

Measurement Results

1-8743/19-02-03_Annex_MR_A_1

[Test logging](#)

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EUT Summary

IUT DEFINITION	
Type	AutoTouch Wireless
Serial No. Setup No.	Sample 1 1.0
SW Version HW Version	FW 1.0.3 AMG00044070-100-BOM AT WRL Bill Of Material R
Comment 1 2	Needle-based auto-injector

IUT Common Settings	
Tlow Tmid Thigh [°C]	10 20 40
Vlow Vmid Vhigh [V] @Imax [A]	3 3 3 @1
Auto Control enabled Power Supply Climatic Box	No No
Antenna Gain [dBi]	0

Additional Path Loss [dB]

0.7

IUT Common Settings BT Low Energy	
Intermodulation Value N	3
Image Freq. Low Mid High [MHz]	0 0 0
Power Class	2
1 Mbps supported	True TXpayload 255 RXpayload 255
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 TW0 10 B19K 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	21.08.2019 16:35:53
System Version	1.0.0.17
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
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

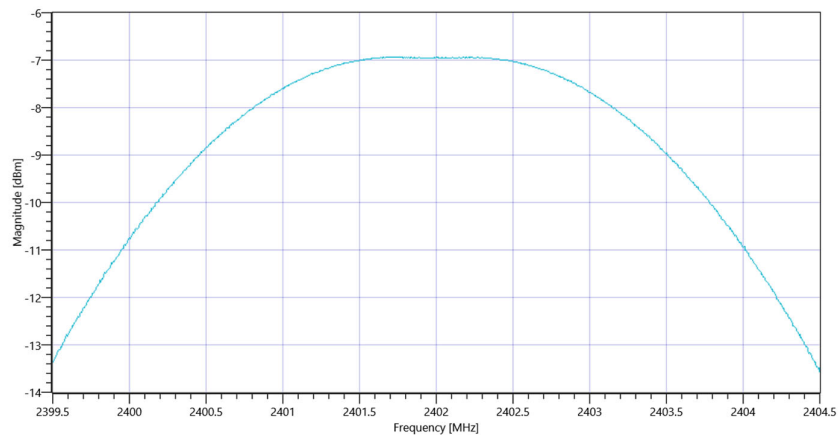
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]	3.15
Ref. Lev. offs [dB]	10.49
Input Attenuation [dB]	10
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	-6.93	dBm	Information
Peak Power	---	1000	0.202768	mW	Information
Frequency at Peak	---	---	2401.675	MHz	Information



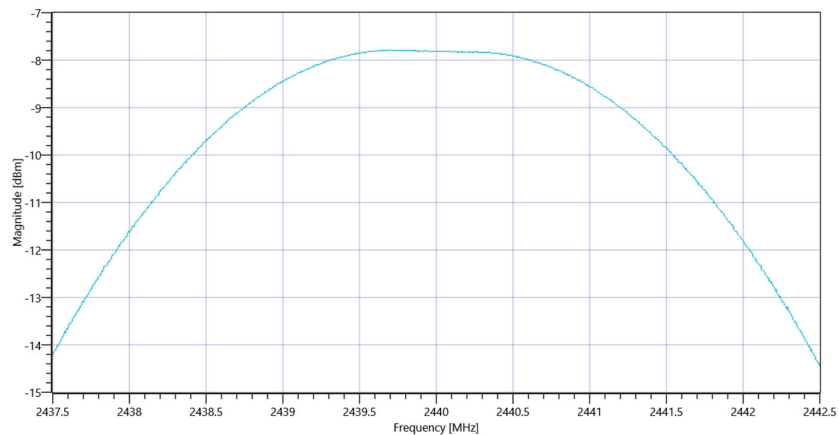
Plot_Common2G4 Peak Output Power conducted 3MHz_3MHz ~ BT LE 1 Msps_21082019_163618.png

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]	2.26
Ref. Lev. offs [dB]	10.61
Input Attenuation [dB]	10
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	-7.78	dBm	Information
Peak Power	---	1000	0.166725	mW	Information
Frequency at Peak	---	---	2439.7	MHz	Information



Plot_Common2G4 Peak Output Power conducted 3MHz_3MHz ~ BT LE 1 Msps_21082019_163646.png

Test at TX 2480 MHz

RESULT: DTM Connection check

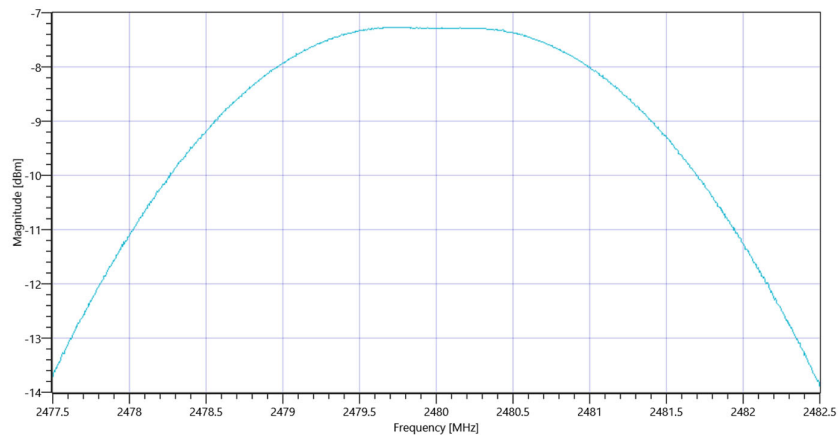
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]	2.79
Ref. Lev. offs [dB]	10.66
Input Attenuation [dB]	10
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	-7.27	dBm	Information
Peak Power	---	1000	0.187499	mW	Information
Frequency at Peak	---	---	2479.75	MHz	Information



TEST FINISHED

General Verdict

21.08.2019 16:37:15 / RT: 82 s

PASS

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

Test References	
TC Start	21.08.2019 16:37:19
System Version	1.0.0.17
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	

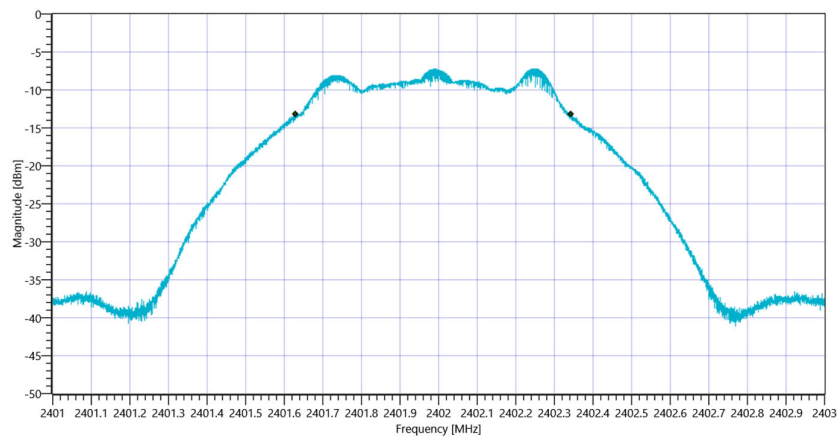
Test Parameter	
Technology to test	BT LE 1 Msps
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2440
Frequency high to test	True Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: 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]	-1.88
Ref. Lev. offs [dB]	10.49
Input Attenuation [dB]	5
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

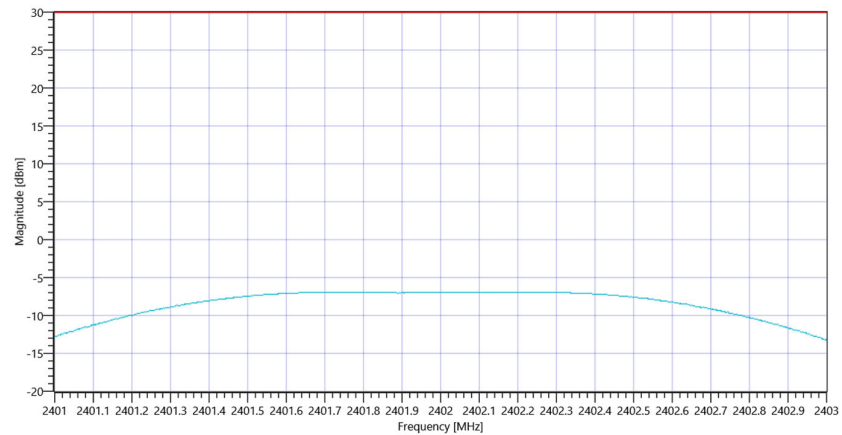
RESULT: DTS Bandwidth					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	714	kHz	Information



Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps DTS BW_21082019_163744.png

READ SA SETTINGS:	
Ref. Level [dBm]	3.12
Ref. Lev. offs [dB]	10.49
Input Attenuation [dB]	10
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	-6.95	dBm	PASS
Peak Power	---	1000	0.201837	mW	PASS
Frequency at Peak	---	---	2402.244	MHz	Information



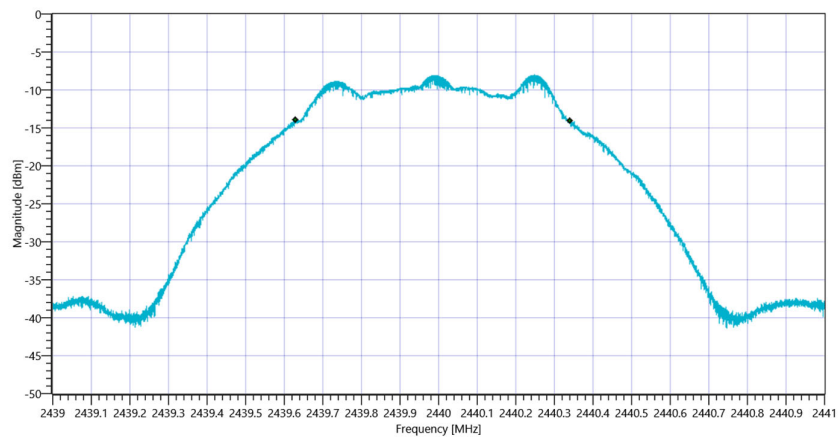
Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps_21082019_163758.png

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]	-2.67
Ref. Lev. offs [dB]	10.61
Input Attenuation [dB]	5
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

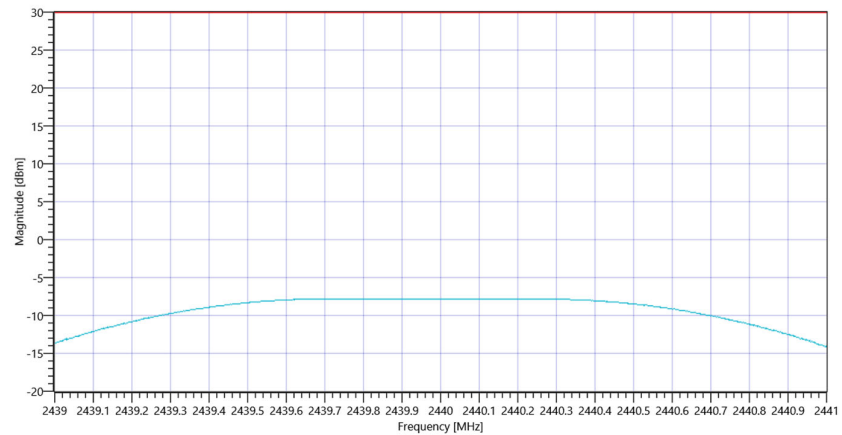
RESULT: DTS Bandwidth					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	710	kHz	Information



Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps DTS BW_21082019_163828.png

READ SA SETTINGS:	
Ref. Level [dBm]	2.33
Ref. Lev. offs [dB]	10.61
Input Attenuation [dB]	10
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	-7.79	dBm	PASS
Peak Power	---	1000	0.166341	mW	PASS
Frequency at Peak	---	---	2439.728	MHz	Information



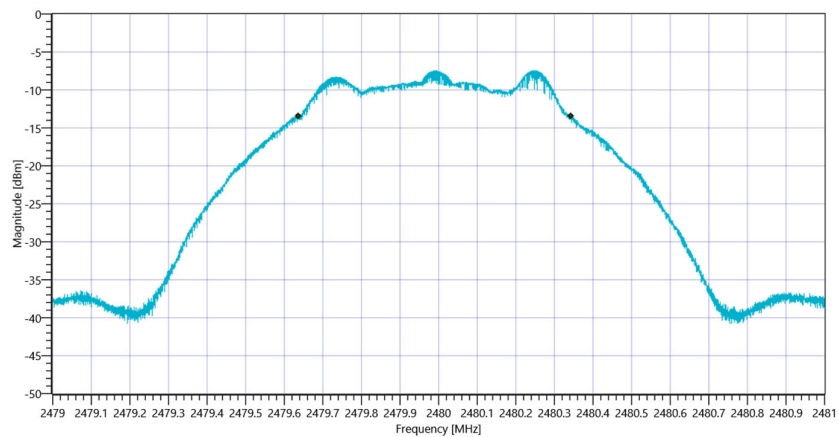
Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps_21082019_163843.png

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]	-2.24
Ref. Lev. offs [dB]	10.66
Input Attenuation [dB]	5
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

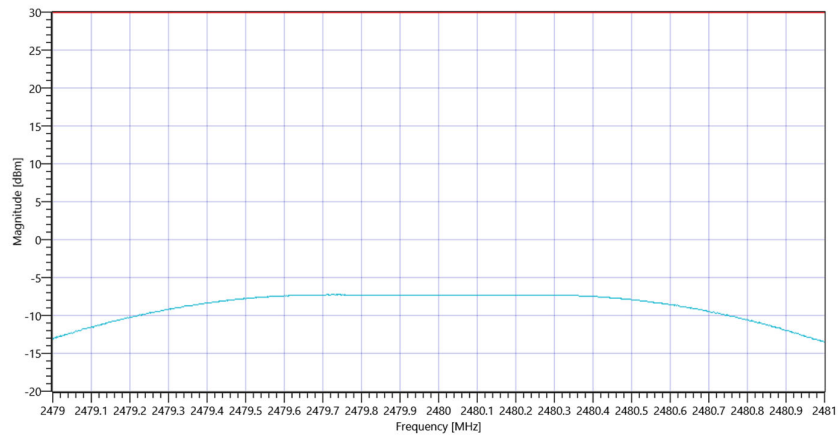
RESULT: DTS Bandwidth					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	704	kHz	Information



Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps DTS BW_21082019_163912.png

READ SA SETTINGS:	
Ref. Level [dBm]	2.76
Ref. Lev. offs [dB]	10.66
Input Attenuation [dB]	10
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	-7.27	dBm	PASS
Peak Power	---	1000	0.187499	mW	PASS
Frequency at Peak	---	---	2479.746	MHz	Information



Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps_21082019_163927.png

TEST FINISHED		
General Verdict	21.08.2019 16:39:27 / RT: 128 s	PASS

3. FCC Part 15.247 Bandwidth 6dB DTS ~ BT LE 1 Msps

Test References	
TC Start	21.08.2019 16:39:31
System Version	1.0.0.17
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 Msps
Add. Information	

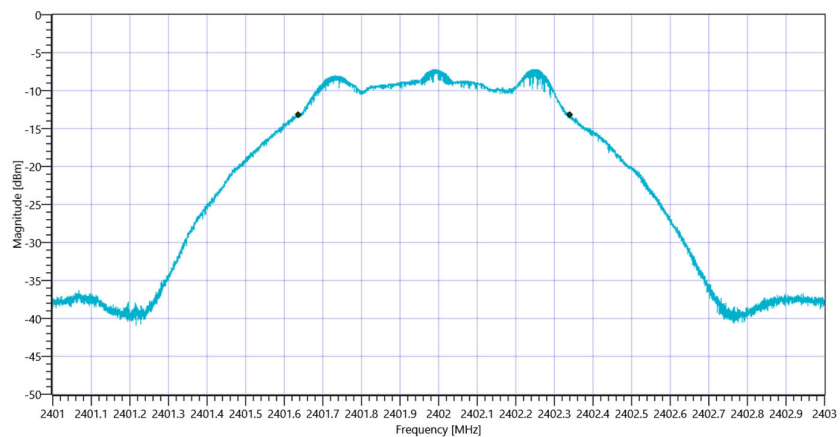
Test Parameter	
Technology to test	BT LE 1 Msps
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2440
Frequency high to test	True Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: 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]	-1.91
Ref. Lev. offs [dB]	10.49
Input Attenuation [dB]	5
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	---	702	kHz	PASS



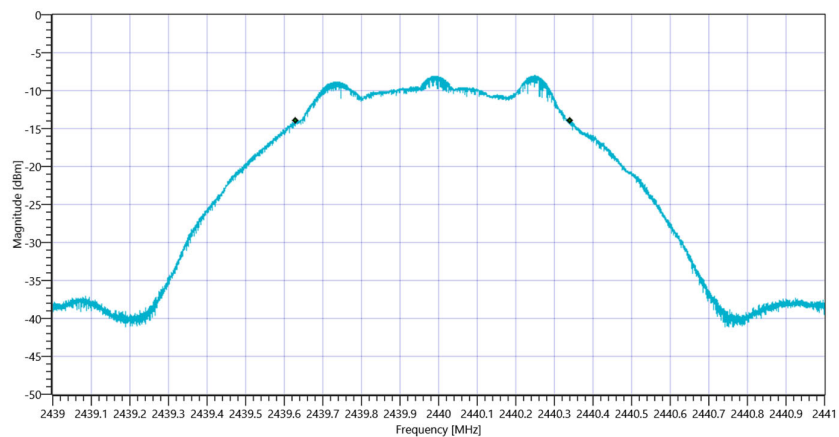
Plot_FCC Part 15.247 Bandwidth 6dB DTS - BT LE 1 Msps_21082019_163956.png

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]	-2.75
Ref. Lev. offs [dB]	10.61
Input Attenuation [dB]	5
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	---	710	kHz	PASS



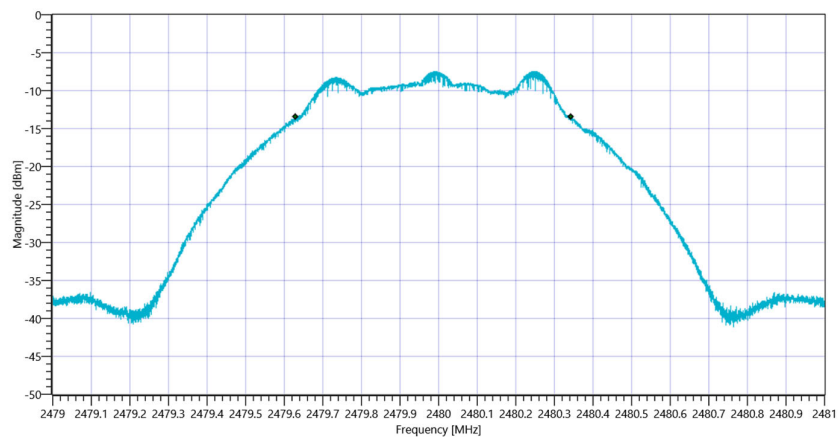
Plot_FCC Part 15.247 Bandwidth 6dB DTS - BT LE 1 Msps_21082019_164025.png

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]	-2.20
Ref. Lev. offs [dB]	10.66
Input Attenuation [dB]	5
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	---	712	kHz	PASS



Plot_FCC Part 15.247 Bandwidth 6dB DTS - BT LE 1 Msps_21082019_164055.png

TEST FINISHED		
General Verdict	21.08.2019 16:40:55 / RT: 83 s	PASS

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

Test References	
TC Start	21.08.2019 16:40:59
System Version	1.0.0.17
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	

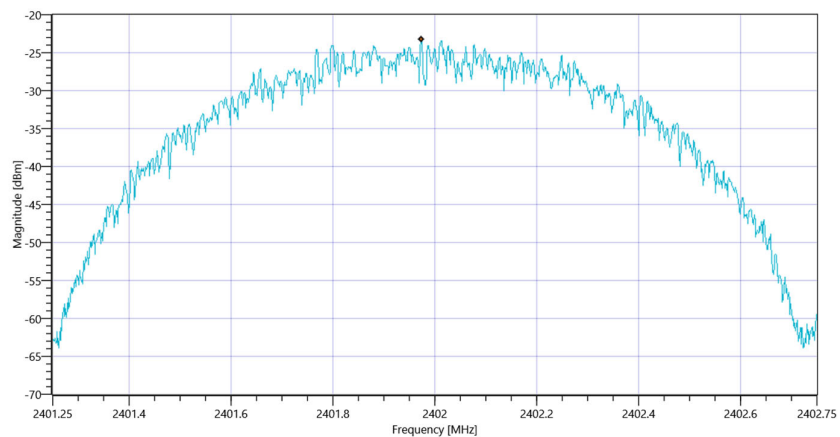
Test Parameter	
Technology to test	BT LE 1 Msps
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2440
Frequency high to test	True Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: 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]	-1.87
Ref. Lev. offs [dB]	10.49
Input Attenuation [dB]	5
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	-23.23	dBm/3KHz	PASS



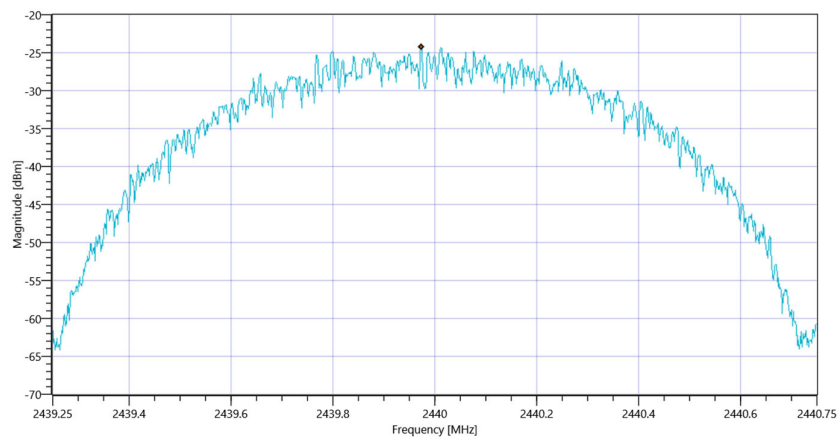
Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 1 Msps_21082019_164133.png

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]	-2.69
Ref. Lev. offs [dB]	10.61
Input Attenuation [dB]	5
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	-24.23	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 1 Msps_21082019_164212.png

Test at TX 2480 MHz

RESULT: DTM Connection check

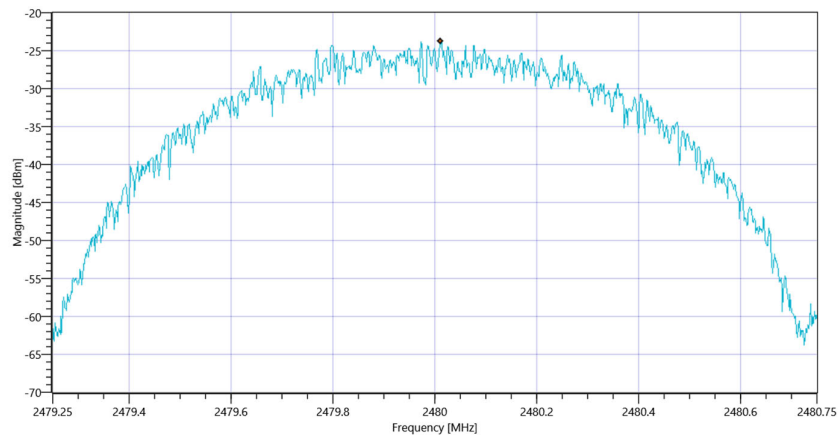
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:

Ref. Level [dBm]	-2.22
Ref. Lev. offs [dB]	10.66
Input Attenuation [dB]	5
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	-23.76	dBm/3KHz	PASS



TEST FINISHED

General Verdict

21.08.2019 16:42:51 / RT: 112 s

PASS

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

Test References	
TC Start	21.08.2019 16:42:55
System Version	1.0.0.17
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	

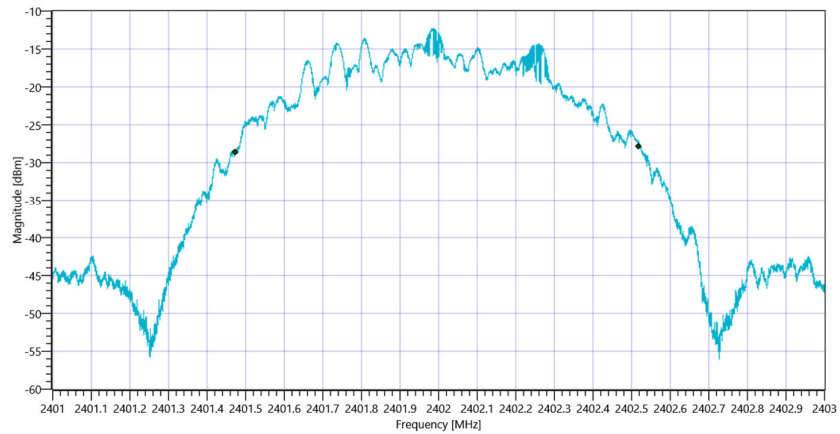
Test Parameter	
Technology to test	BT LE 1 Msps
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2440
Frequency high to test	True Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: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

Test at TX 2402 MHz

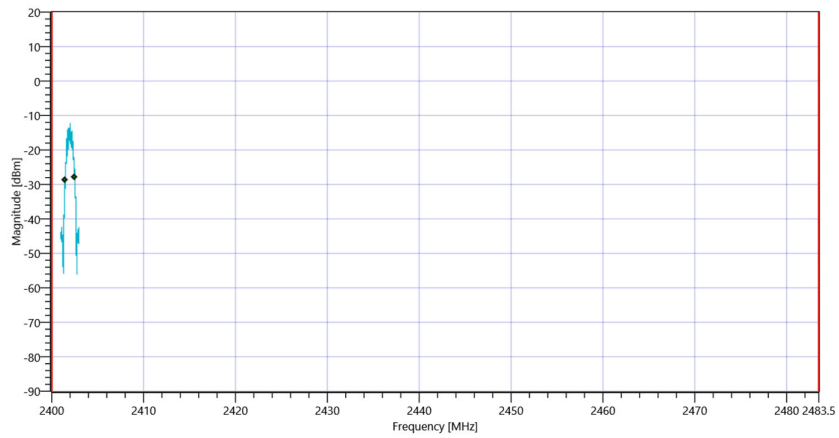
RESULT: DTM Connection check					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:	
Ref. Level [dBm]	-1.91
Ref. Lev. offs [dB]	10.49
Input Attenuation [dB]	5
Freq. Start [MHz]	2401.000
Freq. Stop [MHz]	2403.000
Resolution BW [MHz]	0.020000
Video BW [MHz]	0.060000
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%	---	---	1046	kHz	Information
T1 99%	2400.000000	---	2401.4729	MHz	PASS
T2 99%	---	2483.500000	2402.5189	MHz	PASS

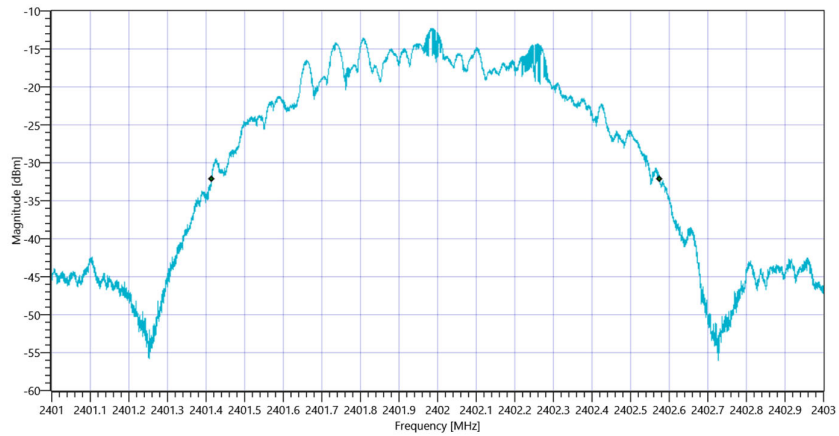


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB - BT LE 1 Msps 99PCT_21082019_164320.png

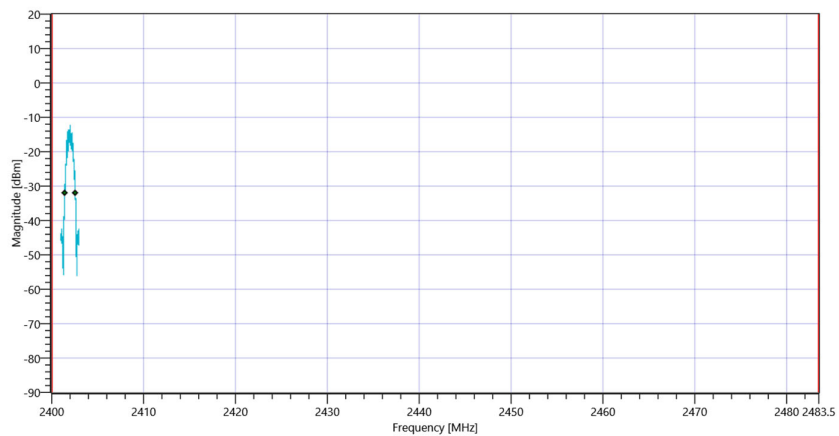


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps_21082019_164323.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1163	kHz	Information
T1 20dB	2400.000000	---	2401.4136	MHz	PASS
T2 20dB	---	2483.500000	2402.5764	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps 20dB_21082019_164326.png



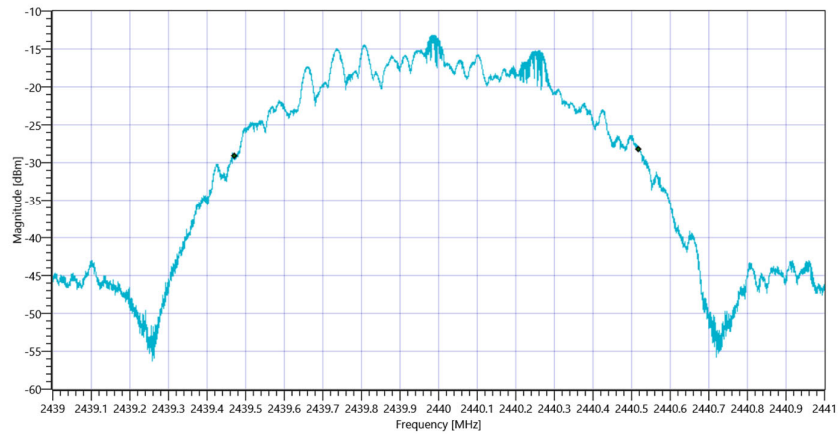
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps_21082019_164329.png

Test at TX 2440 MHz

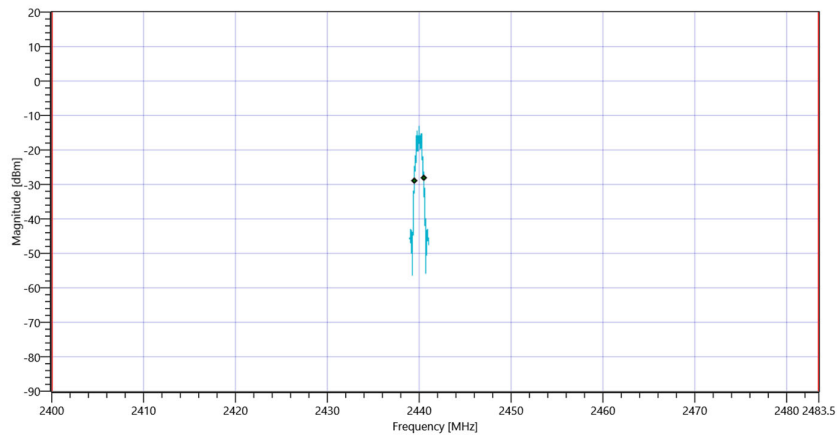
RESULT: DTM Connection check					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:	
Ref. Level [dBm]	-2.68
Ref. Lev. offs [dB]	10.61
Input Attenuation [dB]	5
Freq. Start [MHz]	2439.000
Freq. Stop [MHz]	2441.000
Resolution BW [MHz]	0.020000
Video BW [MHz]	0.060000
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%	---	---	1049	kHz	Information
T1 99%	2400.000000	---	2439.4705	MHz	PASS
T2 99%	---	2483.500000	2440.5197	MHz	PASS

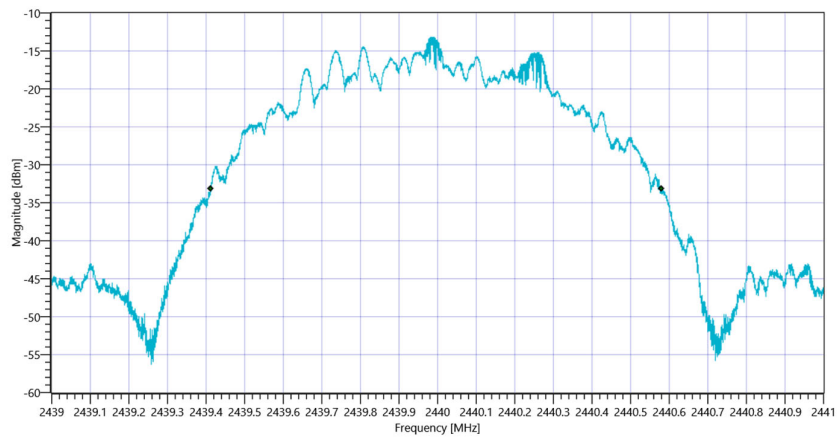


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB - BT LE 1 Msps 99PCT_21082019_164359.png

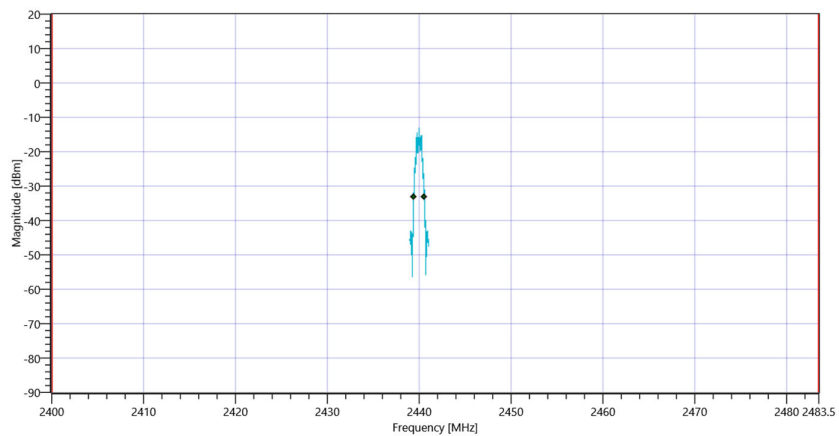


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps_21082019_164402.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1167	kHz	Information
T1 20dB	2400.000000	---	2439.4134	MHz	PASS
T2 20dB	---	2483.500000	2440.5806	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps 20dB_21082019_164406.png



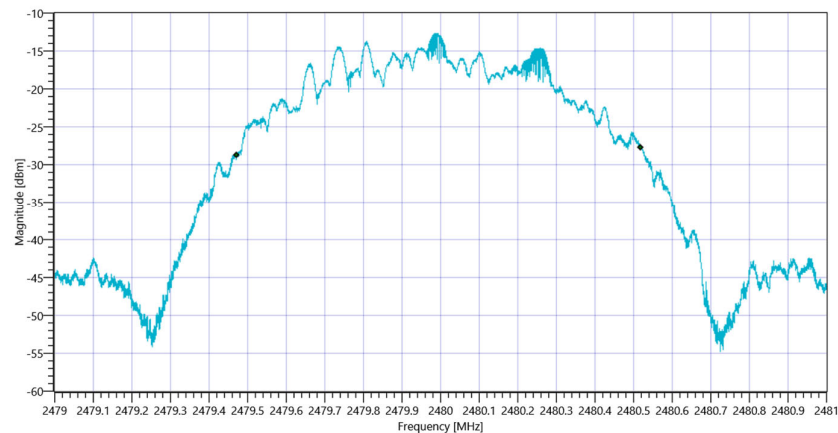
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps_21082019_164409.png

Test at TX 2480 MHz

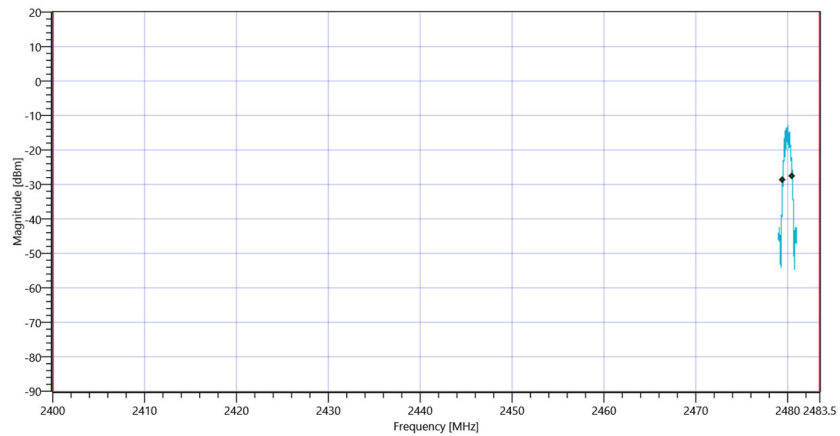
RESULT: DTM Connection check					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:	
Ref. Level [dBm]	-2.13
Ref. Lev. offs [dB]	10.66
Input Attenuation [dB]	5
Freq. Start [MHz]	2479.000
Freq. Stop [MHz]	2481.000
Resolution BW [MHz]	0.020000
Video BW [MHz]	0.060000
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%	---	---	1048	kHz	Information
T1 99%	2400.000000	---	2479.4711	MHz	PASS
T2 99%	---	2483.500000	2480.5195	MHz	PASS

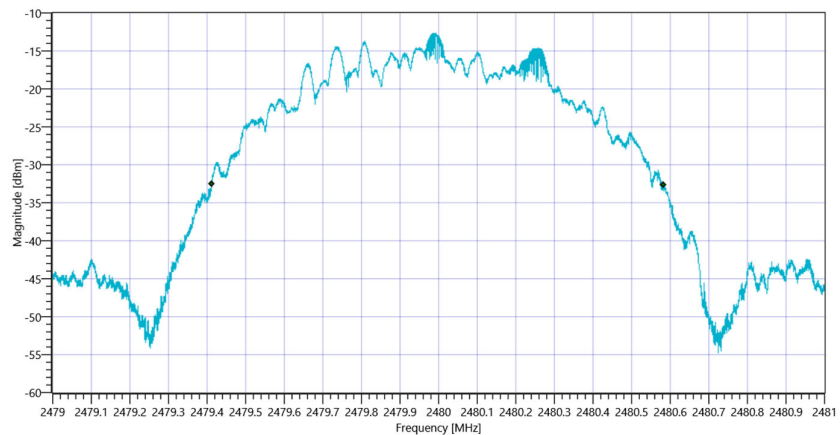


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB - BT LE 1 Msps 99PCT_21082019_164439.png

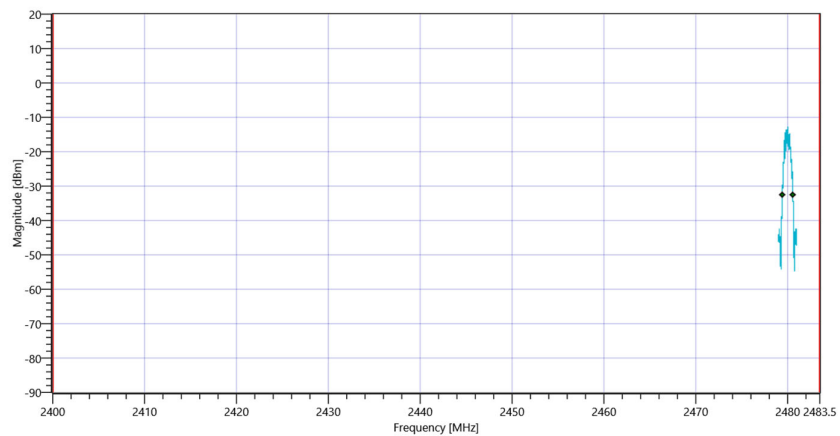


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps_21082019_164442.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1169	kHz	Information
T1 20dB	2400.000000	---	2479.4128	MHz	PASS
T2 20dB	---	2483.500000	2480.5816	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps 20dB_21082019_164446.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps_21082019_164449.png

TEST FINISHED

General Verdict

21.08.2019 16:44:49 / RT: 114 s

PASS

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

Test References	
TC Start	21.08.2019 16:44:54
System Version	1.0.0.17
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	

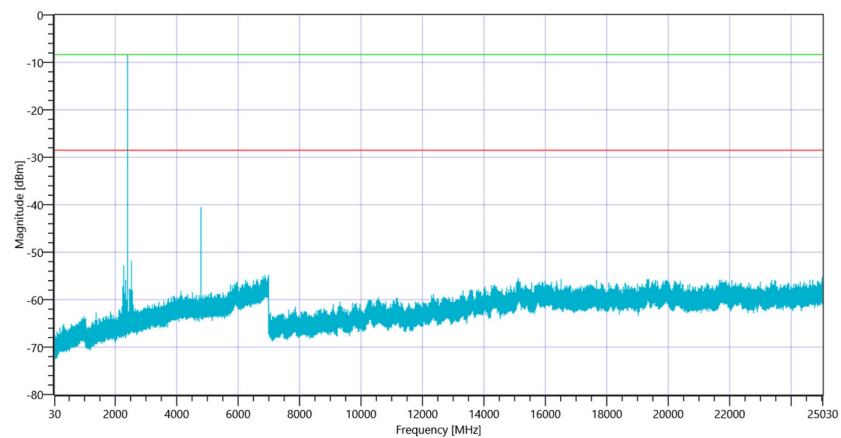
Test Parameter	
Technology to test	BT LE 1 Msp
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2440
Frequency high to test	True Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70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

Test at TX 2402 MHz

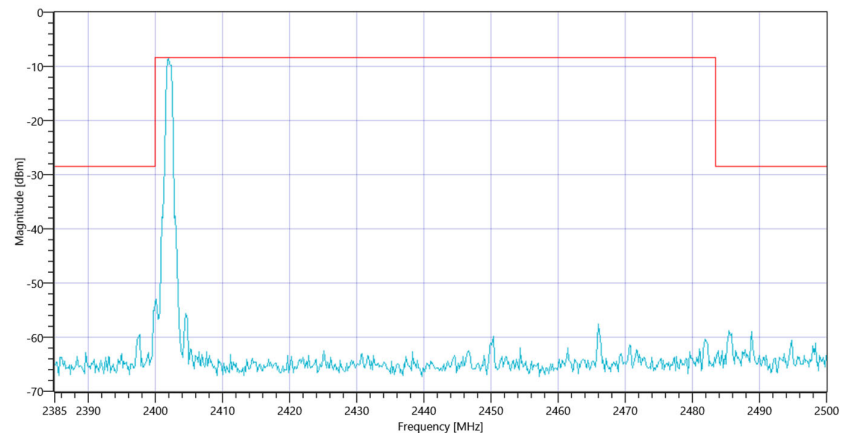
RESULT: DTM Connection check					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:	
Ref. Level [dBm]	-0.76
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	---	---	-8.44	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2402_21082019_164935.png



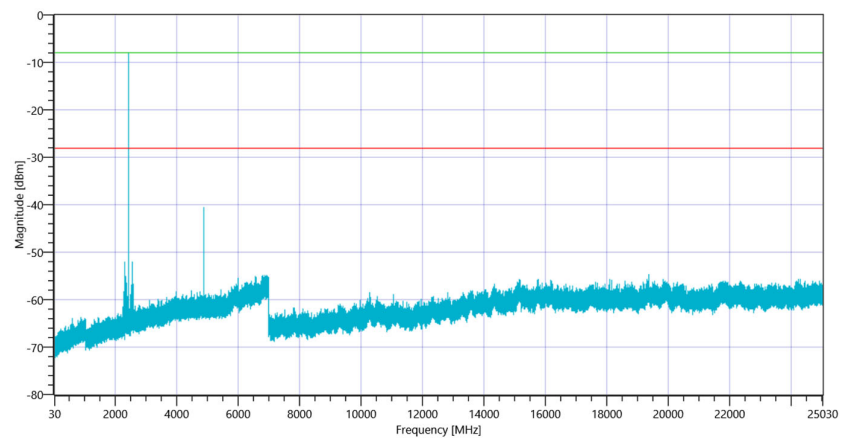
Plot_FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2402_21082019_164938.png

Test at TX 2440 MHz

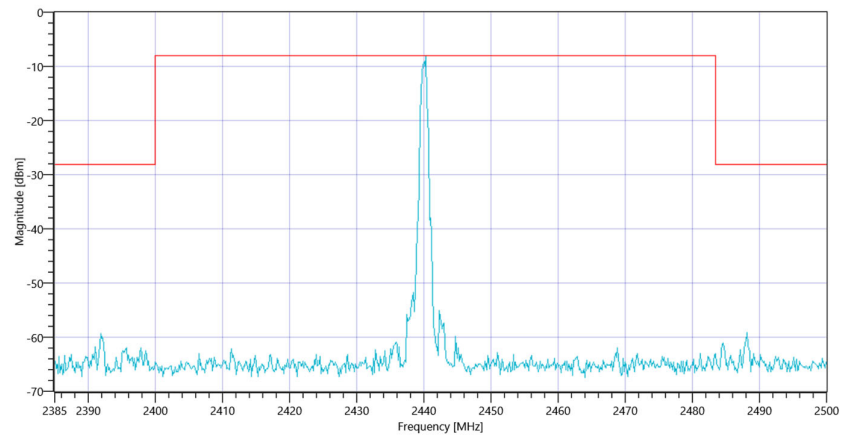
RESULT: DTM Connection check					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:	
Ref. Level [dBm]	-1.32
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 @ 2440.33 MHz	---	---	-8.06	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2440_21082019_165425.png



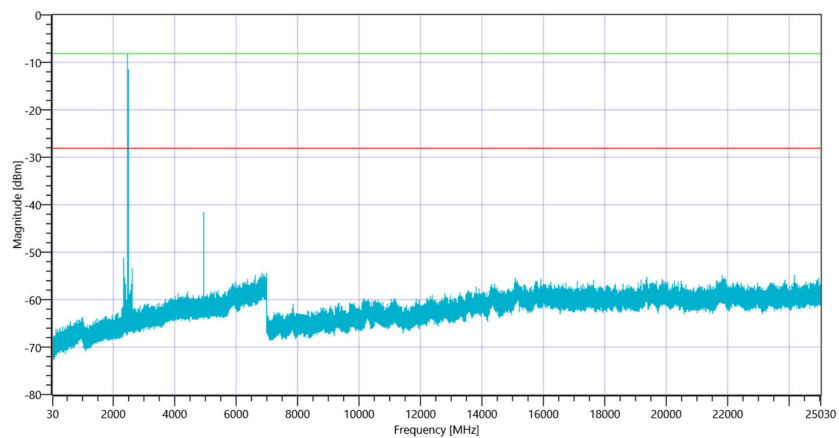
Plot_FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2440_21082019_165427.png

Test at TX 2480 MHz

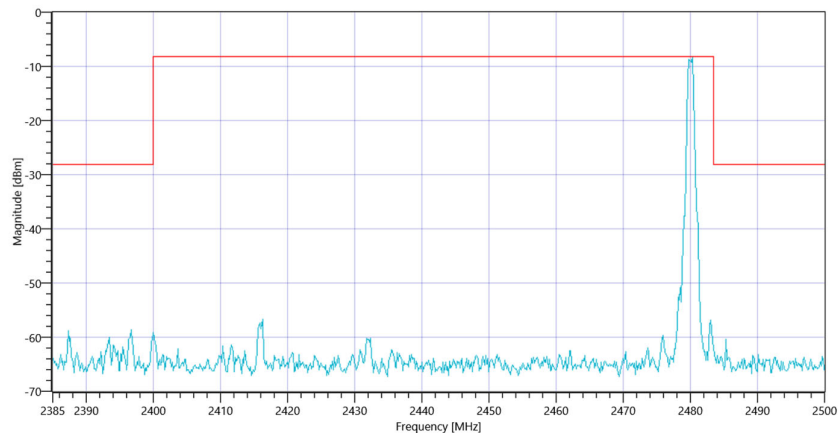
RESULT: DTM Connection check					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Connection result	---	---	---	--	PASS

READ SA SETTINGS:	
Ref. Level [dBm]	-0.91
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	---	---	-8.19	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2480_21082019_165914.png



Plot_FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2480_21082019_165916.png

TEST FINISHED

7. FCC Part 15.247 Restricted Band Edge Conducted Peak DTS ~ BT LE 1 Msps

Test References	
TC Start	21.08.2019 16:59:22
System Version	1.0.0.17
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - 8.7.3 Integration Method; ANSI C63.10-2013 11.13.3.5 Reduced VBW averaging across ON and OFF times of the EUT transmissions
Class / TC Version / TC ID	TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Peak_V01 Version: 0.0.1 TCID_FCC15247_7
My Description	FCC 15.247 Restricted Band Edge Conducted Peak DTS - BT LE 1 Msps
Add. Information	

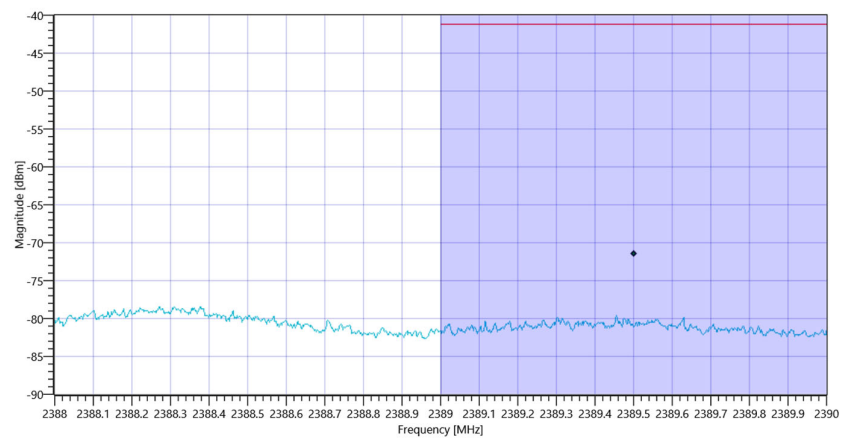
Test Parameter	
Technology to test	BT LE 1 Msps
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	False Freq [MHz] 2440
Frequency high to test	True Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: 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]	-1.86
Ref. Lev. offs [dB]	10.49
Input Attenuation [dB]	5
Freq. Start [MHz]	2388.000
Freq. Stop [MHz]	2390.000
Resolution BW [MHz]	0.100000
Video BW [MHz]	0.300000
Detector	POS
Sweep Time [ms]	8
Sweep Points/Section	1001
Sweep Count	300
Sweep Mode	MAXH
Used Sweep Type	SWE
Marker Method	Band Power

RESULT: TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Peak_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Band Power without Antenna Gain	---	-41.23	-71.46	dBm	Information
Band Power incl. Antenna Gain	---	-41.23	-71.46	dBm	PASS



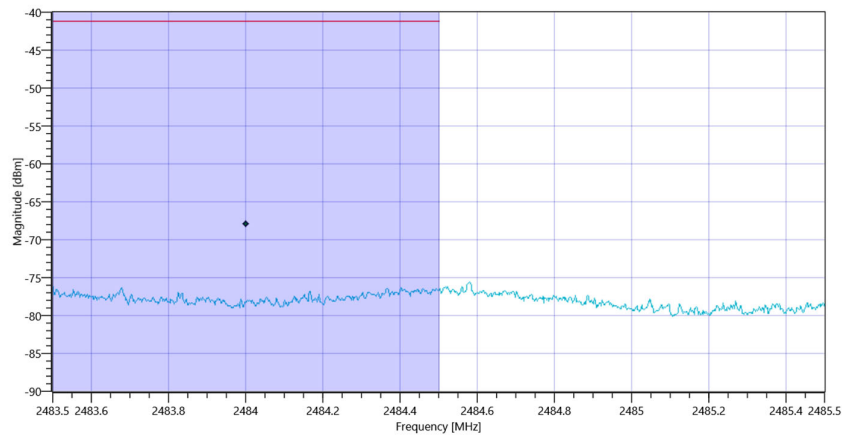
Plot_FCC Part 15.247 Restricted Band Edge Conducted Peak DTS - BT LE 1 Msps_21082019_165939.png

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]	-2.15
Ref. Lev. offs [dB]	10.66
Input Attenuation [dB]	5
Freq. Start [MHz]	2483.500
Freq. Stop [MHz]	2485.500
Resolution BW [MHz]	0.100000
Video BW [MHz]	0.300000
Detector	POS
Sweep Time [ms]	8
Sweep Points/Section	1001
Sweep Count	300
Sweep Mode	MAXH
Used Sweep Type	SWE
Marker Method	Band Power

RESULT: TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Peak_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Band Power without Antenna Gain	---	-41.23	-67.94	dBm	Information
Band Power incl. Antenna Gain	---	-41.23	-67.94	dBm	PASS



Plot_FCC Part 15.247 Restricted Band Edge Conducted Peak DTS - BT LE 1 Msps_21082019_170000.png

TEST FINISHED		
General Verdict	21.08.2019 17:00:00 / RT: 38 s	PASS

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