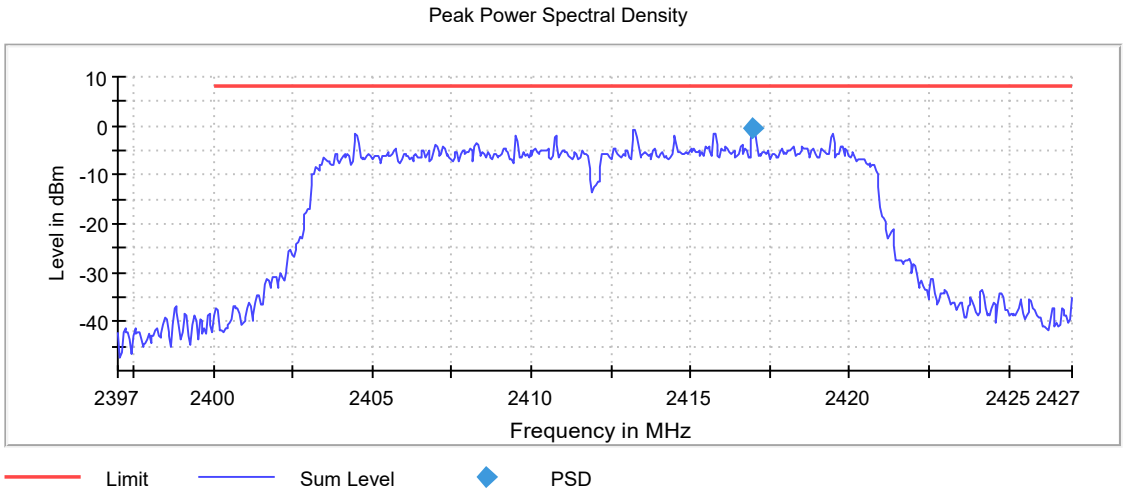
Customized settings.

Test according to FCC title 47 part 15 §15.247(a),(e), KDB 558074 D01 DTS Meas Guidance v05 F and ANSI C63.10-2013

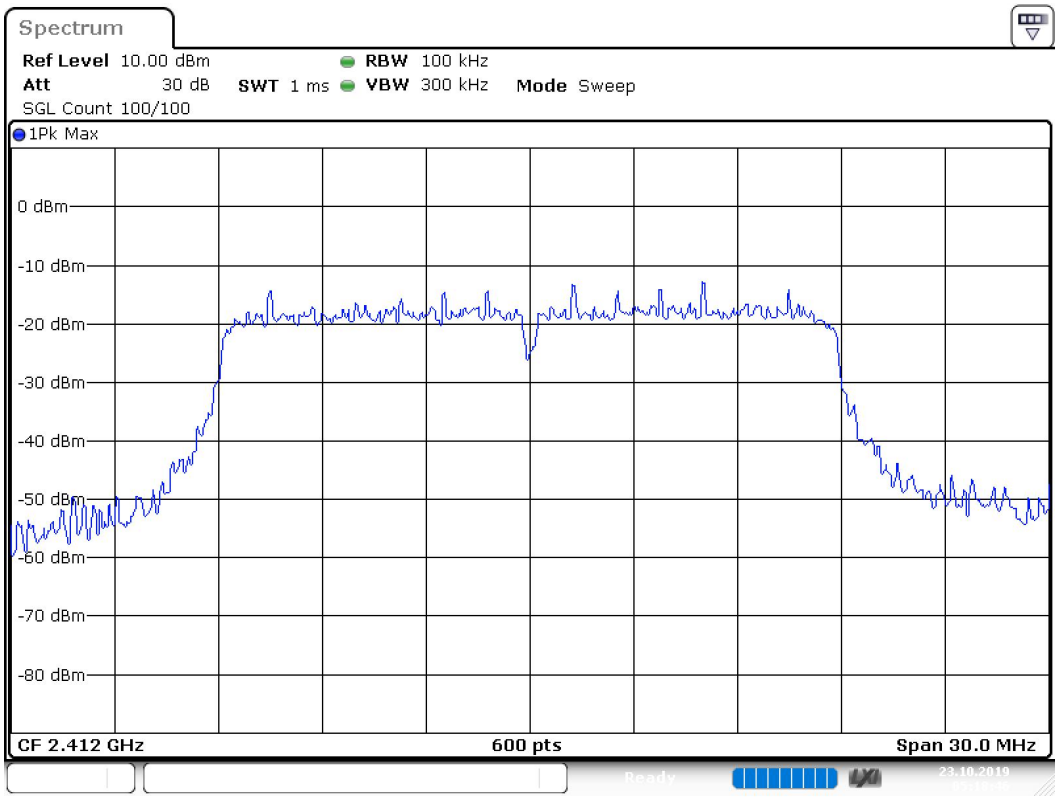
Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.
Expanded Uncertainty (K=2) < 1.3 dB

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2412.000000	2416.975000	-0.369	8.0	PASS



PSD Connector 1



Date: 23.OCT.2019 05:18:47

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.39700 GHz	2.39700 GHz
Stop Frequency	2.42700 GHz	2.42700 GHz
Span	30.000 MHz	30.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	600	~ 600
Sweeptime	1.040 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	Sweep
Preamp	off	off

Occupied Channel Bandwidth 99% (2412 MHz; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05 and ANSI C63.10-2013 11.8.1

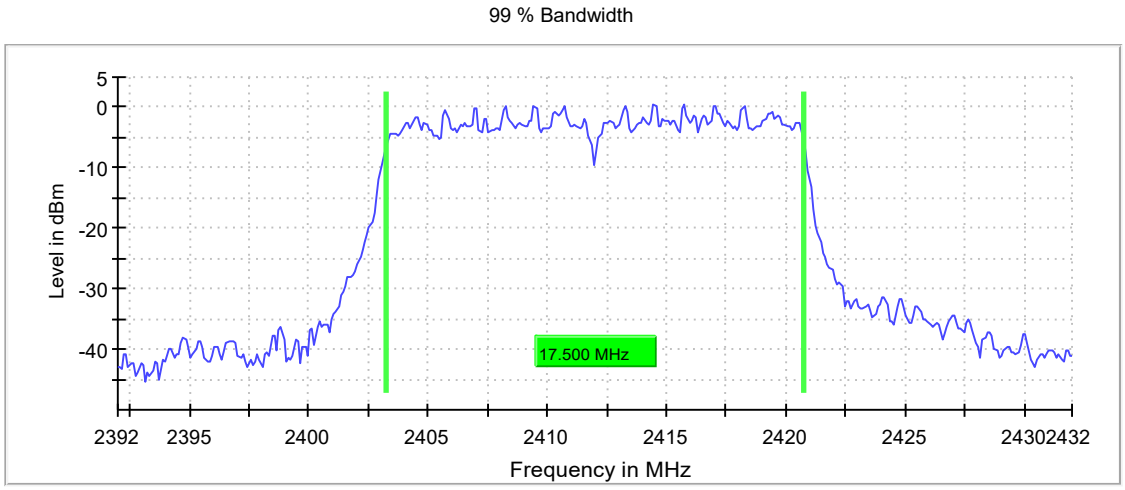
Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.
Expanded Uncertainty (K=2) < 2%

99 % Bandwidth

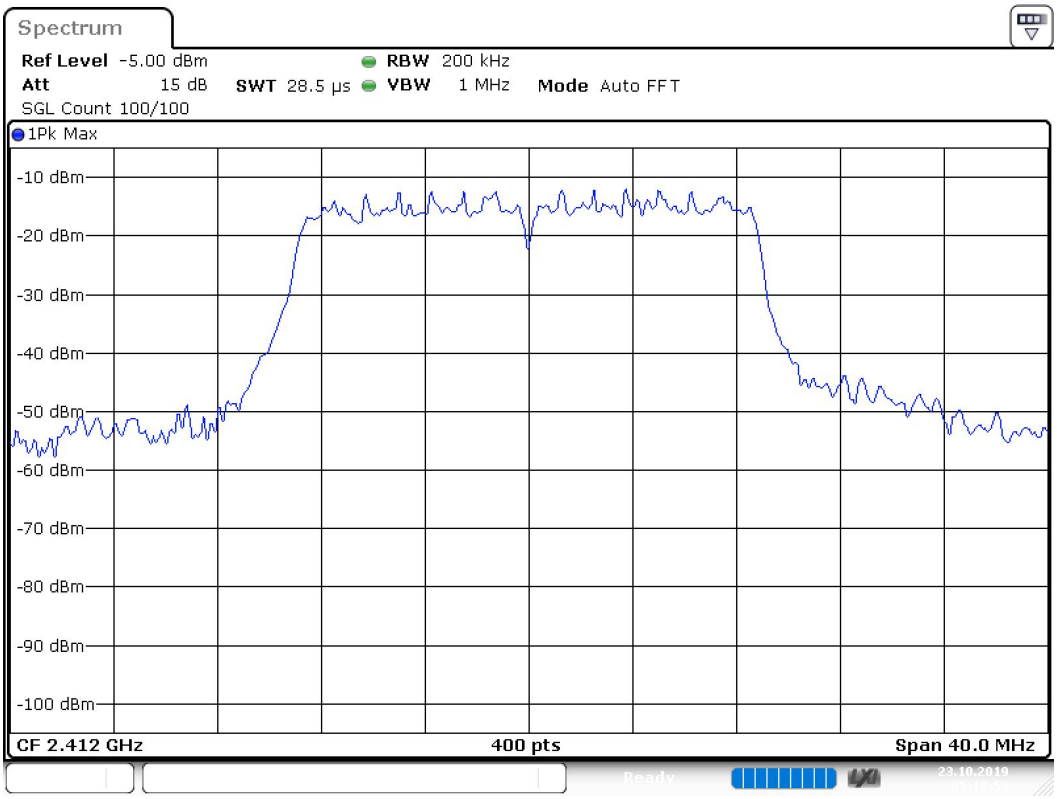
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2412.000000	17.500000	---	---	2403.250000	2420.750000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2412.000000	PASS



Bandwidth



Date: 23.OCT.2019 05:18:54

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	-5.000 dBm	-5.000 dBm
Attenuation	15.000 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

Band Edge low (2412 MHz; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v05 8.7 and ANSI C63.10-2013

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.
Expanded Uncertainty (K=2) < 0.8 dB

Result

DUT Frequency (MHz)	Result
2412.000000	PASS

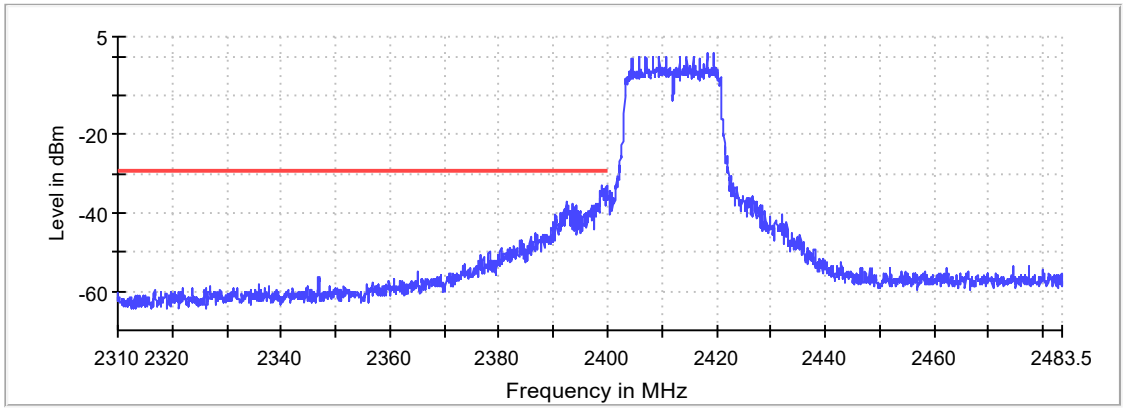
Inband Peak

Frequency (MHz)	Level (dBm)
2419.475000	0.9

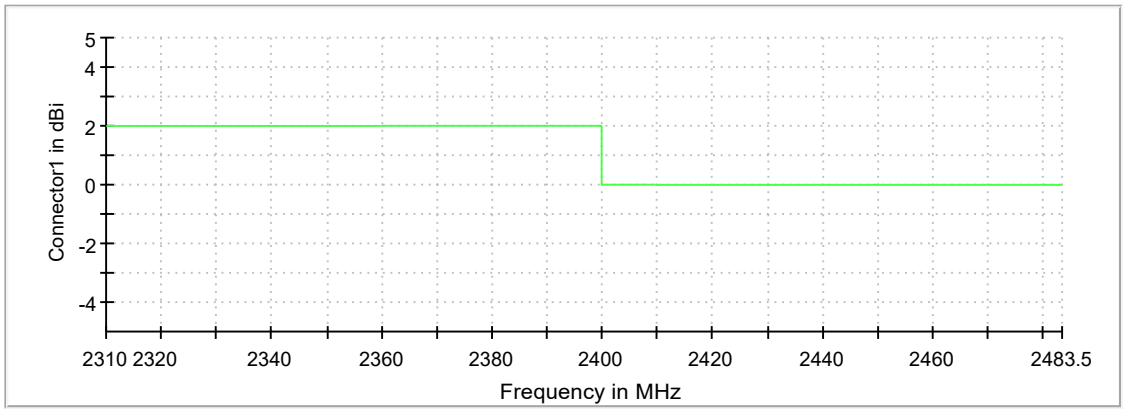
Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2399.825000	-33.0	3.9	-29.1	PASS
2398.875000	-33.1	4.0	-29.1	PASS
2399.875000	-33.2	4.1	-29.1	PASS
2398.825000	-33.3	4.2	-29.1	PASS
2398.925000	-33.4	4.3	-29.1	PASS
2399.775000	-33.6	4.6	-29.1	PASS
2399.175000	-34.1	5.0	-29.1	PASS
2398.525000	-34.2	5.1	-29.1	PASS
2399.125000	-34.2	5.2	-29.1	PASS
2399.225000	-34.2	5.2	-29.1	PASS
2399.475000	-34.3	5.3	-29.1	PASS
2399.425000	-34.3	5.3	-29.1	PASS
2398.775000	-34.4	5.3	-29.1	PASS
2399.525000	-34.6	5.6	-29.1	PASS
2398.475000	-34.6	5.6	-29.1	PASS

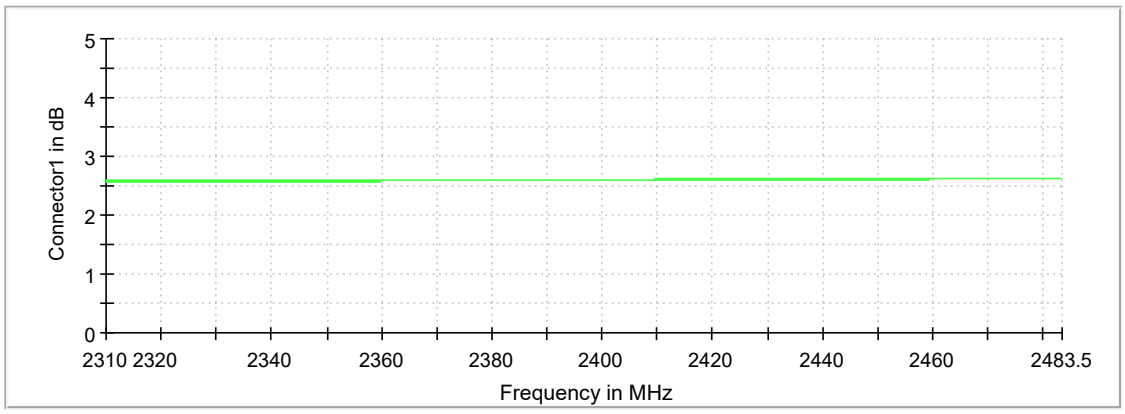
Band Edge



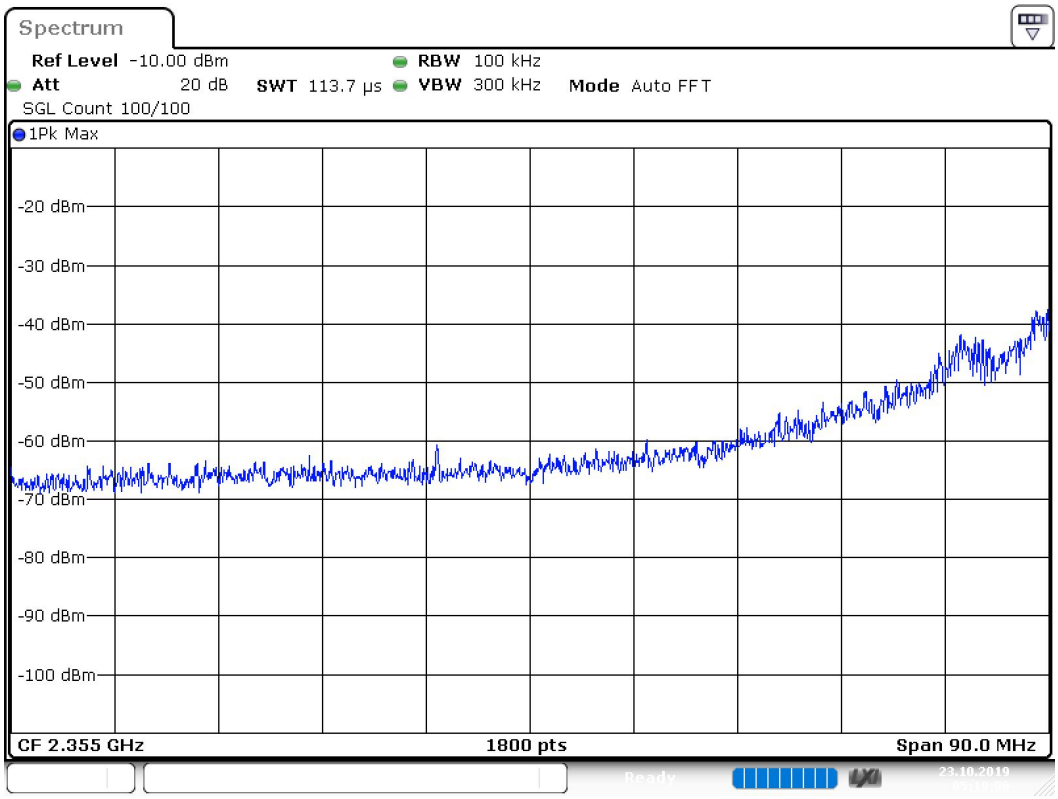
Gain



Attenuation

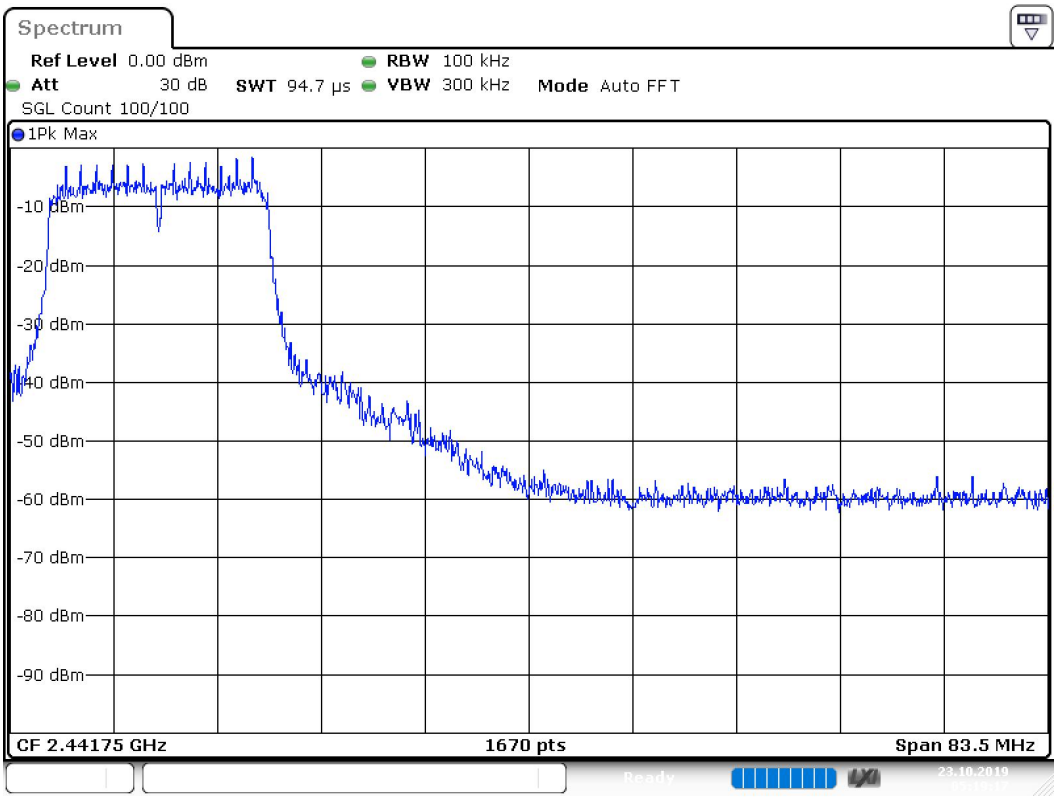


Band Edge Connector 1_0



Date: 23.OCT.2019 05:19:07

Band Edge Connector 1_1



Date: 23.OCT.2019 05:19:18

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	-30.000 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

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	-30.000 dBm

Setting	Instrument Value	Target Value
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

Tx Spurious Emission (2412 MHz; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v05 8.5 and ANSI C63.10-2013 11.11.2 & 11.11.3

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.
Expanded Uncertainty (K=2) < 1.8 dB

Result

DUT Frequency (MHz)	Result
2412.000000	PASS

Final measurements

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

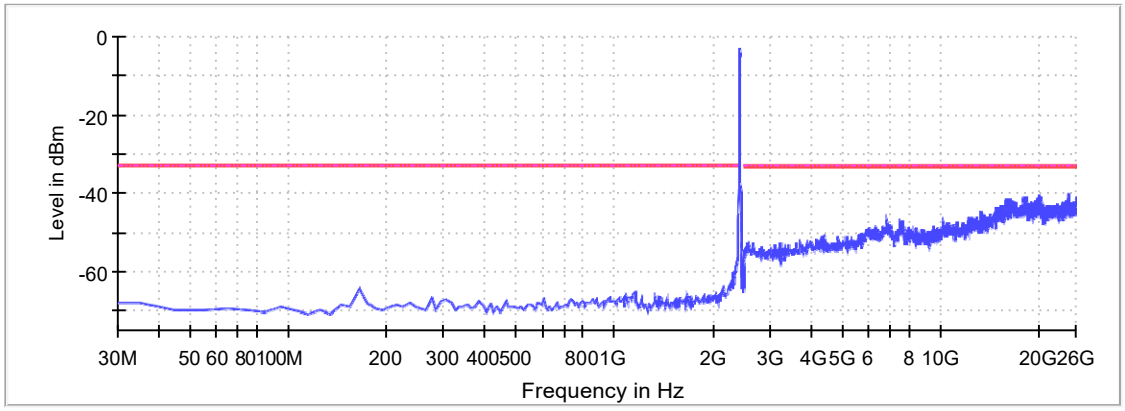
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2395.021008	-34.0	1.0	-33.0
24705.742988	-40.0	7.0	-33.0
19958.468232	-40.3	7.2	-33.0
20228.313323	-40.6	7.5	-33.0
25985.008606	-40.6	7.6	-33.0
19878.514131	-40.7	7.7	-33.0
18199.478007	-40.8	7.8	-33.0
25915.048768	-40.8	7.8	-33.0
17909.644390	-40.9	7.9	-33.0
19898.502656	-41.0	8.0	-33.0
18239.455057	-41.0	8.0	-33.0
16150.654165	-41.0	8.0	-33.0
19858.525606	-41.1	8.1	-33.0
19618.663302	-41.3	8.2	-33.0
15940.774649	-41.3	8.3	-33.0

Measurement Settings

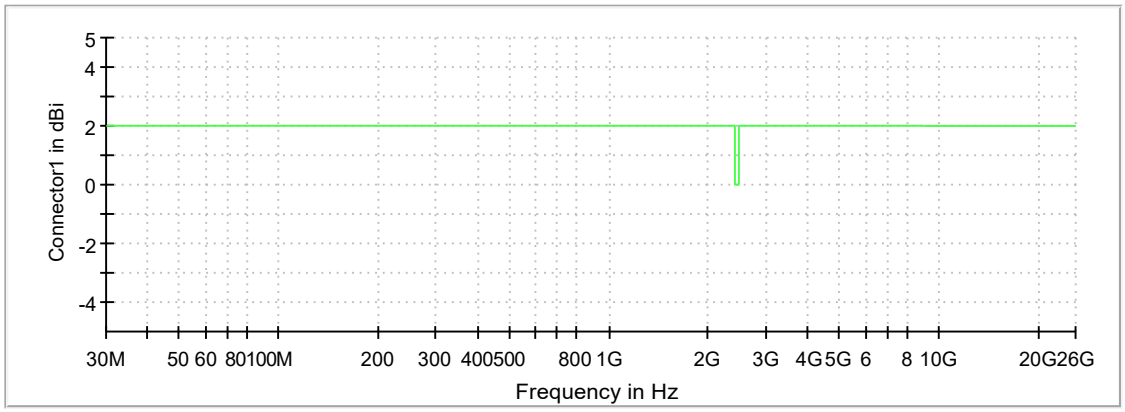
Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	26000.000000	1	1

Spurious



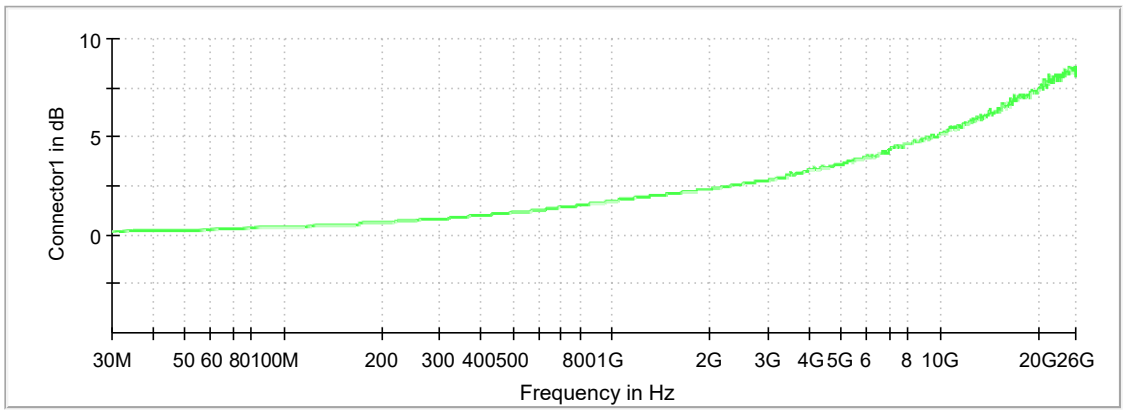
Limit Sum Level Threshold Critical Final Critical

Gain



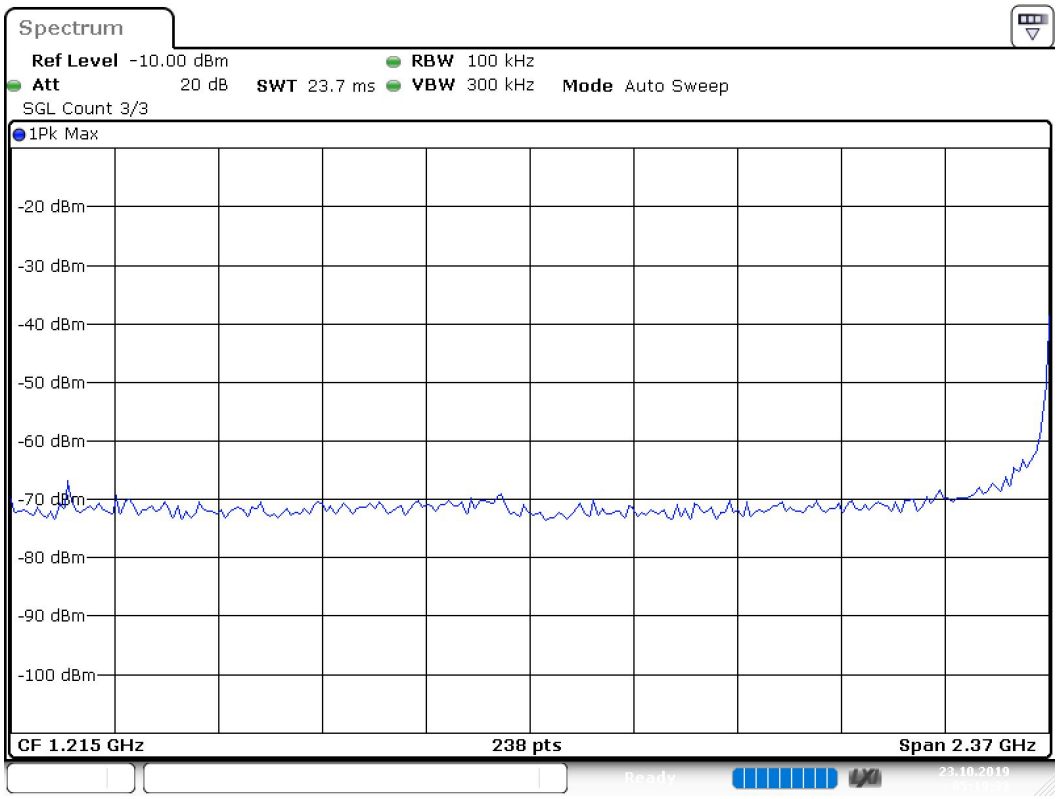
Connector1

Attenuation



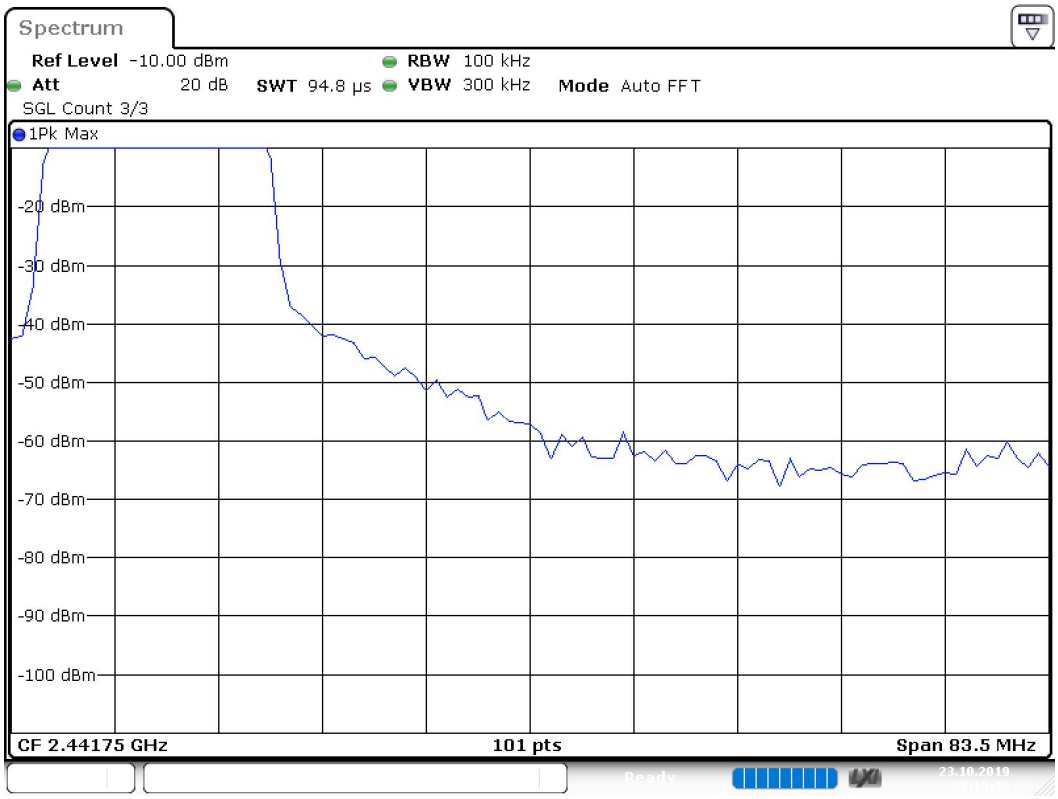
Connector1

Spurious Connector 1_0



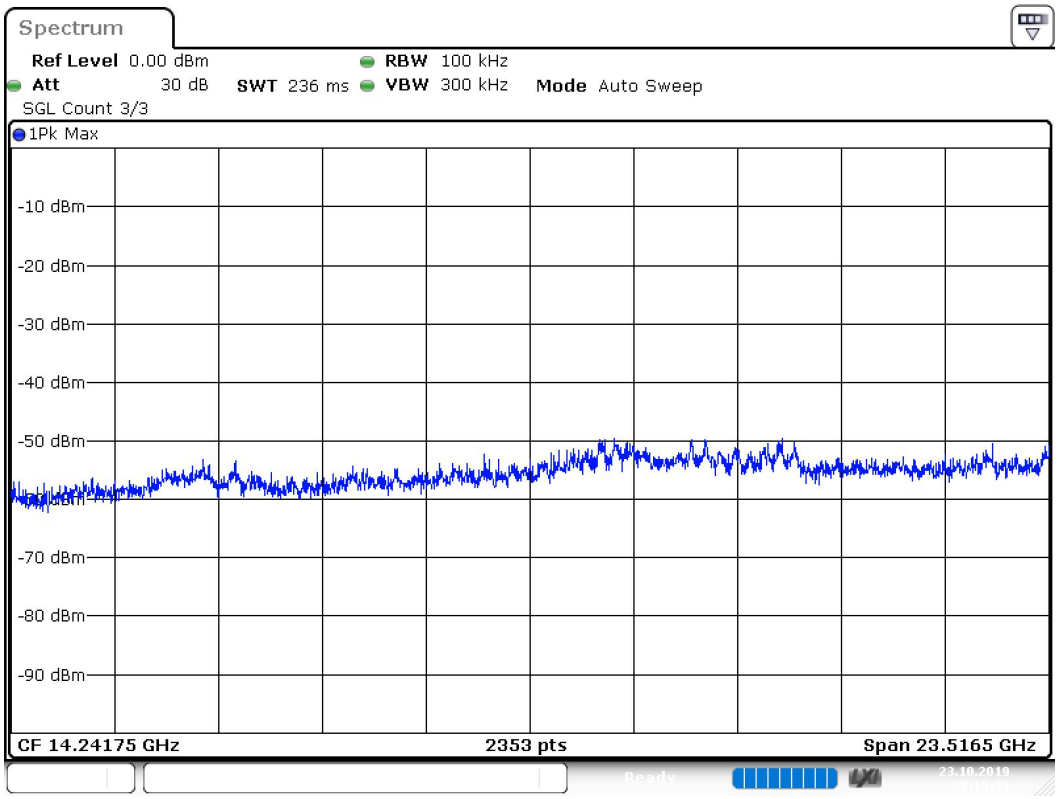
Date: 23.OCT.2019 05:19:33

Spurious Connector 1_1



Date: 23.OCT.2019 05:19:41

Spurious Connector 1_2



Date: 23.OCT.2019 05:19:54

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

Emissions in restricted frequency bands (Average) (2412 MHz; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v05 8.6 and ANSI C63.10-2013 11.12.2.6

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.
Expanded Uncertainty (K=2) < 1.8 dB

Result

DUT Frequency (MHz)	Result
2412.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2385.750000	-32.9	-46.8	-41.2	5.6	PASS

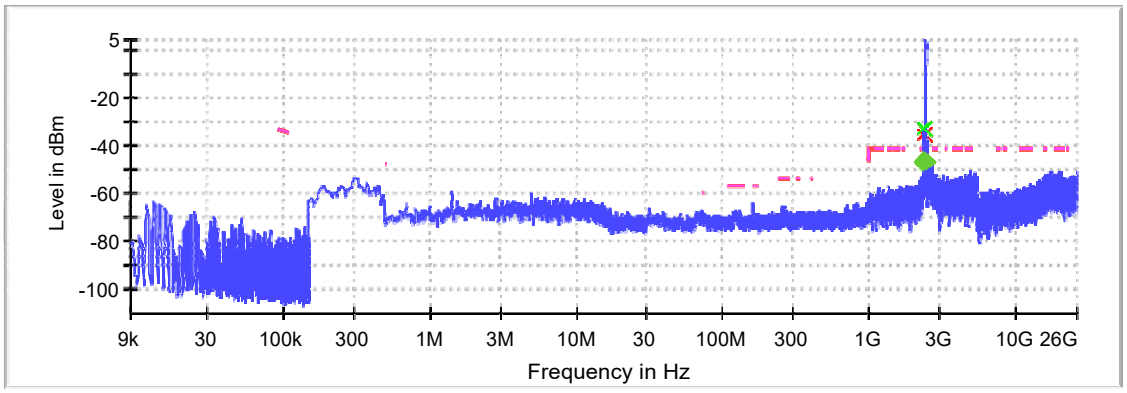
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2385.750000	-32.9	-8.3	-41.2
2386.250000	-35.4	-5.8	-41.2
2382.750000	-42.0	0.8	-41.2
2389.250000	-42.2	1.0	-41.2
2388.750000	-42.3	1.1	-41.2
2381.250000	-43.3	2.1	-41.2
2388.250000	-43.9	2.7	-41.2
2366.250000	-44.4	3.2	-41.2
2365.750000	-44.7	3.5	-41.2
2384.750000	-44.9	3.7	-41.2
2386.750000	-45.7	4.5	-41.2
2378.750000	-46.0	4.8	-41.2
2383.250000	-46.6	5.4	-41.2
2389.750000	-46.7	5.5	-41.2
2378.250000	-46.8	5.6	-41.2

Measurement Settings

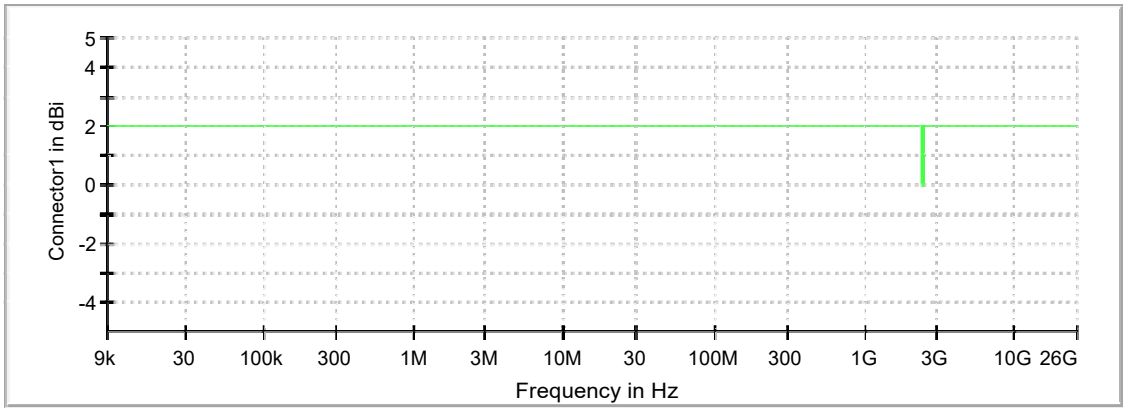
Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
0.009000	0.090000	2	2
0.090000	0.110000	2	2
0.110000	0.150000	2	2
0.150000	0.490000	2	2
0.490000	30.000000	2	2
30.000000	1000.000000	2	2
1000.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	5470.000000	1	1
5470.000000	7000.000000	1	1
7000.000000	16000.000000	1	1
16000.000000	26000.000000	1	1

Restricted Band



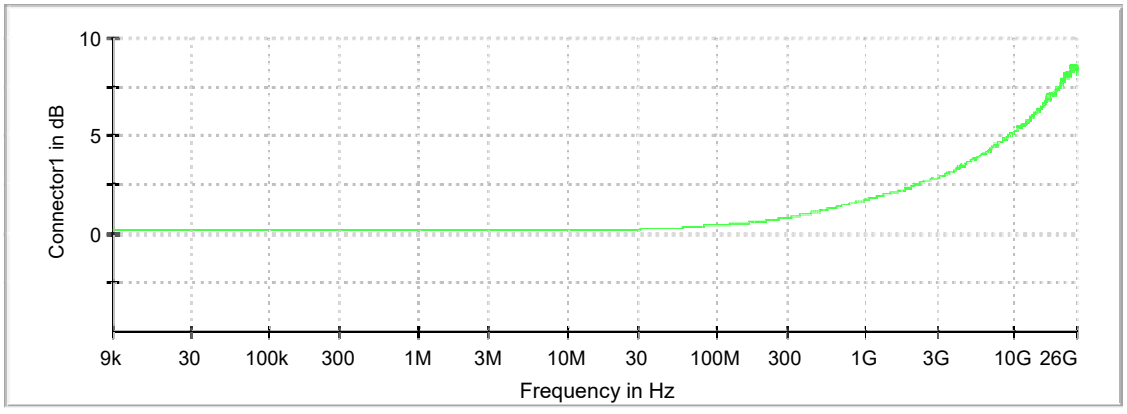
Limit
Threshold
Critical
Sum Level
Final Critical
Fail
Pass

Gain



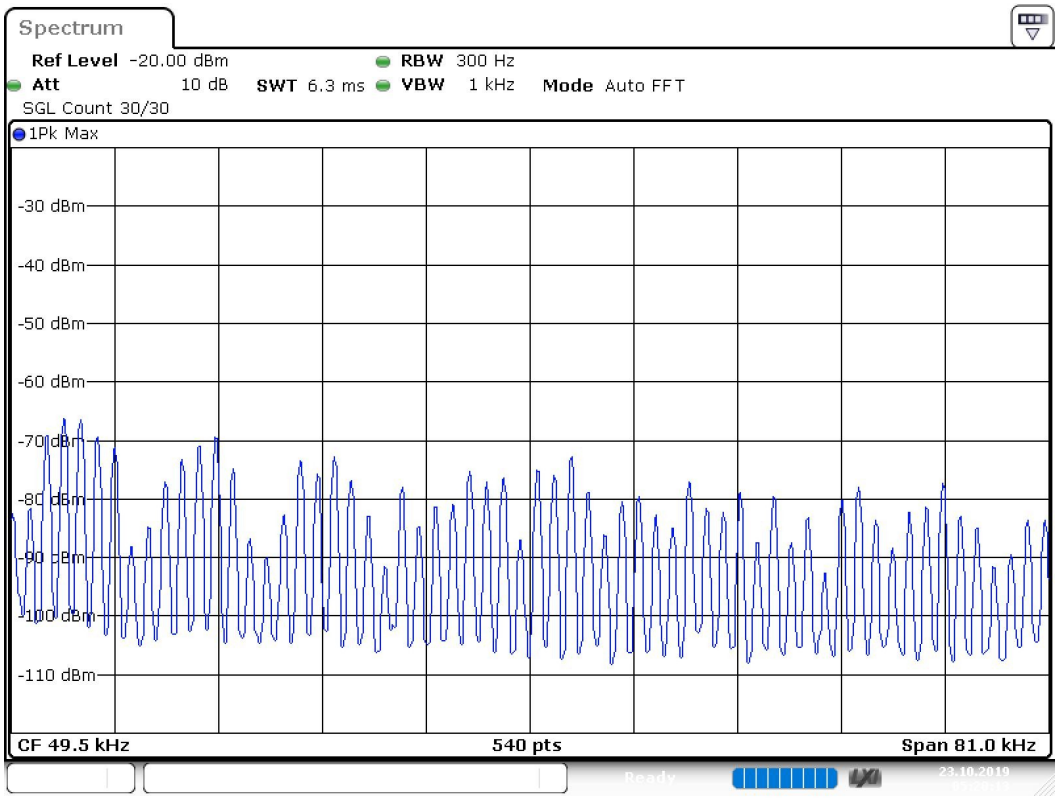
Connector1

Attenuation



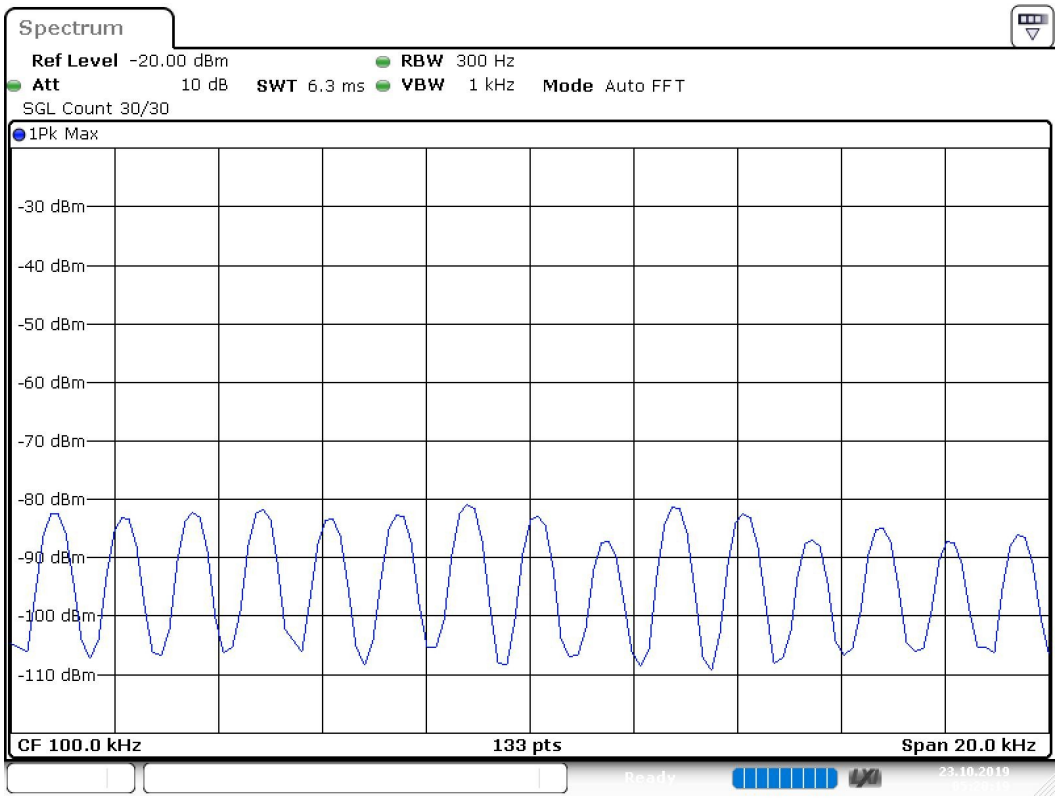
Connector1

Restricted Band Connector 1_0



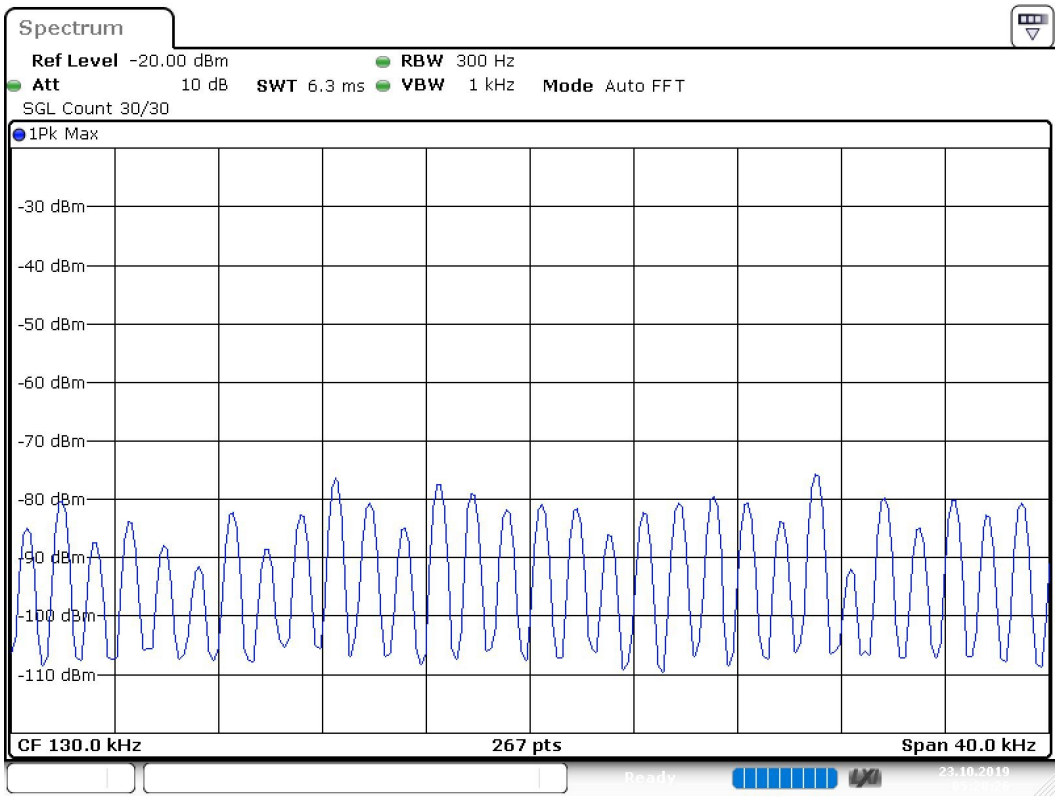
Date: 23.OCT.2019 05:20:13

Restricted Band Connector 1_1



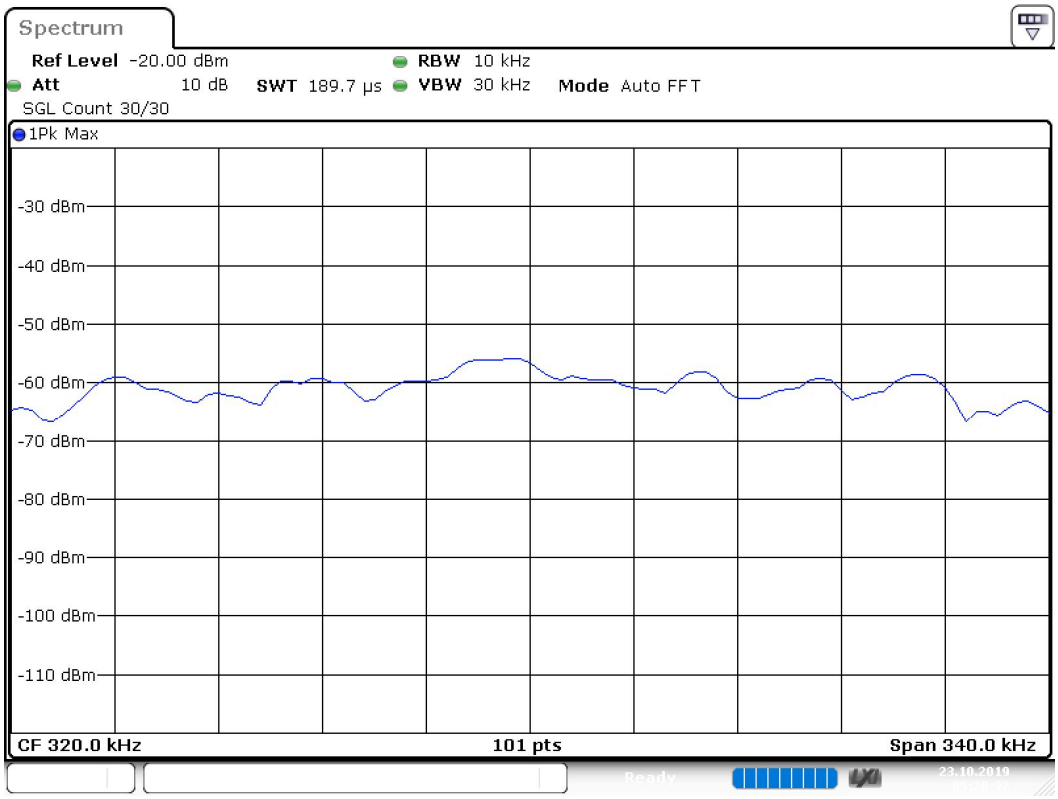
Date: 23.OCT.2019 05:20:20

Restricted Band Connector 1_2



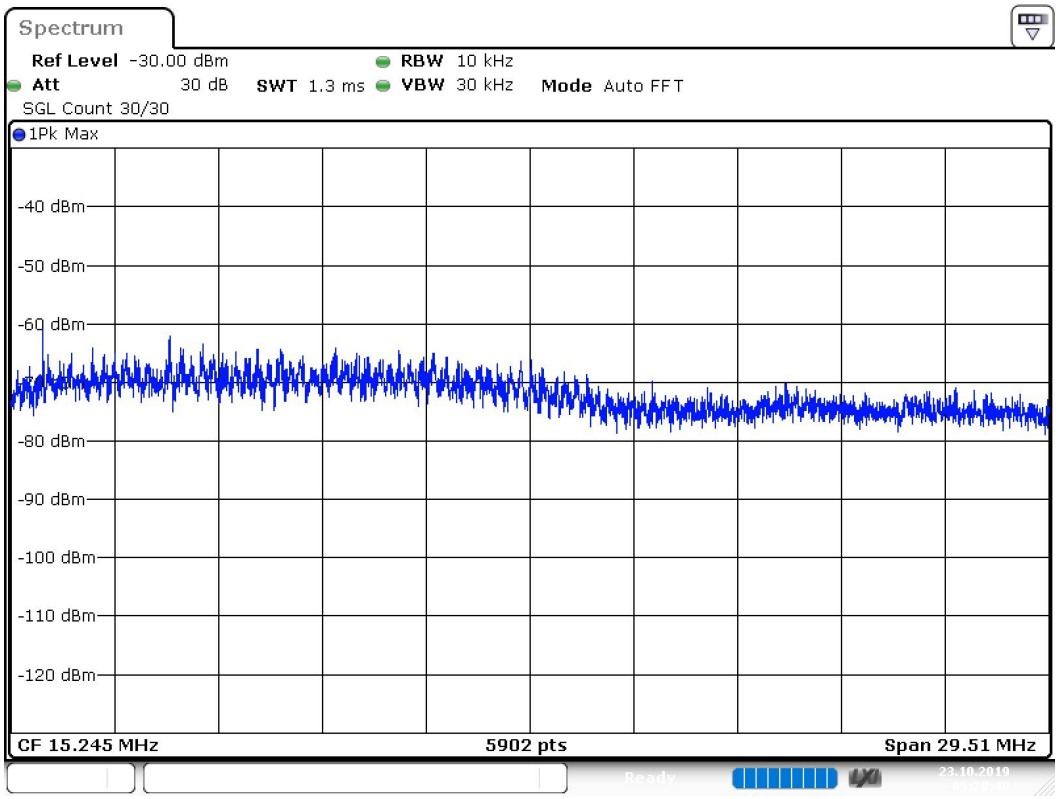
Date: 23.OCT.2019 05:20:26

Restricted Band Connector 1_3



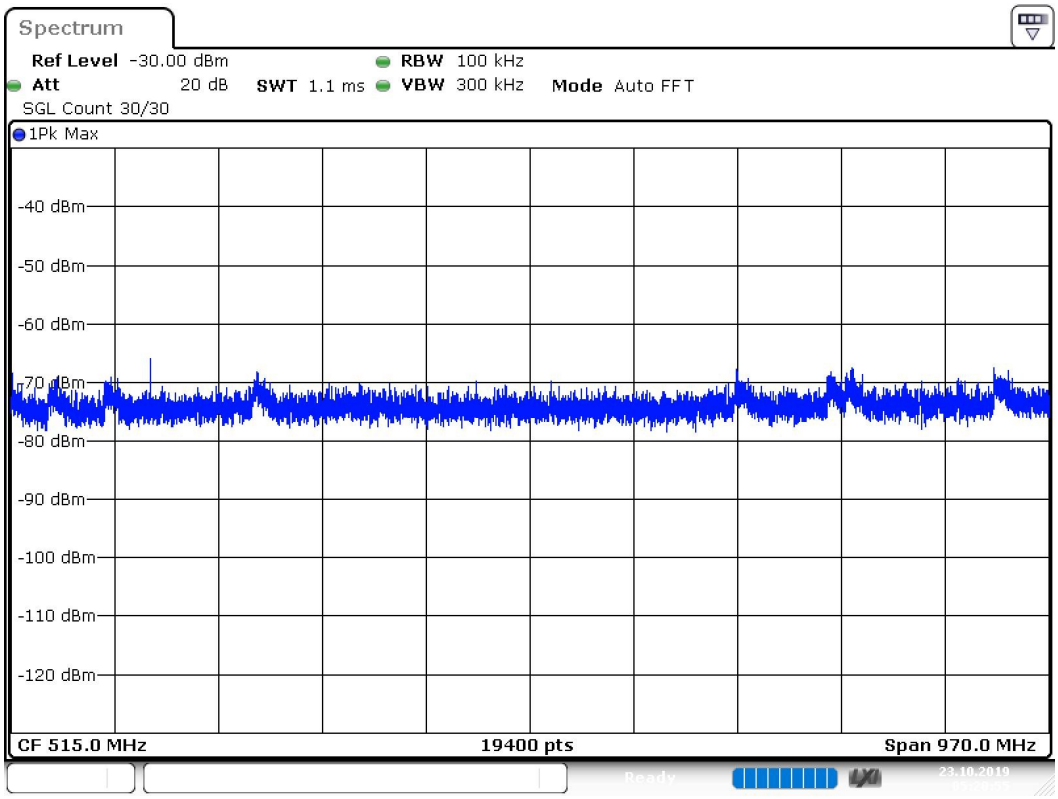
Date: 23.OCT.2019 05:20:33

Restricted Band Connector 1_4



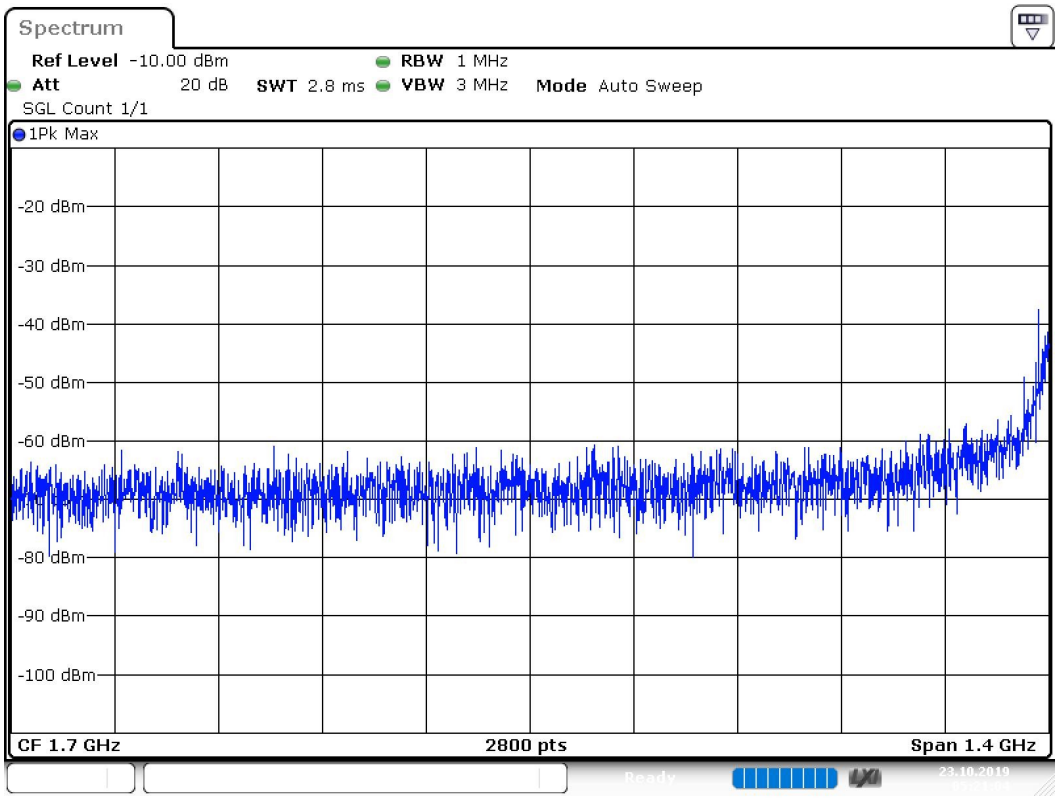
Date: 23.OCT.2019 05:20:40

Restricted Band Connector 1_5



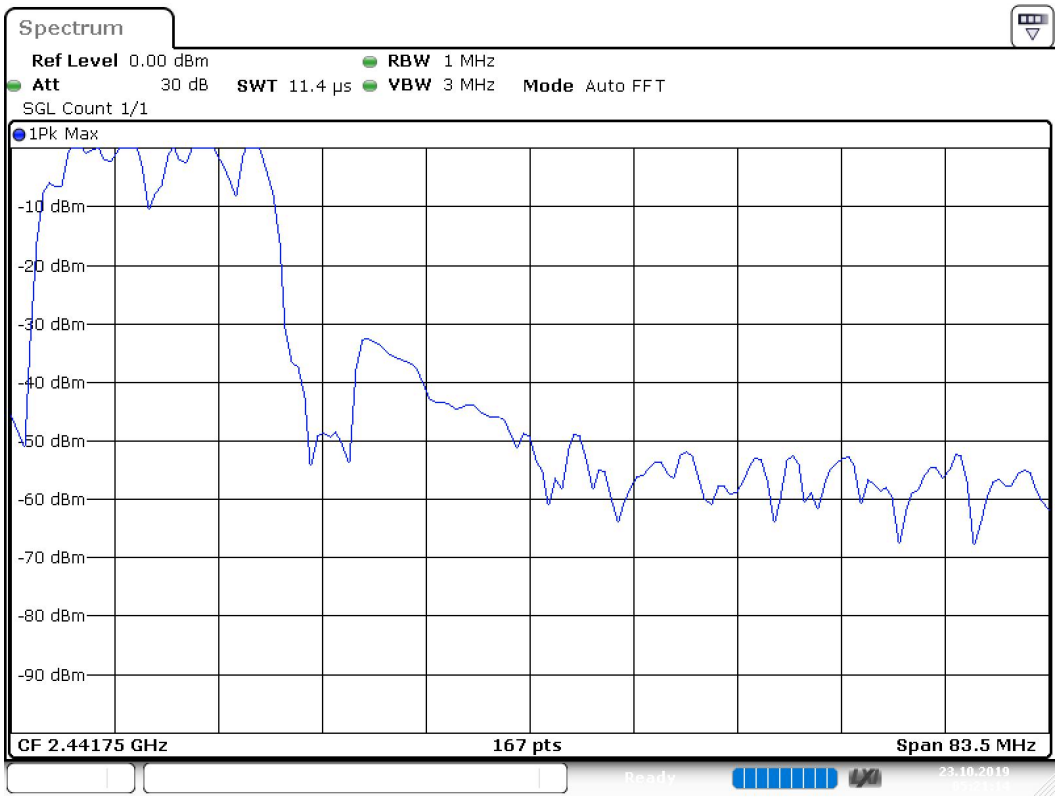
Date: 23.OCT.2019 05:20:55

Restricted Band Connector 1_6



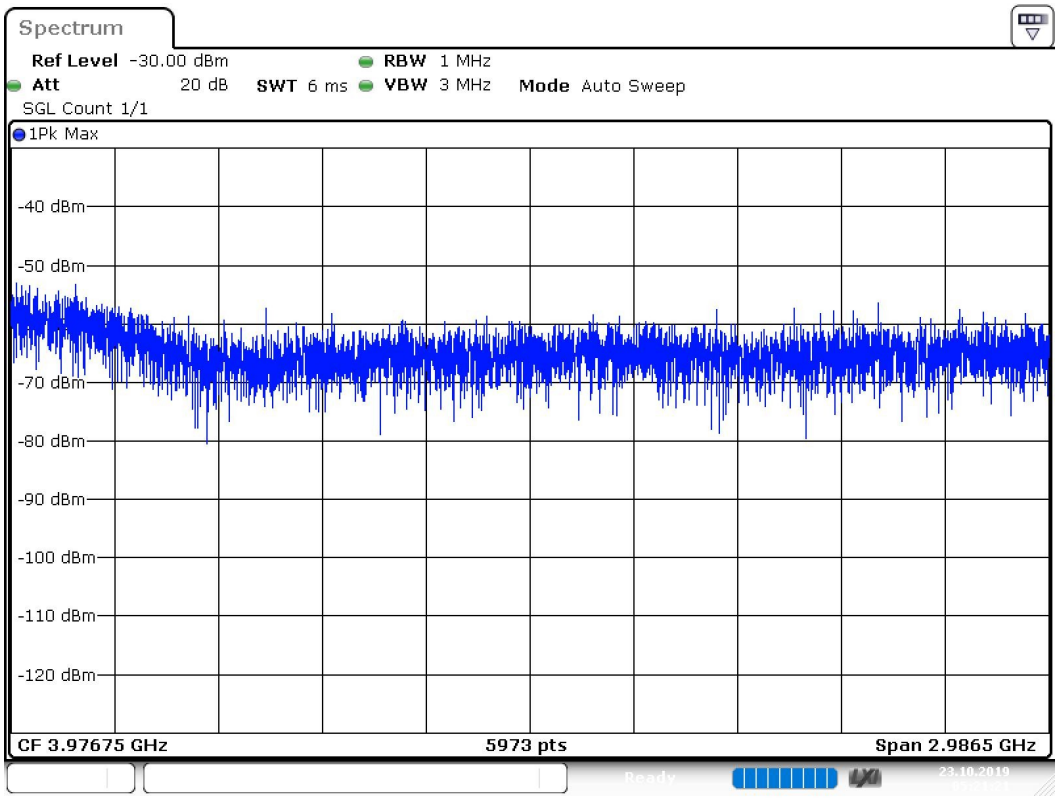
Date: 23.OCT.2019 05:21:04

Restricted Band Connector 1_7



Date: 23.OCT.2019 05:21:14

Restricted Band Connector 1_8



Date: 23.OCT.2019 05:21:22

Restricted Band Connector 1_9