

Measurement Results

1-8708/19-01-05_Annex_MR_A_1

[Test logging](#)

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IUT Summary

IUT DEFINITION	
Manufacturer	Sivantos GmbH
Type	Pure 312 X
Serial No.	Sample #2
Setup No.	NI
SW Version	D11A.F11B.07.11.41.000
HW Version	D11AF11B
Comment 1	Series D11
Comment 2	NI

IUT Common Settings	
Tlow [°C]	0
Tmid [°C]	20
Thigh [°C]	50
Vlow [V]	1
Vmid [V]	1.3
Vhigh [V]	1.5
Imax [A]	1
Auto Control enabled Power Supply Climatic Box	No No
Antenna Gain [dBi]	0
Additional Path Loss [dB]	0.8

IUT Common Settings BT Low Energy	
Intermodulation Value N	3
Image Freq. Low Mid High [MHz]	-3 -3 -3
Power Class	2
1 Mbps supported	False TXpayload 255 RXpayload 128
2 Mbps supported	False TXpayload 255 RXpayload 255
Longrange S8 supported	False TXpayload 255 RXpayload 255
Longrange S2 supported	False TXpayload 255 RXpayload 255
Signaling Settings	USB_RS232 TWO 13 B24K None S1 None On
Signaling RF Settings	RF1com 0 0 On
User Interaction	No
Switch Matrix & Pathcompensation enabled	Yes

1. Common2G4 Peak Output Power conducted 3MHz_3MHz ~ BT LE 1 Msps

Test References	
TC Start	11.07.2019 09:13:10
System Version	1.0.0.16
Test Specification	None
Test Method	
Class / TC Version / TC ID	TC_VM_Common2G4_Peak_Output_Power_Conducted_3MHz_3MHz_V01 Version: 0.0.1 TCID_Common2G4_1
My Description	Peak Output Power conducted 3MHz/3MHz - BT LE 1 Msps
Add. Information	

Test Parameter	
Technology to test	BT LE 1 Msps
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2440
Frequency high to test	True Freq [MHz] 2480
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

Test at TX 2402 MHz

RESULT: DTM Connection check

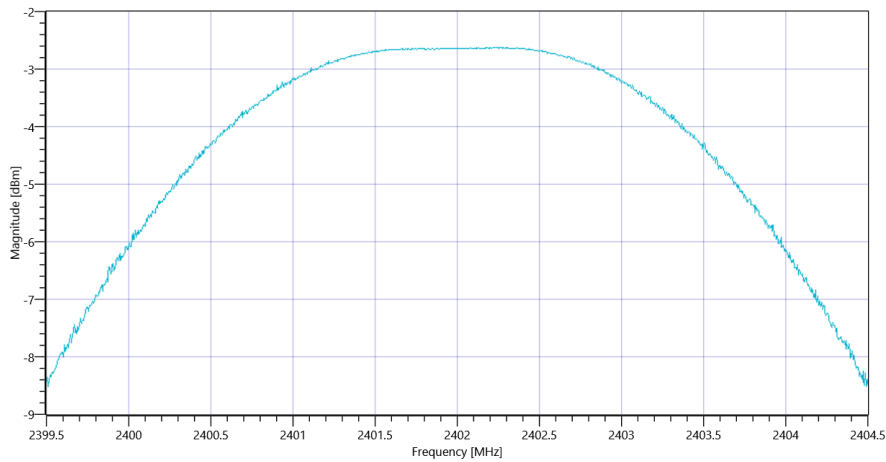
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]	8.23
Ref. Lev. offs [dB]	10.59
Input Attenuation [dB]	15
Freq. Start [MHz]	2399.500
Freq. Stop [MHz]	2404.500
Resolution BW. [MHz]	3.000000
Video BW. [MHz]	3.000000
Detector	POS
Sweep Time [ms]	1000
Sweep Points/Section	1001
Sweep Count	10
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_Common2G4_Peak_Output_Power_Conducted_3MHz_3MHz_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	-2.62	dBm	Information
Peak Power	---	1000	0.547016	mW	Information
Frequency at Peak	---	---	2402.24	MHz	Information



Plot_Common2G4 Peak Output Power conducted 3MHz_3MHz ~ BT LE 1 Msps_11072019_091335.png

Test at TX 2440 MHz

RESULT: DTM Connection check

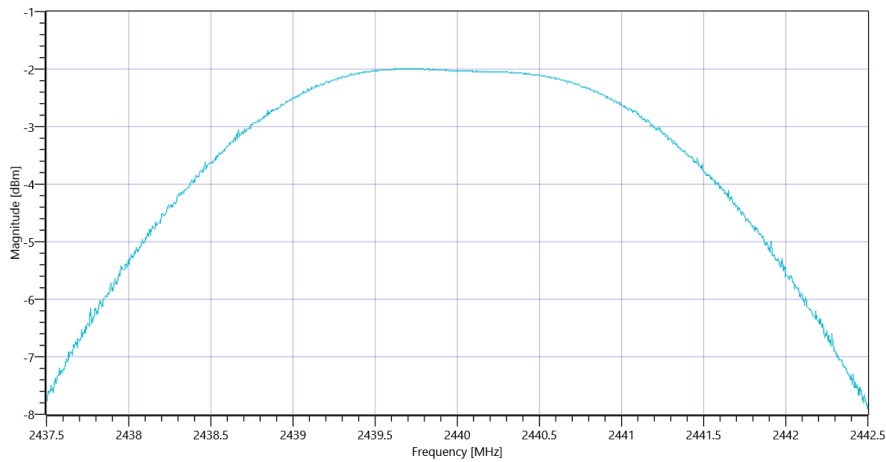
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	--	--	--	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]	8.91
Ref. Lev. offs [dB]	10.71
Input Attenuation [dB]	15
Freq. Start [MHz]	2437.500
Freq. Stop [MHz]	2442.500
Resolution BW. [MHz]	3.000000
Video BW. [MHz]	3.000000
Detector	POS
Sweep Time [ms]	1000
Sweep Points/Section	1001
Sweep Count	10
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_Common2G4_Peak_Output_Power_Conducted_3MHz_3MHz_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	--	30.00	-1.99	dBm	Information
Peak Power	--	1000	0.632412	mW	Information
Frequency at Peak	--	--	2439.76	MHz	Information



Plot_Common2G4 Peak Output Power conducted 3MHz_3MHz ~ BT LE 1 Msp_11072019_091404.png

Test at TX 2480 MHz

RESULT: DTM Connection check

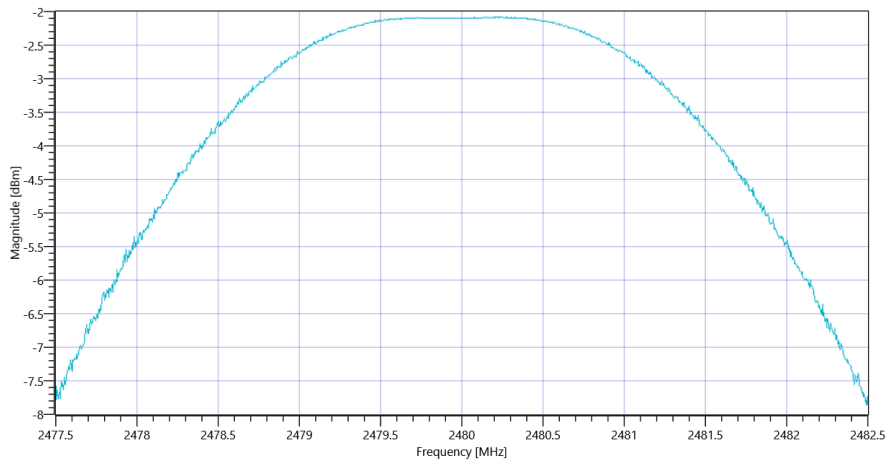
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	--	--	--	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]	8.83
Ref. Lev. offs [dB]	10.76
Input Attenuation [dB]	15
Freq. Start [MHz]	2477.500
Freq. Stop [MHz]	2482.500
Resolution BW. [MHz]	3.000000
Video BW. [MHz]	3.000000
Detector	POS
Sweep Time [ms]	1000
Sweep Points/Section	1001
Sweep Count	10
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_Common2G4_Peak_Output_Power_Conducted_3MHz_3MHz_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	--	30.00	-2.08	dBm	Information
Peak Power	--	1000	0.619441	mW	Information
Frequency at Peak	--	--	2480.28	MHz	Information



Plot_Common2G4 Peak Output Power conducted 3MHz_3MHz ~ BT LE 1 Msps_11072019_091433.png

TEST FINISHED

General Verdict

11.07.2019 09:14:33 / RT: 82 s

PASS

2. FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps

Test References	
TC Start	10.07.2019 16:22:15
System Version	1.0.0.16
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.1 RBW ≥ DTS Bandwidth
Class / TC Version / TC ID	TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 Version: 0.0.1 TCID_FCC15247_3
My Description	FCC 15.247 Maximum Peak Output Power Conducted DTS - BT LE 1 Msps
Add. Information	

Test Parameter	
Technology to test	BT LE 1 Msps
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2440
Frequency high to test	True Freq [MHz] 2480
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

Test at TX 2402 MHz

RESULT: DTM Connection check

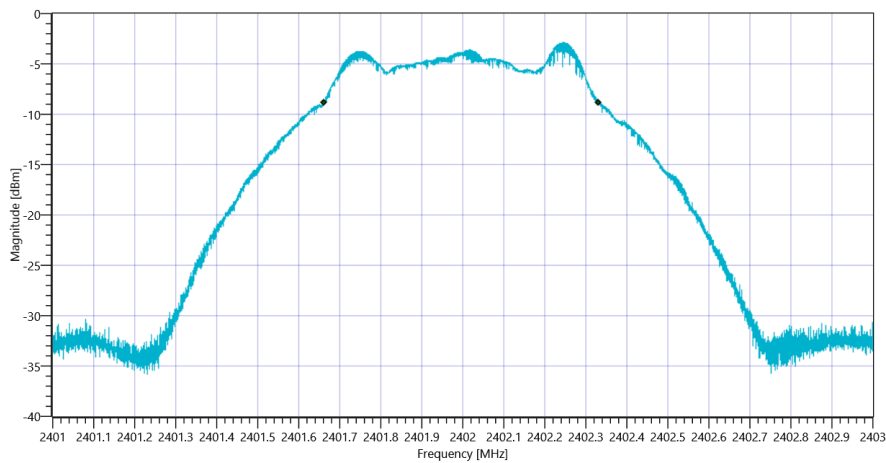
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	--	--	--	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]	2.76
Ref. Lev. offs [dB]	10.59
Input Attenuation [dB]	10
Freq. Start [MHz]	2401.000
Freq. Stop [MHz]	2403.000
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: DTS Bandwidth

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	--	--	671	kHz	Information

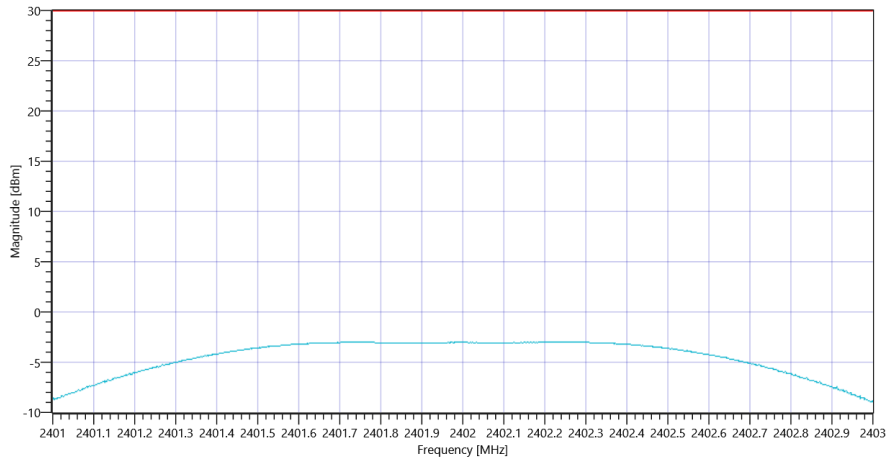


Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 MspS DTS BW _10072019_162240.png

READ SA SETTINGS:

Ref. Level [dBm]	7.76
Ref. Lev. offs [dB]	10.59
Input Attenuation [dB]	15
Freq. Start [MHz]	2401.000
Freq. Stop [MHz]	2403.000
Resolution BW. [MHz]	1.000000
Video BW. [MHz]	5.000000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	1001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	--	30.00	-3.01	dBm	PASS
Peak Power	--	1000	0.500035	mW	PASS
Frequency at Peak	--	--	2402.262	MHz	Information



Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps_10072019_162254.png

Test at TX 2440 MHz

RESULT: DTM Connection check

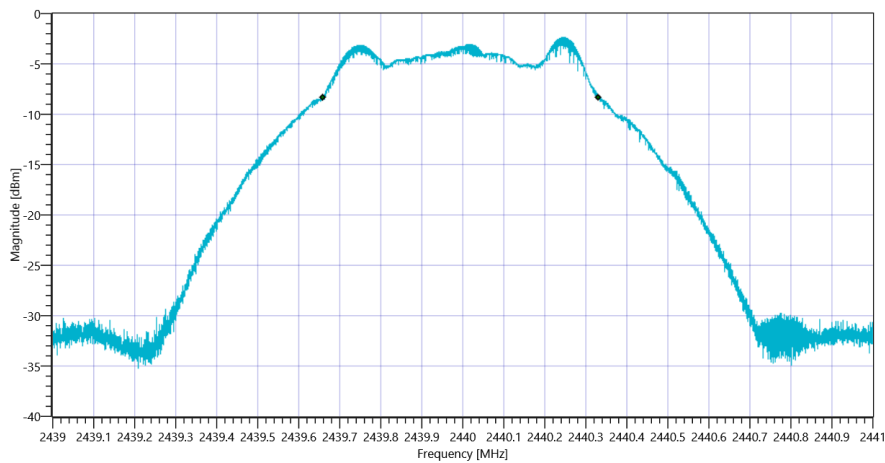
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]	3.39
Ref. Lev. offs [dB]	10.71
Input Attenuation [dB]	10
Freq. Start [MHz]	2439.000
Freq. Stop [MHz]	2441.000
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: DTS Bandwidth

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	672	kHz	Information

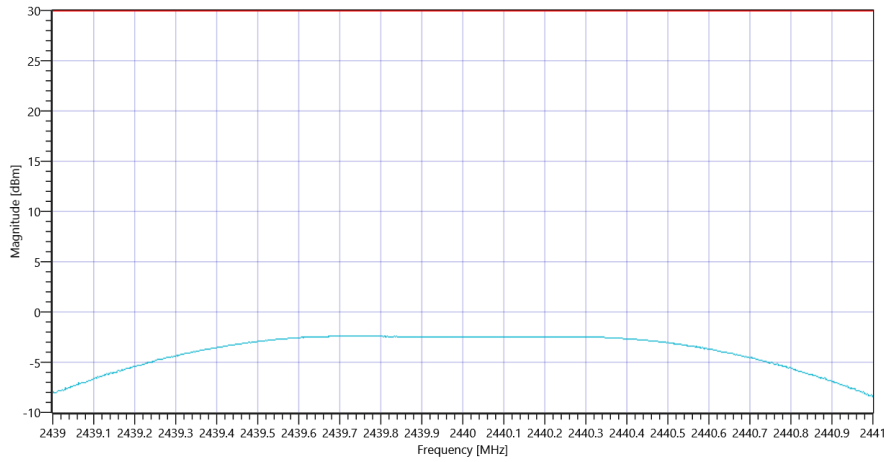


Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps DTS BW _10072019_162324.png

READ SA SETTINGS:

Ref. Level [dBm]	8.39
Ref. Lev. offs [dB]	10.71
Input Attenuation [dB]	15
Freq. Start [MHz]	2439.000
Freq. Stop [MHz]	2441.000
Resolution BW. [MHz]	1.000000
Video BW. [MHz]	5.000000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	1001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	--	30.00	-2.41	dBm	PASS
Peak Power	--	1000	0.574116	mW	PASS
Frequency at Peak	--	--	2439.746	MHz	Information



Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps_10072019_162339.png

Test at TX 2480 MHz

RESULT: DTM Connection check

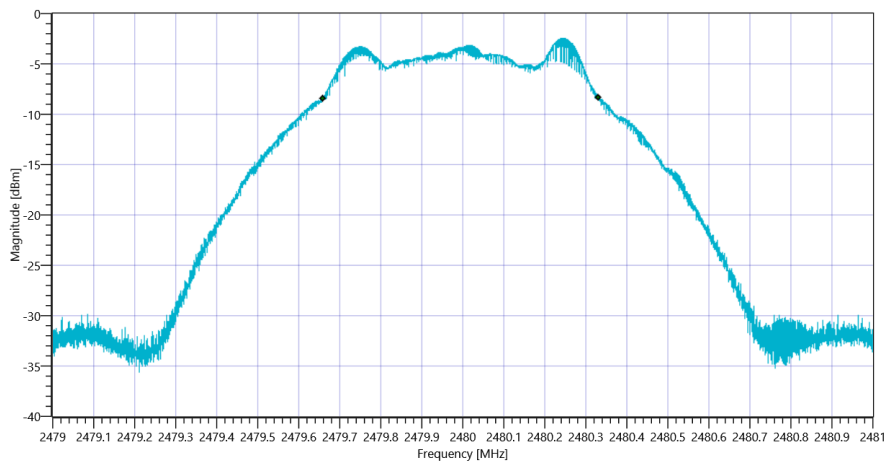
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]	3.35
Ref. Lev. offs [dB]	10.76
Input Attenuation [dB]	10
Freq. Start [MHz]	2479.000
Freq. Stop [MHz]	2481.000
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: DTS Bandwidth

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	671	kHz	Information

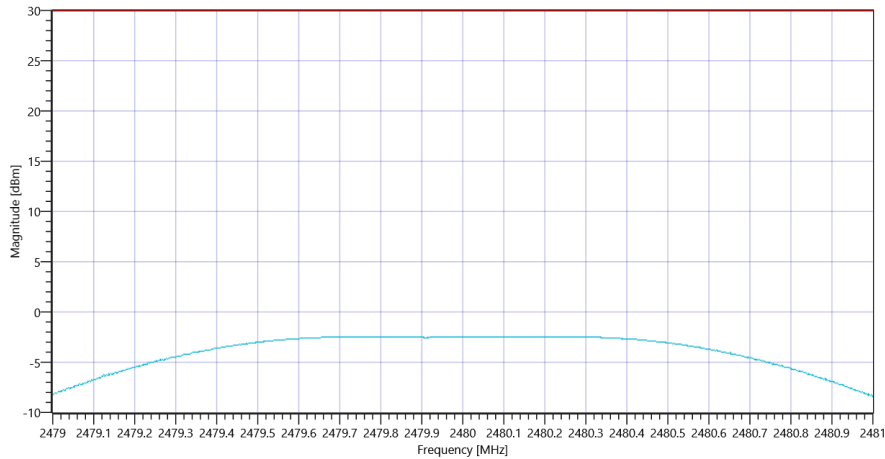


Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 MspS DTS BW _10072019_162408.png

READ SA SETTINGS:

Ref. Level [dBm]	8.35
Ref. Lev. offs [dB]	10.76
Input Attenuation [dB]	15
Freq. Start [MHz]	2479.000
Freq. Stop [MHz]	2481.000
Resolution BW. [MHz]	1.000000
Video BW. [MHz]	5.000000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	1001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	--	30.00	-2.47	dBm	PASS
Peak Power	--	1000	0.566239	mW	PASS
Frequency at Peak	--	--	2480.234	MHz	Information



Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps_10072019_162423.png

TEST FINISHED		
General Verdict	10.07.2019 16:24:23 / RT: 127 s	PASS

3. FCC Part 15.247 Bandwidth 6dB DTS ~ BT LE 1 Msp/s

Test References	
TC Start	10.07.2019 16:24:27
System Version	1.0.0.16
Test Specification	FCC Part 15.247
Test Method	99
Class / TC Version / TC ID	TC_VM_FCC15247_Bandwidth_6dB_DTS_V01 Version: 0.0.1 TCID_FCC15247_1
My Description	FCC 15.247 Bandwidth 6dB DTS - BT LE 1 Msp/s
Add. Information	

Test Parameter	
Technology to test	BT LE 1 Msp/s
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2440
Frequency high to test	True Freq [MHz] 2480
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

Test at TX 2402 MHz

RESULT: DTM Connection check

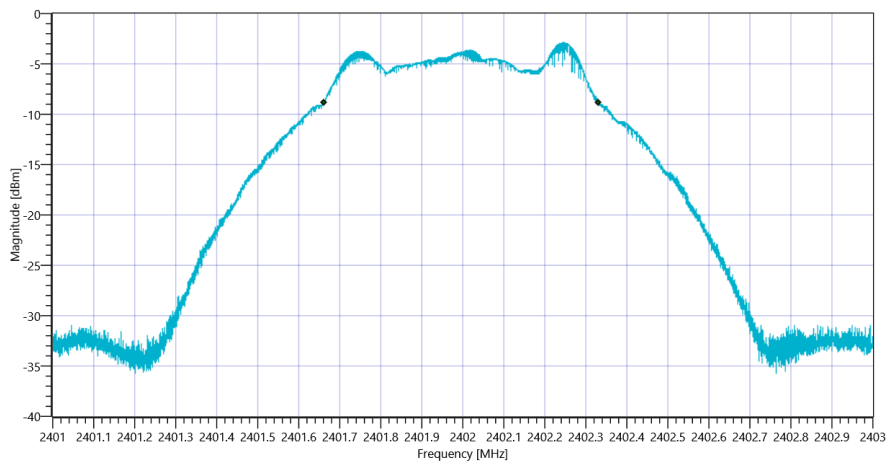
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]	3.11
Ref. Lev. offs [dB]	10.59
Input Attenuation [dB]	10
Freq. Start [MHz]	2401.000
Freq. Stop [MHz]	2403.000
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	671	kHz	PASS



Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ BT LE 1 Msps_10072019_162452.png

Test at TX 2440 MHz

RESULT: DTM Connection check

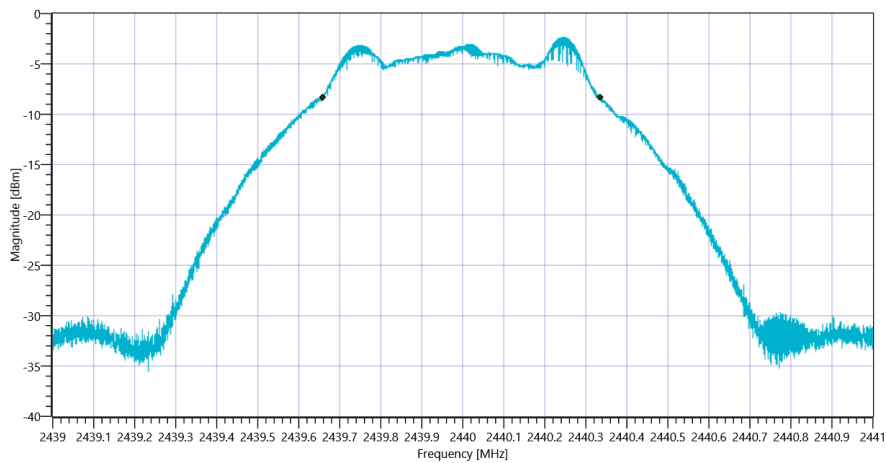
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	--	--	--	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]	3.33
Ref. Lev. offs [dB]	10.71
Input Attenuation [dB]	10
Freq. Start [MHz]	2439.000
Freq. Stop [MHz]	2441.000
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	--	675	kHz	PASS



Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ BT LE 1 Msps_10072019_162521.png

Test at TX 2480 MHz

RESULT: DTM Connection check

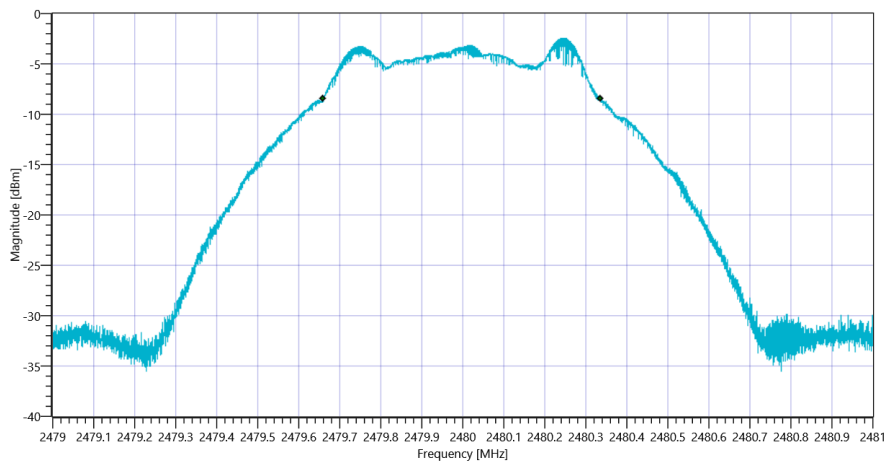
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]	3.20
Ref. Lev. offs [dB]	10.76
Input Attenuation [dB]	10
Freq. Start [MHz]	2479.000
Freq. Stop [MHz]	2481.000
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	675	kHz	PASS



TEST FINISHED

General Verdict

10.07.2019 16:25:50 / RT: 83 s

PASS

4. FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 1 Msps

Test References	
TC Start	10.07.2019 16:25:54
System Version	1.0.0.16
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission
Class / TC Version / TC ID	TC_VM_FCC15247_Peak_Power_Spectral_Density_DTS_V01 Version: 0.0.1 TCID_FCC15247_6
My Description	FCC 15.247 Peak Power Spectral Density DTS - BT LE 1 Msps
Add. Information	

Test Parameter	
Technology to test	BT LE 1 Msps
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2440
Frequency high to test	True Freq [MHz] 2480
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

Test at TX 2402 MHz

RESULT: DTM Connection check

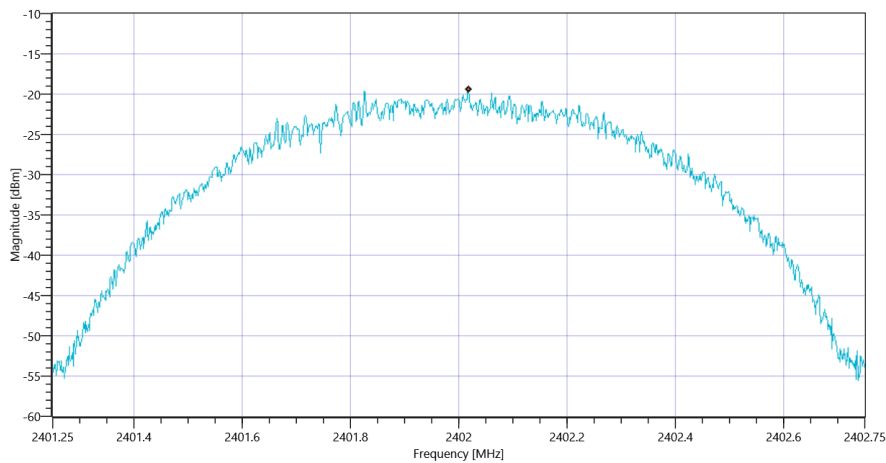
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	--	--	--	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]	2.87
Ref. Lev. offs [dB]	10.59
Input Attenuation [dB]	10
Freq. Start [MHz]	2401.250
Freq. Stop [MHz]	2402.750
Resolution BW. [MHz]	0.003000
Video BW. [MHz]	0.010000
Detector	POS
Sweep Time [ms]	1000
Sweep Points/Section	1001
Sweep Count	20
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Peak_Power_Spectral_Density_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	--	8	-19.39	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 1 Msps_10072019_162629.png

Test at TX 2440 MHz

RESULT: DTM Connection check

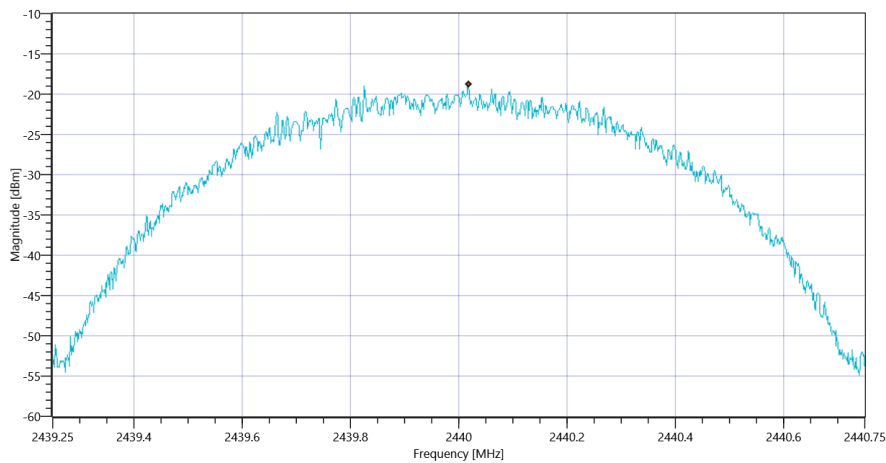
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	--	--	--	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]			3.41		
Ref. Lev. offs [dB]			10.71		
Input Attenuation [dB]			10		
Freq. Start [MHz]			2439.250		
Freq. Stop [MHz]			2440.750		
Resolution BW. [MHz]			0.003000		
Video BW. [MHz]			0.010000		
Detector			POS		
Sweep Time [ms]			1000		
Sweep Points/Section			1001		
Sweep Count			20		
Sweep Mode			MAXH		
Used Sweep Type			SWE		

RESULT: TC_VM_FCC15247_Peak_Power_Spectral_Density_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	--	8	-18.87	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 1 Msps_10072019_162707.png

Test at TX 2480 MHz

RESULT: DTM Connection check

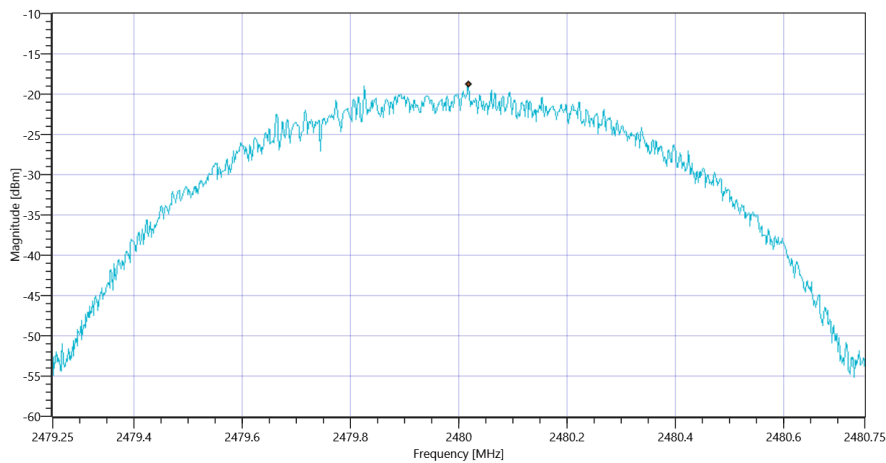
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	--	--	--	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]			3.27		
Ref. Lev. offs [dB]			10.76		
Input Attenuation [dB]			10		
Freq. Start [MHz]			2479.250		
Freq. Stop [MHz]			2480.750		
Resolution BW. [MHz]			0.003000		
Video BW. [MHz]			0.010000		
Detector			POS		
Sweep Time [ms]			1000		
Sweep Points/Section			1001		
Sweep Count			20		
Sweep Mode			MAXH		
Used Sweep Type			SWE		

RESULT: TC_VM_FCC15247_Peak_Power_Spectral_Density_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	--	8	-18.86	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 1 Msps_10072019_162746.png

TEST FINISHED

General Verdict

10.07.2019 16:27:46 / RT: 111 s

PASS

5. FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps

Test References	
TC Start	10.07.2019 16:27:50
System Version	1.0.0.16
Test Specification	FCC Part 15.247
Test Method	
Class / TC Version / TC ID	TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 Version: 0.0.2 TCID_FCC15247_2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - BT LE 1 Msps
Add. Information	

Test Parameter	
Technology to test	BT LE 1 Msps
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2440
Frequency high to test	True Freq [MHz] 2480
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

Test at TX 2402 MHz

RESULT: DTM Connection check

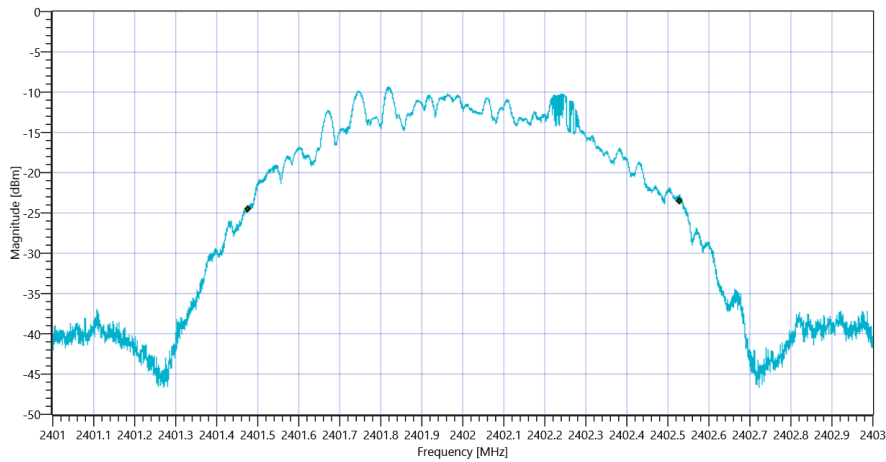
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	--	--	--	--	PASS

READ SA SETTINGS:

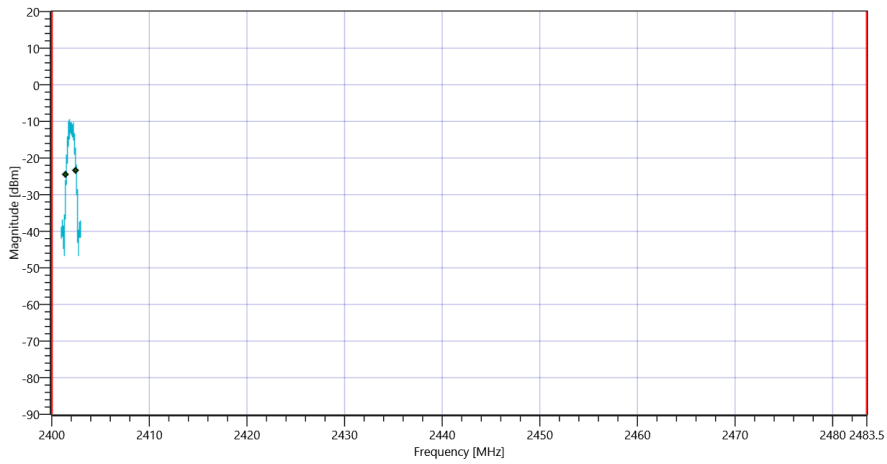
Ref. Level [dBm]	2.79
Ref. Lev. offs [dB]	10.59
Input Attenuation [dB]	10
Freq. Start [MHz]	2401.000
Freq. Stop [MHz]	2403.000
Resolution BW. [MHz]	0.020000
Video BW. [MHz]	0.050000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	--	--	1053	kHz	Information
T1 99%	2400.000000	--	2401.4765	MHz	PASS
T2 99%	--	2483.500000	2402.5293	MHz	PASS



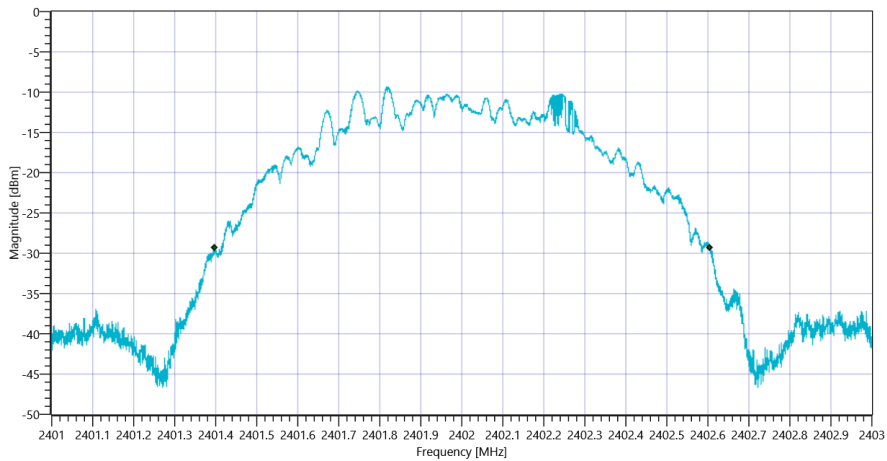
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps 99PCT_10072019_162815.png



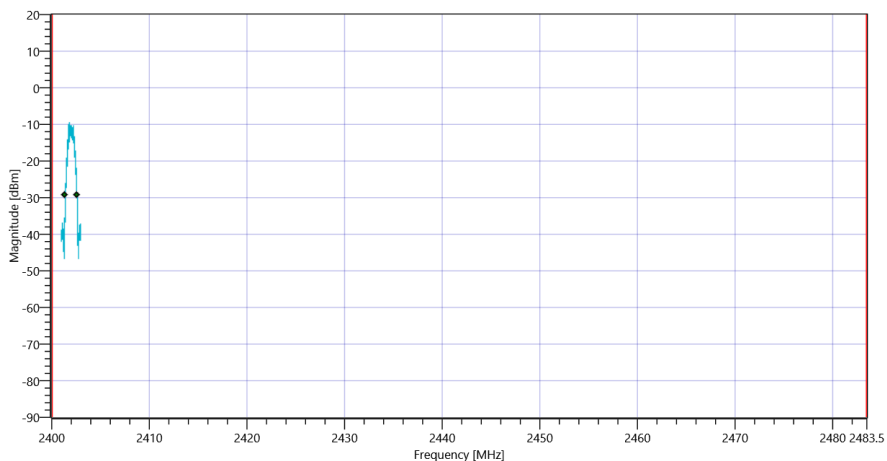
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps_10072019_162818.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	--	--	1209	kHz	Information
T1 20dB	2400.000000	--	2401.3966	MHz	PASS
T2 20dB	--	2483.500000	2402.6052	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps 20dB_10072019_162821.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps_10072019_162824.png

Test at TX 2440 MHz

RESULT: DTM Connection check

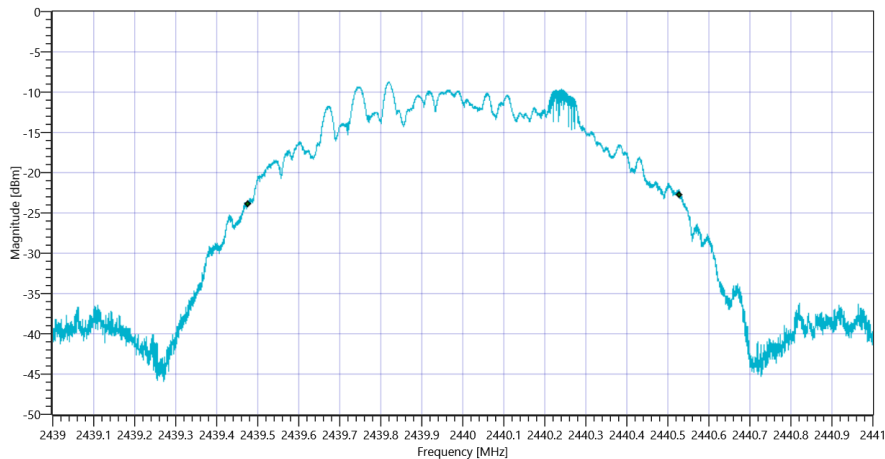
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	--	--	--	--	PASS

READ SA SETTINGS:

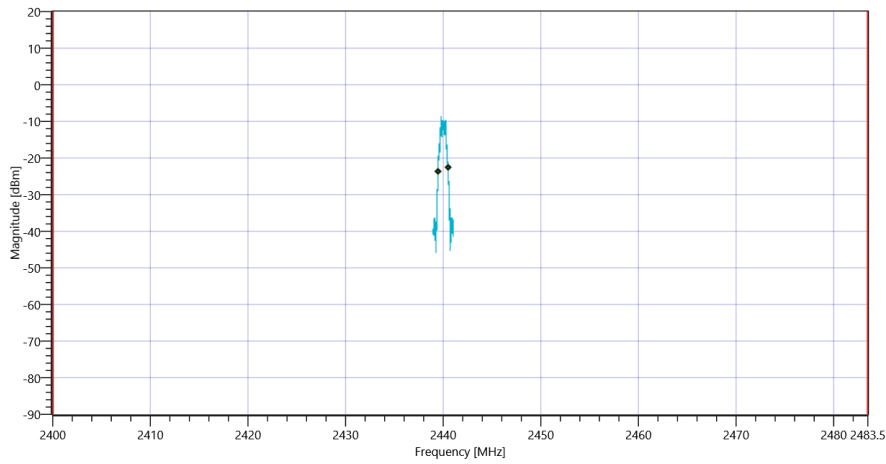
Ref. Level [dBm]	3.51
Ref. Lev. offs [dB]	10.71
Input Attenuation [dB]	10
Freq. Start [MHz]	2439.000
Freq. Stop [MHz]	2441.000
Resolution BW. [MHz]	0.020000
Video BW. [MHz]	0.050000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	--	--	1052	kHz	Information
T1 99%	2400.000000	--	2439.4759	MHz	PASS
T2 99%	--	2483.500000	2440.5281	MHz	PASS



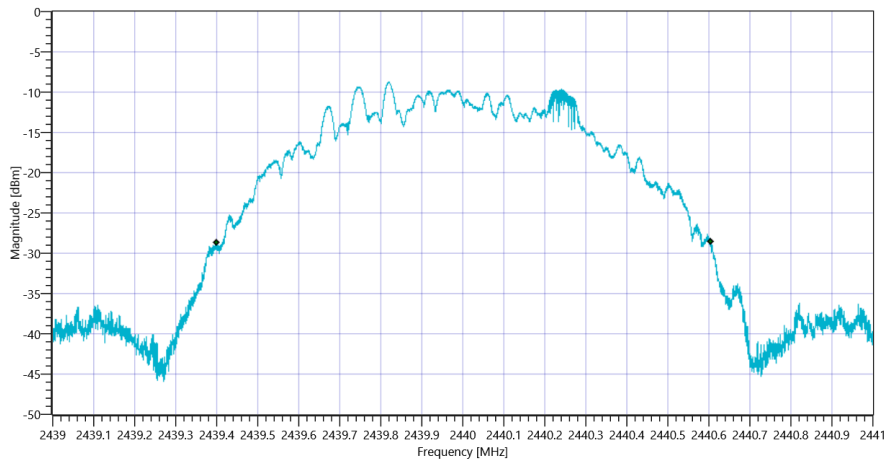
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps 99PCT_10072019_162854.png



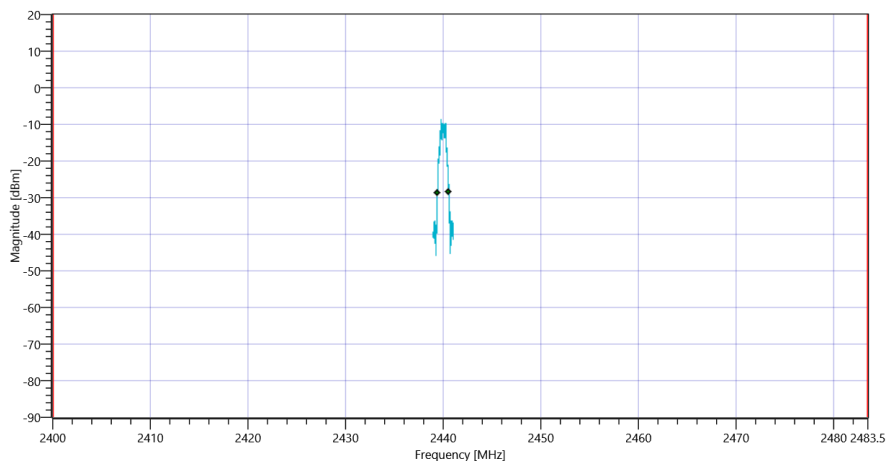
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 MspS_10072019_162857.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	--	--	1204	kHz	Information
T1 20dB	2400.000000	--	2439.4004	MHz	PASS
T2 20dB	--	2483.500000	2440.6048	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 MspS 20dB_10072019_162901.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 MspS_10072019_162904.png

Test at TX 2480 MHz

RESULT: DTM Connection check

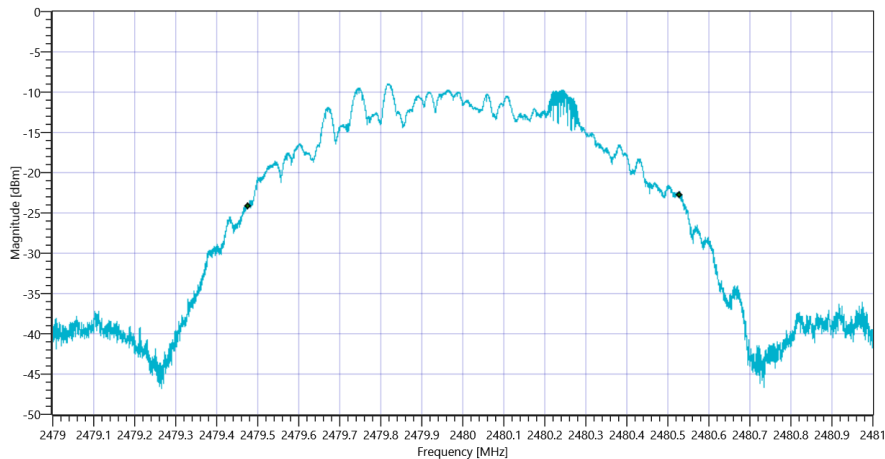
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	--	--	--	--	PASS

READ SA SETTINGS:

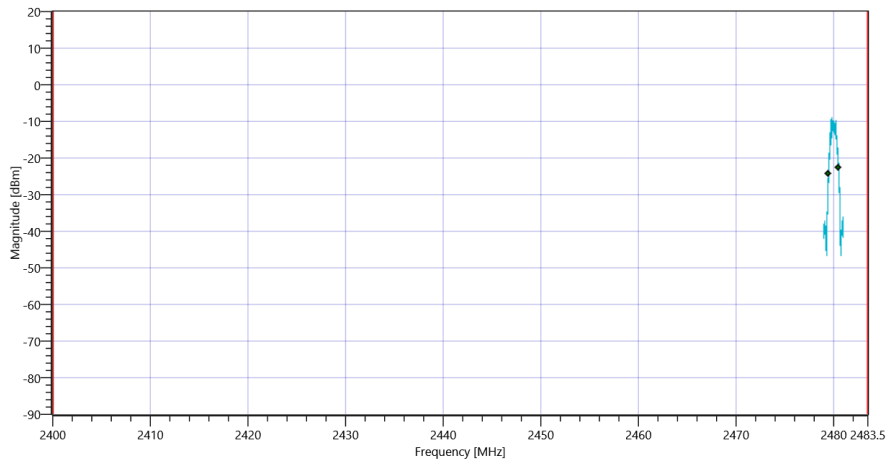
Ref. Level [dBm]	3.32
Ref. Lev. offs [dB]	10.76
Input Attenuation [dB]	10
Freq. Start [MHz]	2479.000
Freq. Stop [MHz]	2481.000
Resolution BW. [MHz]	0.020000
Video BW. [MHz]	0.050000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	--	--	1051	kHz	Information
T1 99%	2400.000000	--	2479.4775	MHz	PASS
T2 99%	--	2483.500000	2480.5281	MHz	PASS



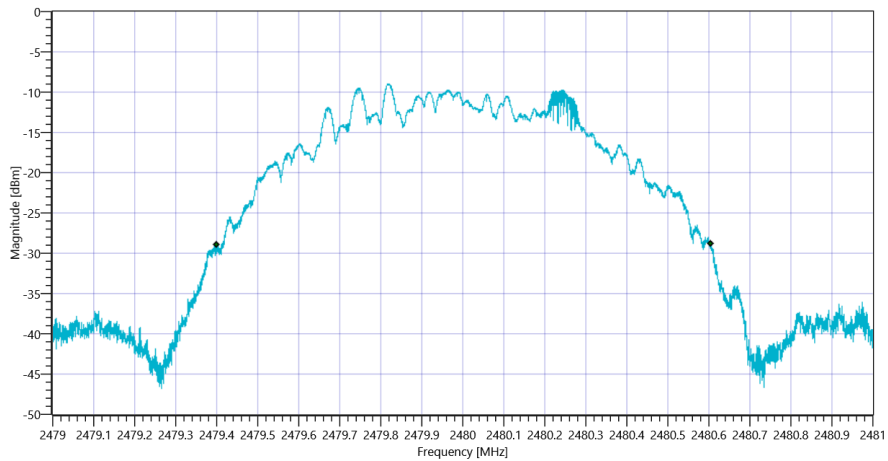
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps 99PCT_10072019_162934.png



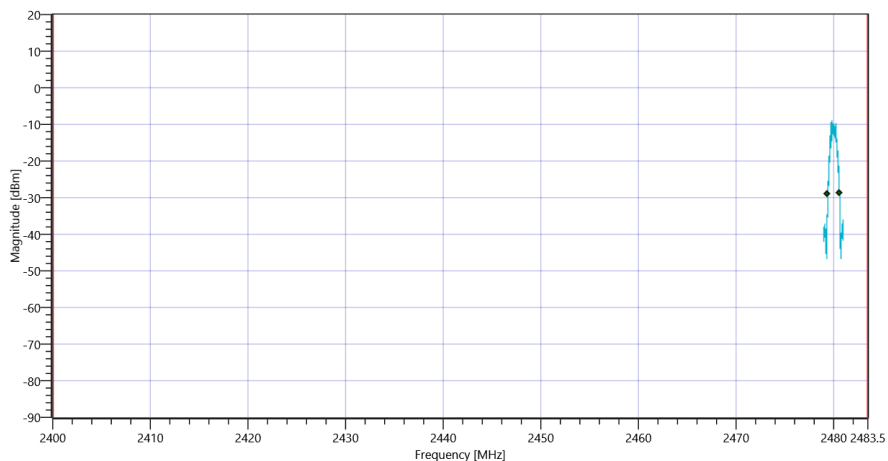
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msp_10072019_162937.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	--	--	1203	kHz	Information
T1 20dB	2400.000000	--	2479.4010	MHz	PASS
T2 20dB	--	2483.500000	2480.6044	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msp_10072019_162941.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msp_10072019_162944.png

TEST FINISHED

General Verdict

10.07.2019 16:29:44 / RT: 114 s

PASS

6. FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msp

Test References	
TC Start	10.07.2019 16:29:48
System Version	1.0.0.16
Test Specification	FCC Part 15.247
Test Method	IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable.
Class / TC Version / TC ID	TC_VM_FCC15247_TX_Emissions_Conducted_V01 Version: 0.0.1 TCID_FCC15247_8
My Description	FCC 15.247 TX Emissions Conducted DTS - BT LE 1 Msp
Add. Information	

Test Parameter	
Technology to test	BT LE 1 Msp
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2440
Frequency high to test	True Freq [MHz] 2480
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

Test at TX 2402 MHz

RESULT: DTM Connection check

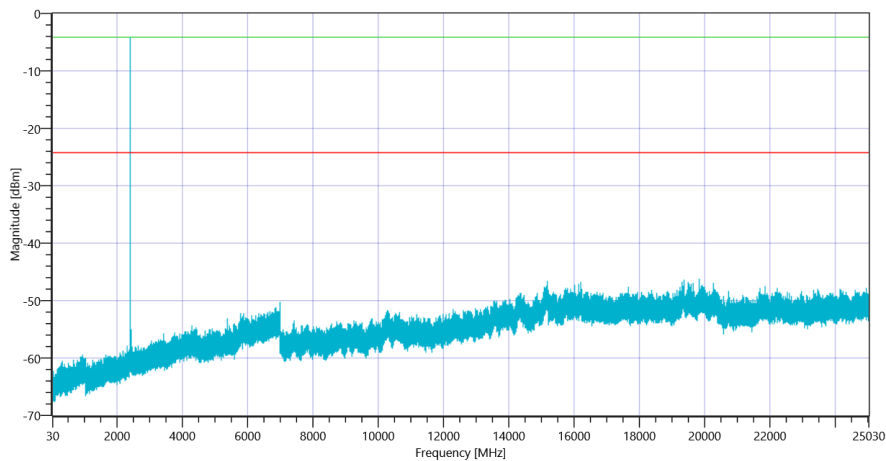
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:

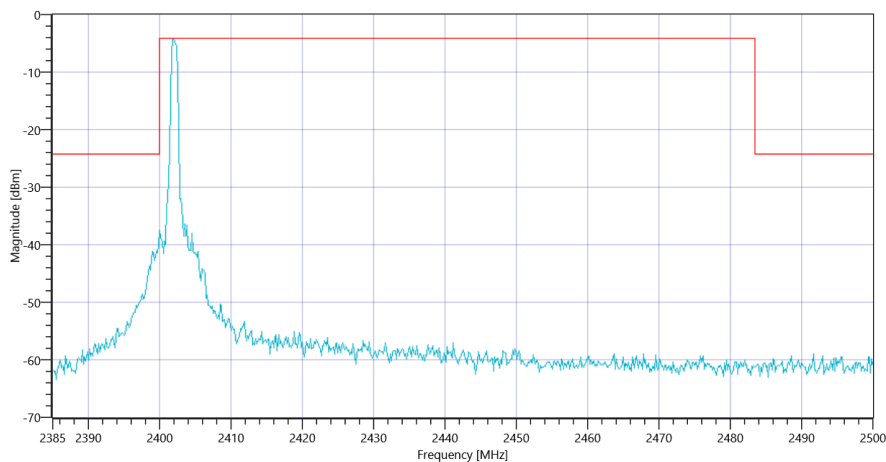
Ref. Level [dBm]	3.32
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	500
Sweep Points/Section	3001
Sweep Count	8
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2402.00 MHz	---	---	-4.20	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2402_10072019_163430.png



Plot_FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2402_10072019_163432.png

Test at TX 2440 MHz

RESULT: DTM Connection check

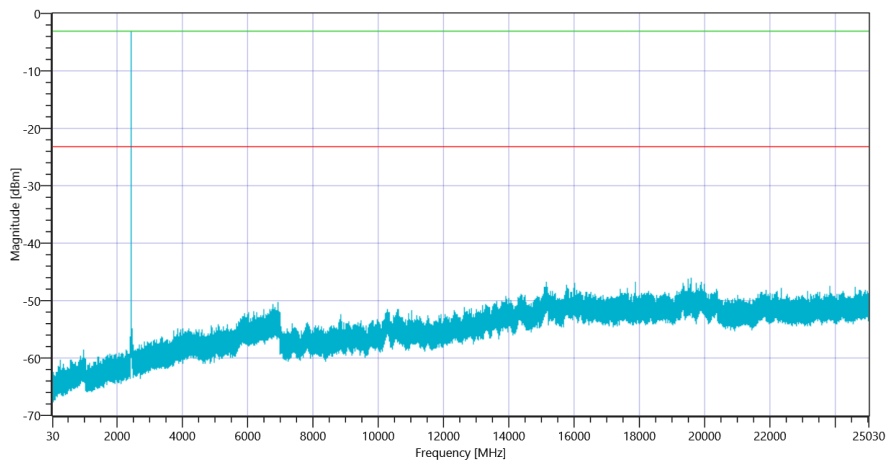
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:

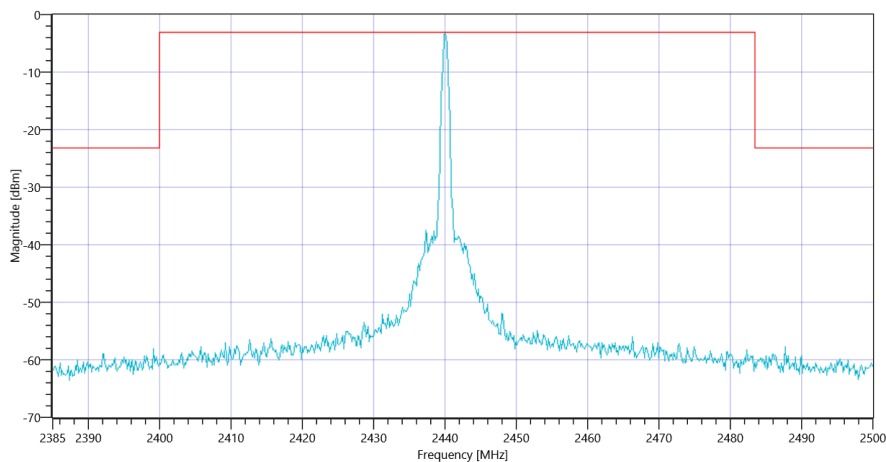
Ref. Level [dBm]	4.19
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	500
Sweep Points/Section	3001
Sweep Count	8
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2440.00 MHz	---	---	-3.13	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2440_10072019_163919.png



Plot_FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2440_10072019_163921.png

Test at TX 2480 MHz

RESULT: DTM Connection check

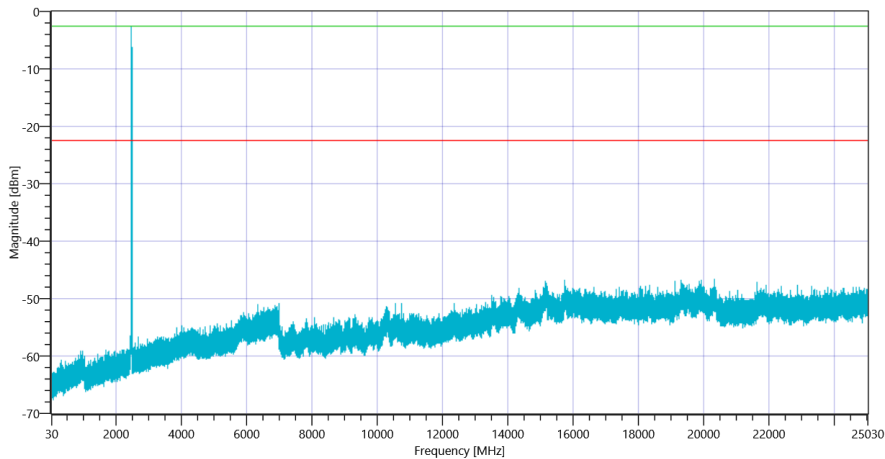
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:

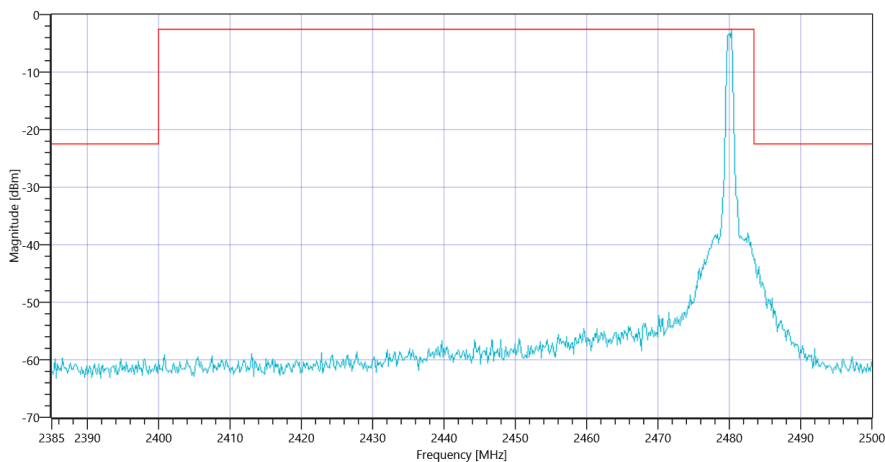
Ref. Level [dBm]	3.81
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	500
Sweep Points/Section	3001
Sweep Count	8
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2480.33 MHz	---	---	-2.48	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2480_10072019_164408.png



Plot_FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2480_10072019_164411.png

TEST FINISHED

General Verdict

10.07.2019 16:44:12 / RT: 863 s

PASS

- END OF DOCUMENT -
