

Measurement Results

1-8503/19-01-04_Annex_MR_A_1

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IUT Summary

IUT DEFINITION	
Manufacturer	Ingenico Group
Type	XTRAWIBTC
Serial No. Setup No.	190682203011067808006807 1.0
SW Version HW Version	NI NI
Comment 1 2	

IUT Common Settings	
Tlow Tmid Thigh [°C]	0 20 40
Vlow Vmid Vhigh [V] @Imax [A]	-/-
Auto Control enabled Power Supply Climatic Box	No No
Antenna Gain [dBi]	0
Additional Path Loss [dB]	0

1. Message

Test References	
TC Start	02.09.2019 14:05:57
System Version	1.0.0.20
Test Specification	None
Test Method	
Class / TC Version / TC ID	TC_VM_Message_V01 Version: 0.0.1 TCID_Toolbox_3
My Description	Message b-mode
Add. Information	

Test Parameter	
Devices in use	none
Message start	02.09.2019 14:05:57
Message	set WLAN2G4 to b mode, Frequency [MHz] 2412 ,
Message end	02.09.2019 14:05:58

TEST FINISHED		
General Verdict	02.09.2019 14:05:58 / RT: 1 s	PASS

2. Common2G4 Peak Output Power conducted 3MHz_3MHz ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:06:02
System Version	1.0.0.20
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 WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

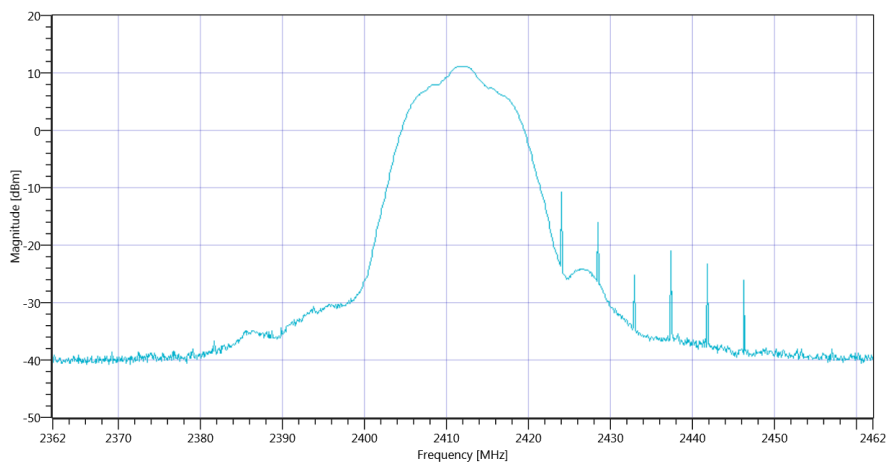
Test at TX 2412 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	15.88 9.83 25
Start [MHz] Stop [MHz]	2362.000 2462.000
RBW [MHz] VBW [MHz]	3.000000 3.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 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	11.18	dBm	Information
Peak Power	---	1000	13.121999	mW	Information
Frequency at Peak	---	---	2411.8	MHz	Information



Plot_Common2G4 Peak Output Power conducted 3MHz_3MHz ~ WLAN2G4 b-mode_02092019_140625.png

TEST FINISHED

General Verdict

02.09.2019 14:06:25 / RT: 23 s

PASS

3. FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:06:29
System Version	1.0.0.20
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 - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

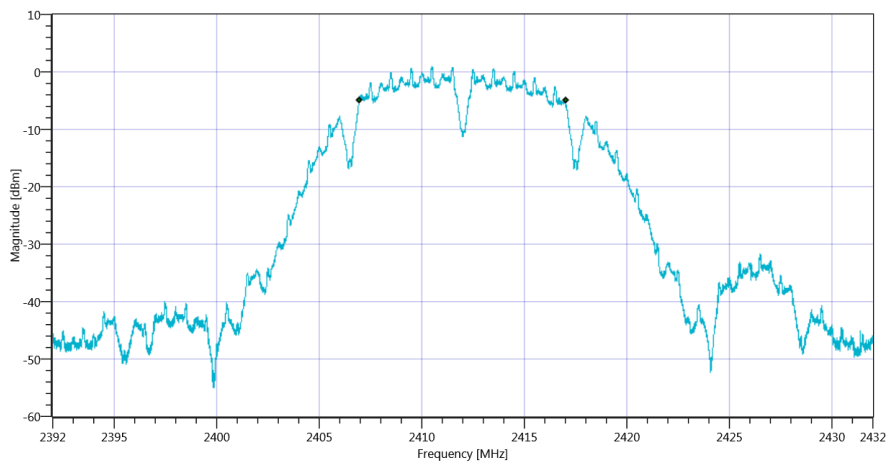
Test at TX 2412 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.81 9.83 20
Start [MHz] Stop [MHz]	2392.000 2432.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	10052	kHz	PASS



Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 b-mode_02092019_140657.png

TEST FINISHED

General Verdict	02.09.2019 14:06:57 / RT: 27 s	PASS
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4. FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:07:00
System Version	1.0.0.20
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 - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

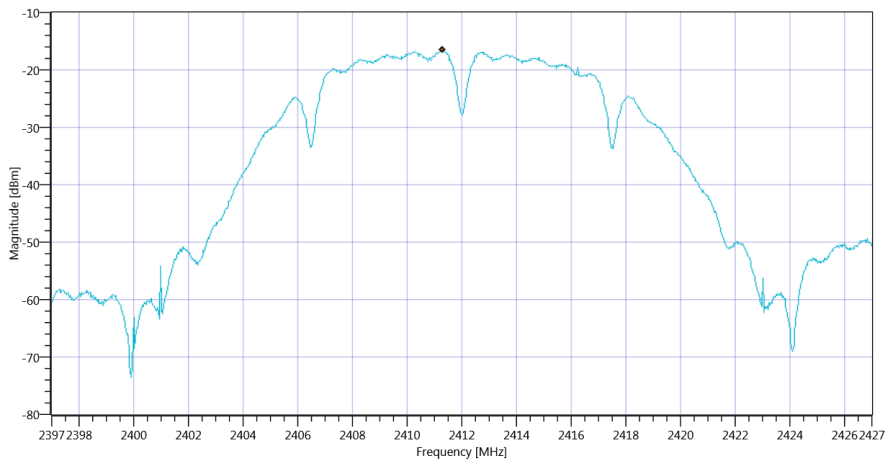
Test at TX 2412 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.11 9.83 20
Start [MHz] Stop [MHz]	2397.000 2427.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 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	-16.58	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 b-mode_02092019_140735.png

TEST FINISHED

General Verdict	02.09.2019 14:07:35 / RT: 34 s	PASS
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5. FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:07:38
System Version	1.0.0.20
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 - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

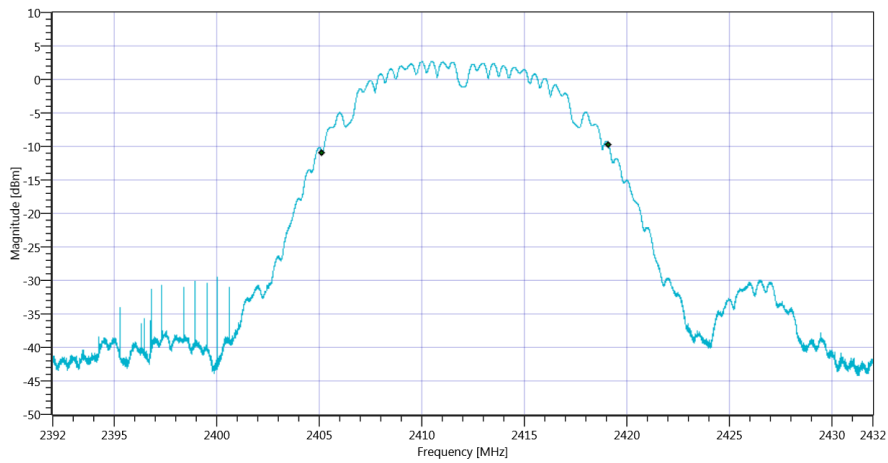
Test at TX 2412 MHz

READ SA SETTINGS:

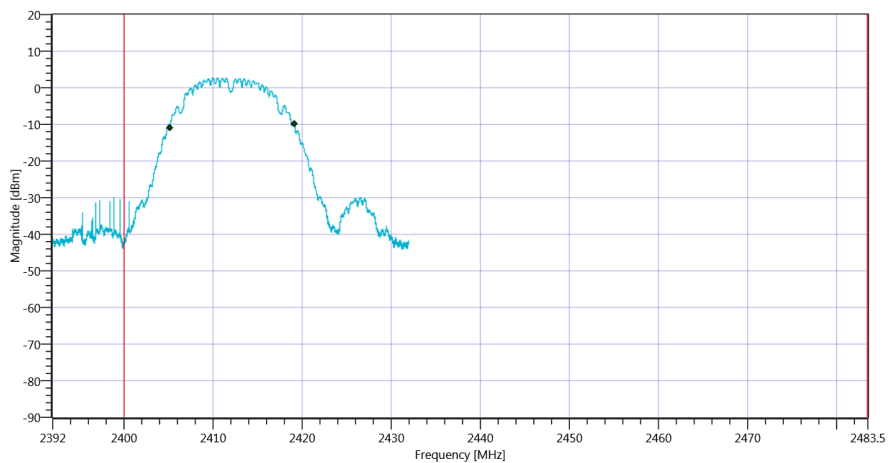
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.95 9.83 20
Start [MHz] Stop [MHz]	2392.000 2432.000
RBW [MHz] VBW [MHz]	0.500000 1.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	13967	kHz	Information
T1 99%	2400.000000	---	2405.1487	MHz	PASS
T2 99%	---	2483.500000	2419.1153	MHz	PASS



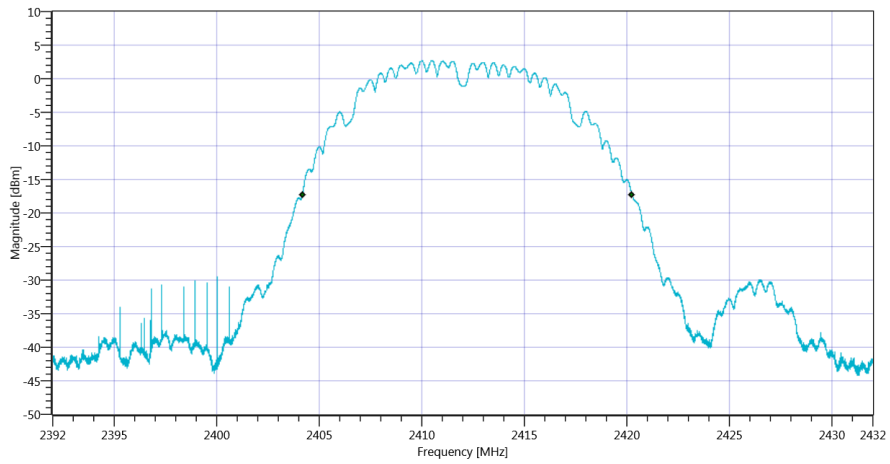
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode 99PCT_02092019_140802.png



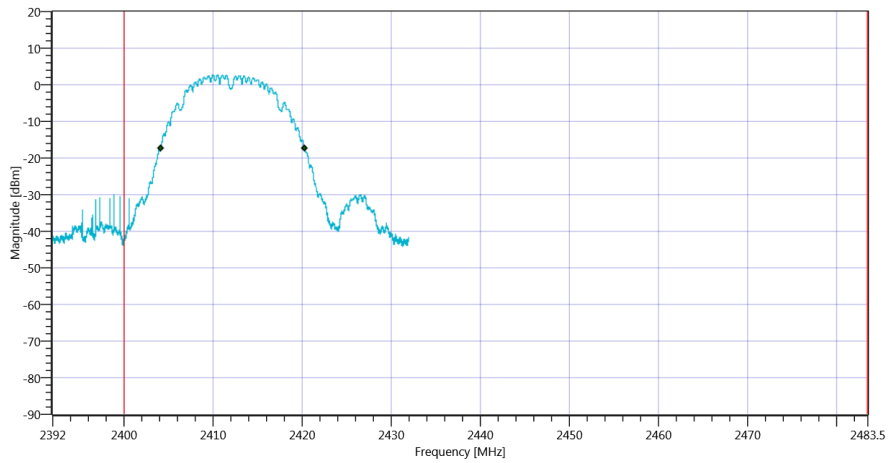
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode_02092019_140806.png

RESULT: TC_VM_FCC15247_Bandwidth_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	16084	kHz	Information
T1 20dB	2400.000000	---	2404.1800	MHz	PASS
T2 20dB	---	2483.500000	2420.2640	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode 20dB_02092019_140810.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode_02092019_140813.png

TEST FINISHED

General Verdict

02.09.2019 14:08:13 / RT: 34 s

PASS

6. FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:08:17
System Version	1.0.0.20
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 - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

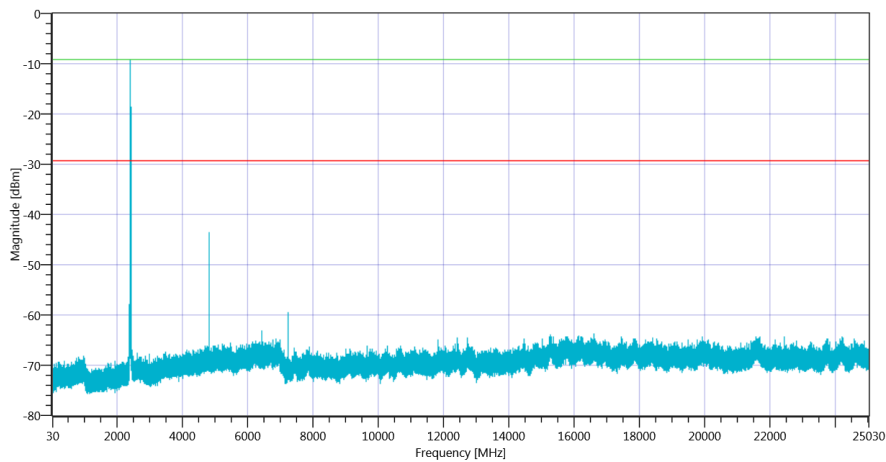
Test at TX 2412 MHz

READ SA SETTINGS:

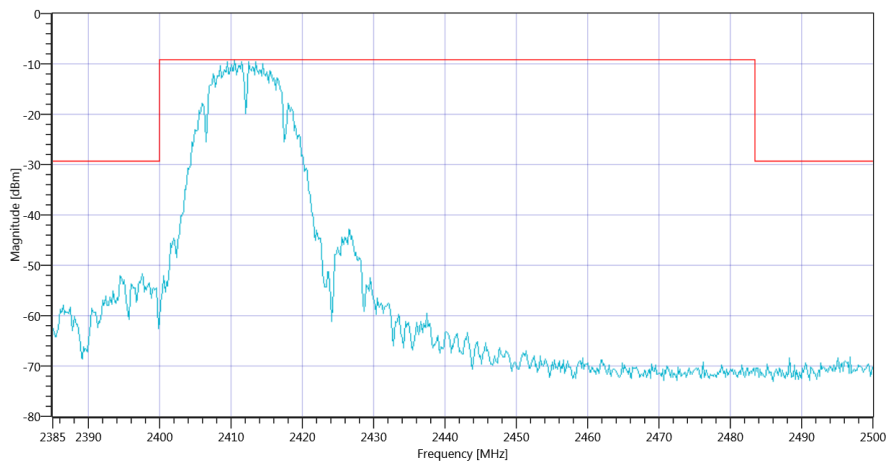
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	1.12 0 20
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2410.50 MHz	---	---	-9.26	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode 2412_02092019_141301.png



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode 2412_02092019_141304.png

TEST FINISHED

General Verdict	02.09.2019 14:13:05 / RT: 288 s	PASS
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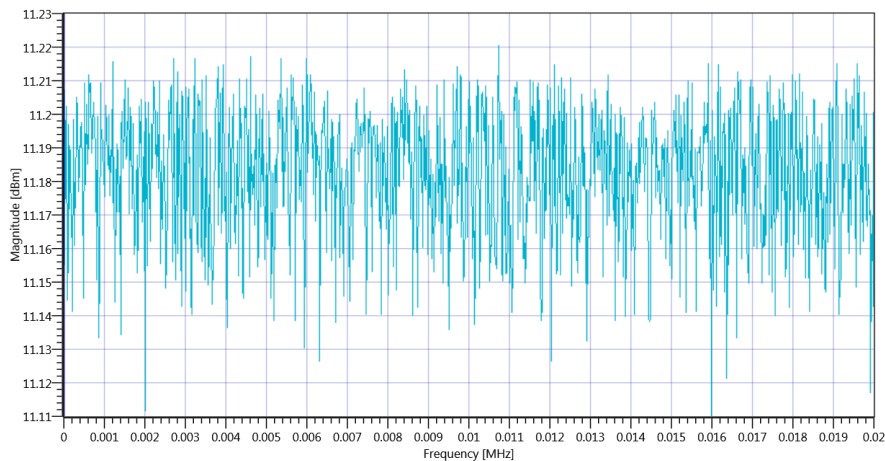
7. FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:13:09
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - 8.7.3 Integration Method; ANSI C63.10-2013 11.13.3.4 Trace averaging across on- and off-times of the EUT transmissions followed by duty cycle correction
Class / TC Version / TC ID	TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01 Version: 0.0.1 TCID_FCC15247_7
My Description	FCC 15.247 Restricted Band Edge Cond. Avg DC corrected DTS - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

Test at TX 2412 MHz

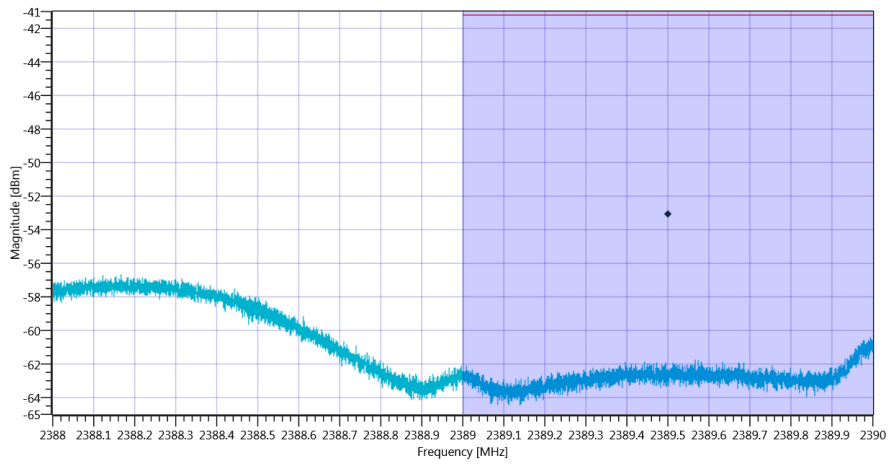
RESULT: Duty Cycle evaluation					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
No enough Bursts detected, Duty Cycle Burst Ratio set to 1					
Duty Cycle (Burst Ratio) max	---	---	1	---	Information
Duty Cycle max	---	---	0	dB	Information
Duty Cycle (Burst Ratio) min	---	---	1	---	Information
Duty Cycle min	---	---	0	dB	Information



Plot_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 b-mode 2412 MHz - Duty Cycle_02092019_141322.png

READ SA SETTINGS:	
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	15.96 9.83 25
Start [MHz] Stop [MHz]	2388.000 2390.000
RBW [MHz] VBW [MHz]	0.100000 0.500000
Detector TraceMode	RMS AVER
Sweep: Time [ms] Count Points per Section Type	32 300 32000 SWE
Marker Method	Band Power

RESULT: TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Duty Cycle worst case	---	---	0	dB	Information
Band Power without Antenna Gain Avg	---	---	-53.08	dBm	Information
Band Power without Antenna Gain Avg DC corrected	---	---	-53.08	dBm	Information
Band Power incl. Antenna Gain Avg DC corrected	---	-41.23	-53.08	dBm	PASS



Plot_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 b-mode_02092019_141343.png

TEST FINISHED

General Verdict

02.09.2019 14:13:44 / RT: 35 s

PASS

8. FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:13:47
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
Class / TC Version / TC ID	TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01 Version: 0.0.1 TCID_FCC15247_3
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - PowerMeter
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 NRP-Z81,102585

Test at TX 2412 MHz

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	--	--	14.33	dBm	PASS

TEST FINISHED		
General Verdict	02.09.2019 14:13:51 / RT: 4 s	PASS

9. Common2G4 Peak Output Power conducted 3MHz_3MHz ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:14:40
System Version	1.0.0.20
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 WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

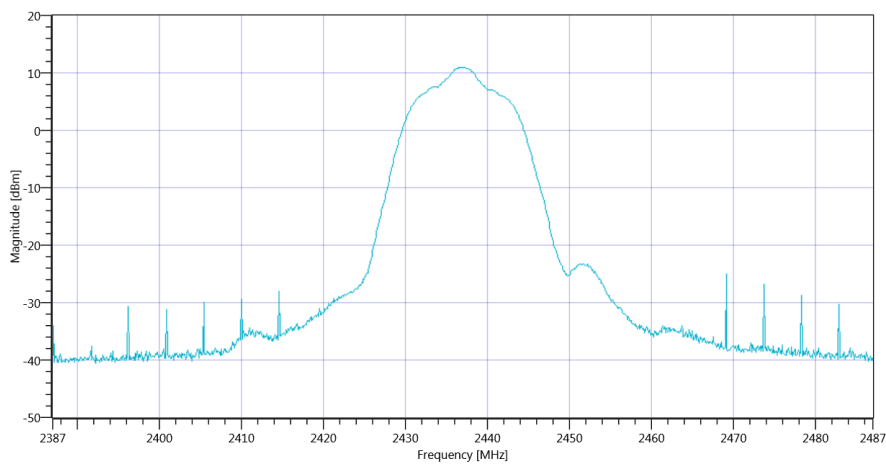
Test at TX 2437 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	15.50 9.89 25
Start [MHz] Stop [MHz]	2387.000 2487.000
RBW [MHz] VBW [MHz]	3.000000 3.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 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	10.88	dBm	Information
Peak Power	---	1000	12.246162	mW	Information
Frequency at Peak	---	---	2436.8	MHz	Information



Plot_Common2G4 Peak Output Power conducted 3MHz_3MHz ~ WLAN2G4 b-mode_02092019_141504.png

TEST FINISHED

General Verdict

02.09.2019 14:15:04 / RT: 24 s

PASS

10. FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:15:08
System Version	1.0.0.20
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 - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

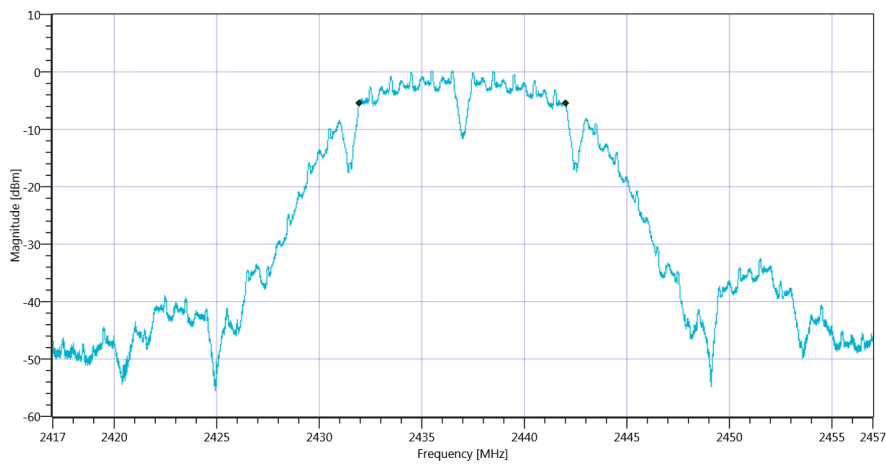
Test at TX 2437 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.46 9.89 20
Start [MHz] Stop [MHz]	2417.000 2457.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	10072	kHz	PASS



TEST FINISHED

General Verdict

02.09.2019 14:15:35 / RT: 26 s

PASS

11. FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:15:38
System Version	1.0.0.20
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 - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

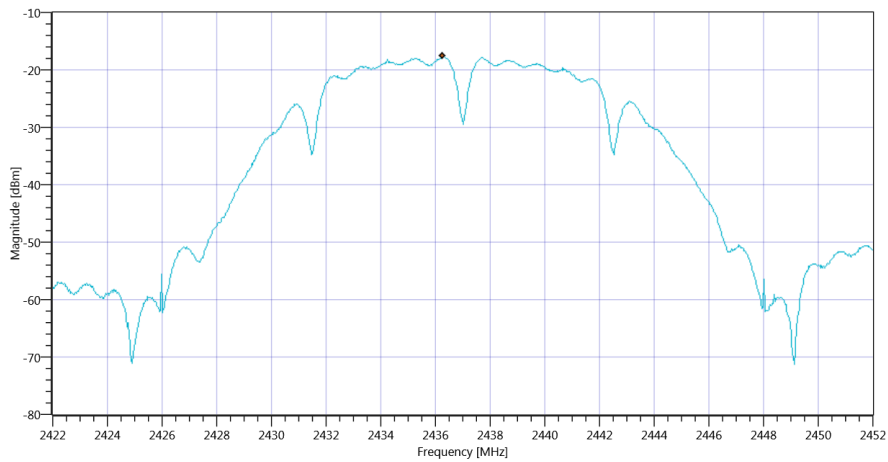
Test at TX 2437 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.47 9.89 20
Start [MHz] Stop [MHz]	2422.000 2452.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 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	-17.65	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 b-mode_02092019_141613.png

TEST FINISHED

General Verdict	02.09.2019 14:16:13 / RT: 34 s	PASS
-----------------	--------------------------------	------

12. FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:16:17
System Version	1.0.0.20
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 - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

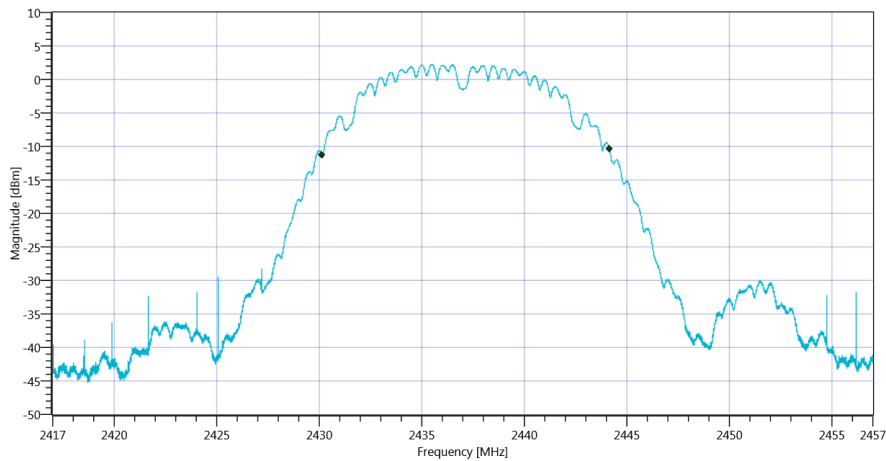
Test at TX 2437 MHz

READ SA SETTINGS:

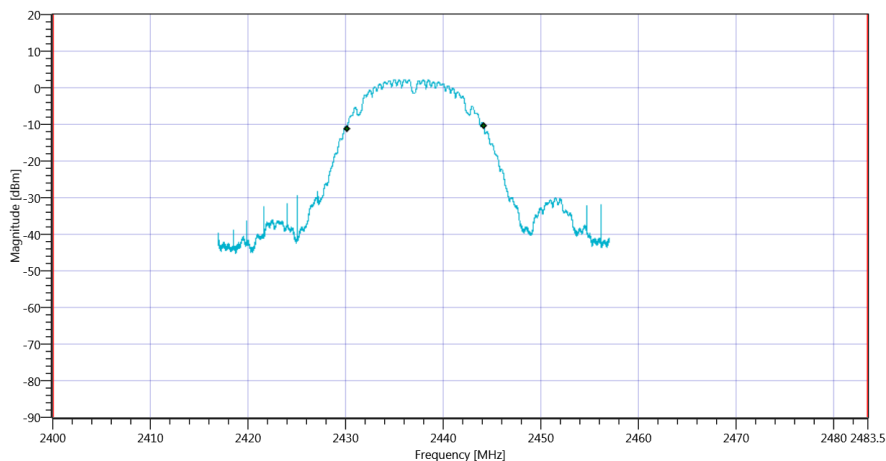
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.46 9.89 20
Start [MHz] Stop [MHz]	2417.000 2457.000
RBW [MHz] VBW [MHz]	0.500000 1.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	14019	kHz	Information
T1 99%	2400.000000	---	2430.1327	MHz	PASS
T2 99%	---	2483.500000	2444.1513	MHz	PASS



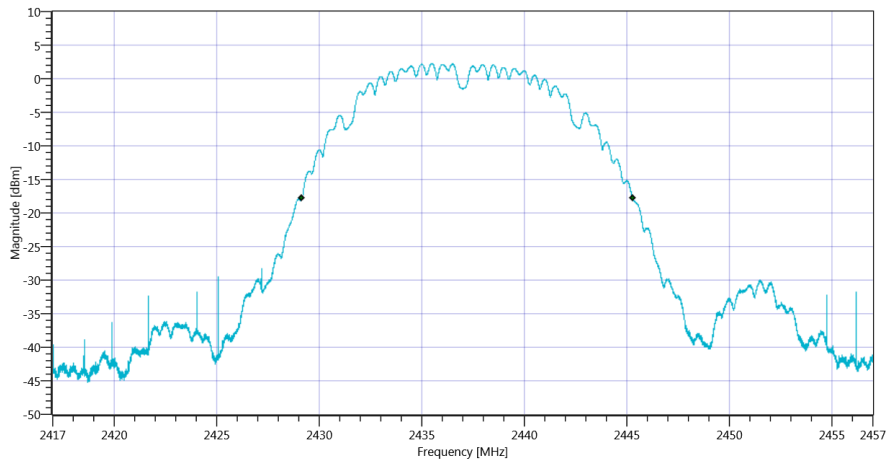
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode 99PCT_02092019_141642.png



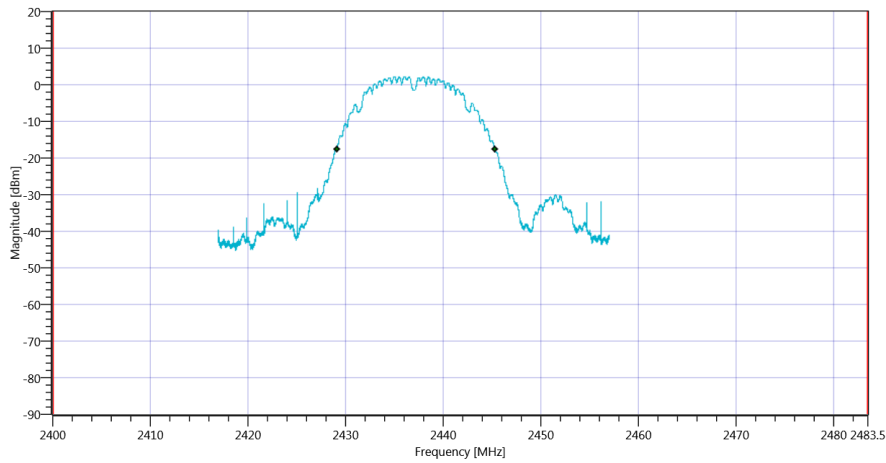
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode_02092019_141645.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	16140	kHz	Information
T1 20dB	2400.000000	---	2429.1600	MHz	PASS
T2 20dB	---	2483.500000	2445.3000	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode 20dB_02092019_141649.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode_02092019_141652.png

TEST FINISHED

General Verdict

02.09.2019 14:16:52 / RT: 35 s

PASS

13. FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:16:56
System Version	1.0.0.20
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 - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

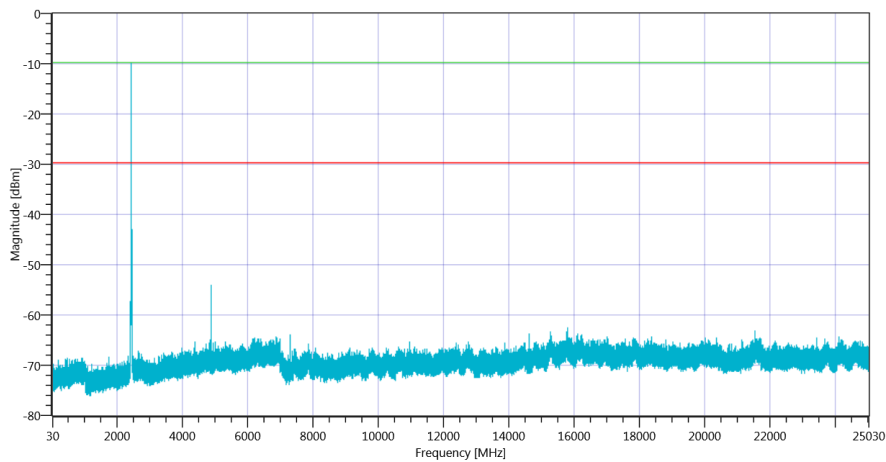
Test at TX 2437 MHz

READ SA SETTINGS:

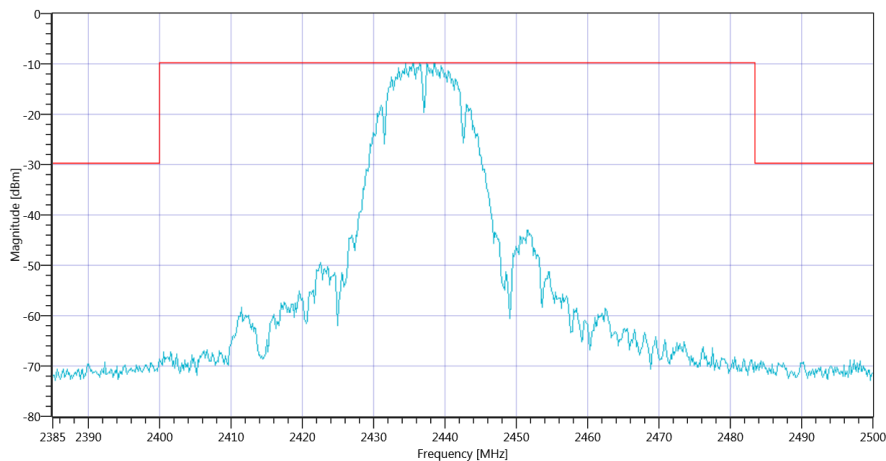
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	0.77 0 20
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2435.50 MHz	---	---	-9.71	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode 2437_02092019_142141.png



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode 2437_02092019_142143.png

TEST FINISHED

General Verdict 02.09.2019 14:21:45 / RT: 288 s

PASS

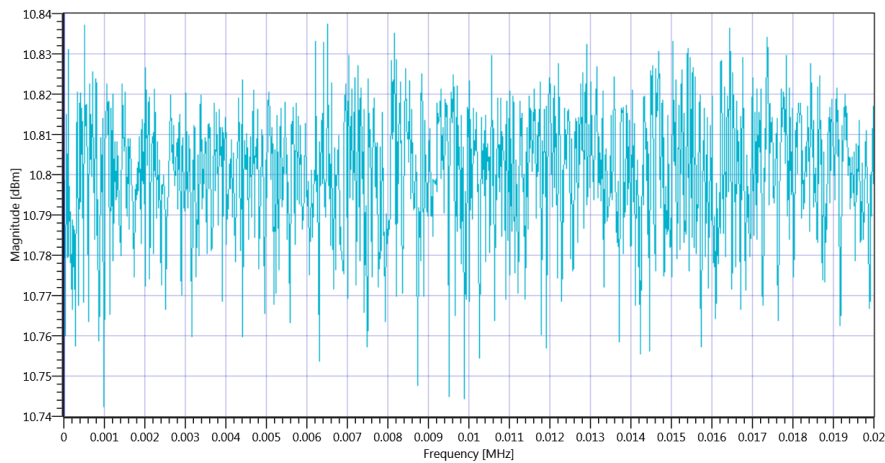
14. FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:21:48
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - 8.7.3 Integration Method; ANSI C63.10-2013 11.13.3.4 Trace averaging across on- and off-times of the EUT transmissions followed by duty cycle correction
Class / TC Version / TC ID	TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01 Version: 0.0.1 TCID_FCC15247_7
My Description	FCC 15.247 Restricted Band Edge Cond. Avg DC corrected DTS - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

Test at TX 2437 MHz

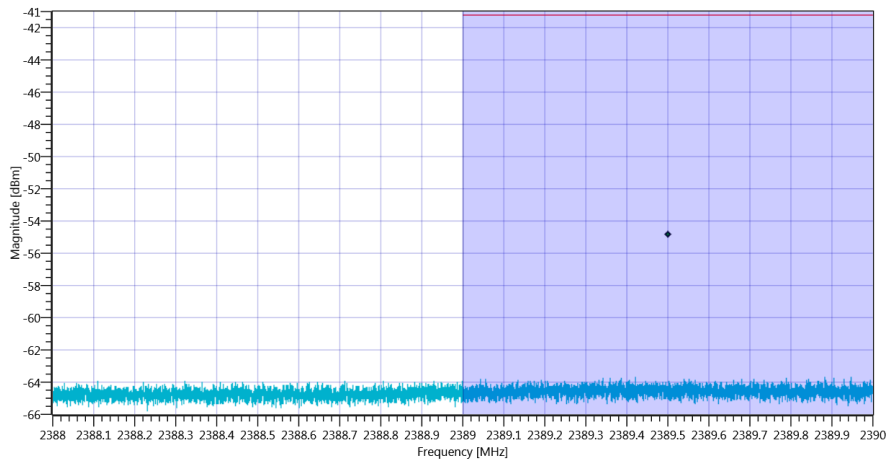
RESULT: Duty Cycle evaluation					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
No enough Bursts detected, Duty Cycle Burst Ratio set to 1					
Duty Cycle (Burst Ratio) max	---	---	1	---	Information
Duty Cycle max	---	---	0	dB	Information
Duty Cycle (Burst Ratio) min	---	---	1	---	Information
Duty Cycle min	---	---	0	dB	Information



Plot_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 b-mode 2437 MHz - Duty Cycle_02092019_142201.png

READ SA SETTINGS:	
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	15.50 9.89 25
Start [MHz] Stop [MHz]	2388.000 2390.000
RBW [MHz] VBW [MHz]	0.100000 0.500000
Detector TraceMode	RMS AVER
Sweep: Time [ms] Count Points per Section Type	32 300 32000 SWE
Marker Method	Band Power

RESULT: TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Duty Cycle worst case	---	---	0	dB	Information
Band Power without Antenna Gain Avg	---	---	-54.84	dBm	Information
Band Power without Antenna Gain Avg DC corrected	---	---	-54.84	dBm	Information
Band Power incl. Antenna Gain Avg DC corrected	---	-41.23	-54.84	dBm	PASS



Plot_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 b-mode_02092019_142223.png

TEST FINISHED

General Verdict

02.09.2019 14:22:23 / RT: 34 s

PASS

15. FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:22:27
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
Class / TC Version / TC ID	TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01 Version: 0.0.1 TCID_FCC15247_3
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2472
Switched Path	IUT - SignalingUnit - PowerMeter
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 NRP-Z81,102585

Test at TX 2437 MHz

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	--	--	13.84	dBm	PASS

TEST FINISHED		
General Verdict	02.09.2019 14:22:31 / RT: 4 s	PASS

16. Common2G4 Peak Output Power conducted 3MHz_3MHz ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:26:47
System Version	1.0.0.20
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 WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

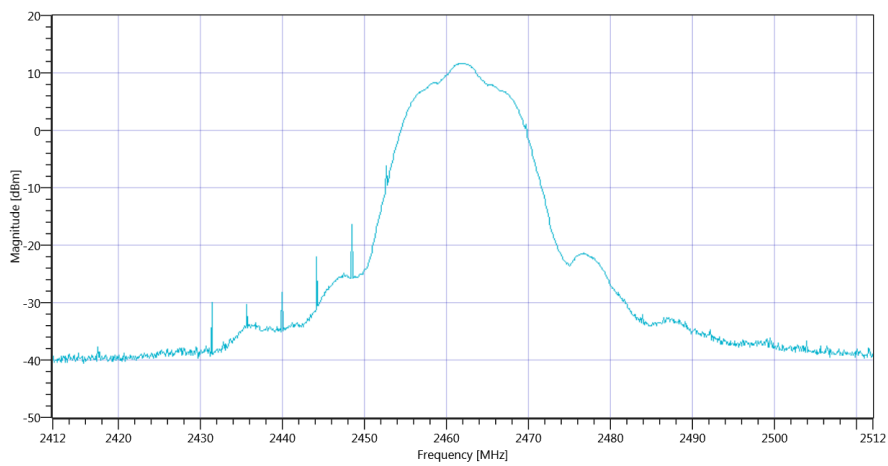
Test at TX 2462 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.29 9.94 25
Start [MHz] Stop [MHz]	2412.000 2512.000
RBW [MHz] VBW [MHz]	3.000000 3.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 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	11.57	dBm	Information
Peak Power	---	1000	14.354894	mW	Information
Frequency at Peak	---	---	2461.8	MHz	Information



Plot_Common2G4 Peak Output Power conducted 3MHz_3MHz ~ WLAN2G4 b-mode_02092019_142710.png

TEST FINISHED

General Verdict

02.09.2019 14:27:10 / RT: 23 s

PASS

17. FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:27:14
System Version	1.0.0.20
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 - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

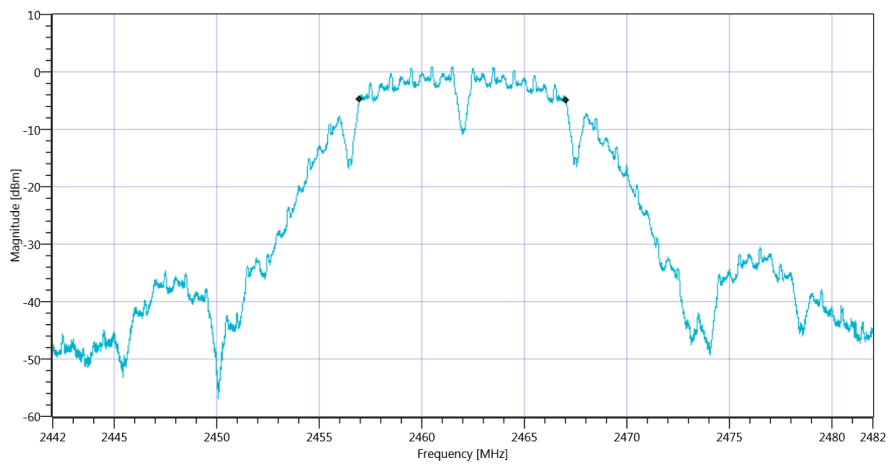
Test at TX 2462 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.29 9.94 20
Start [MHz] Stop [MHz]	2442.000 2482.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	10064	kHz	PASS



Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 b-mode_02092019_142741.png

TEST FINISHED

General Verdict

02.09.2019 14:27:41 / RT: 26 s

PASS

18. FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:27:44
System Version	1.0.0.20
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 - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

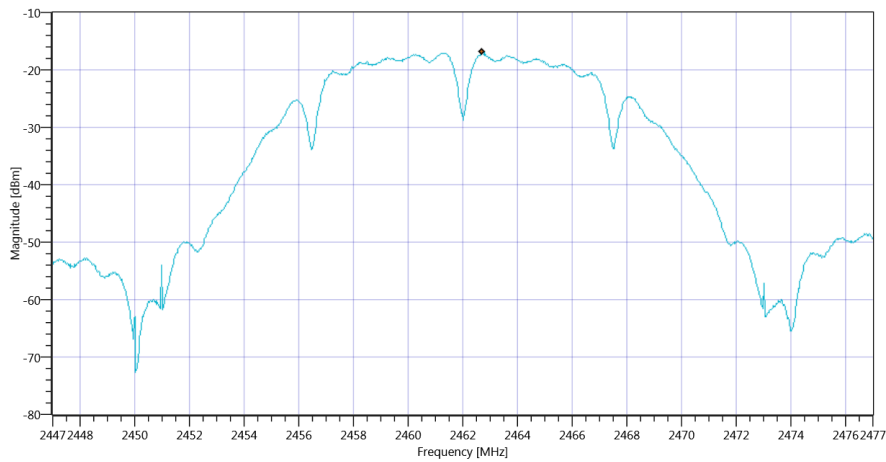
Test at TX 2462 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.29 9.94 20
Start [MHz] Stop [MHz]	2447.000 2477.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 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	-16.86	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 b-mode_02092019_142819.png

TEST FINISHED

General Verdict	02.09.2019 14:28:19 / RT: 34 s	PASS
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19. FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:28:23
System Version	1.0.0.20
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 - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

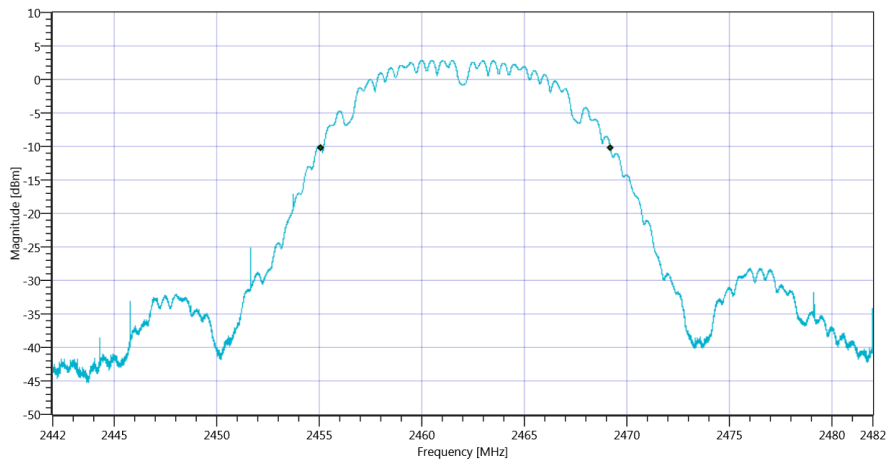
Test at TX 2462 MHz

READ SA SETTINGS:

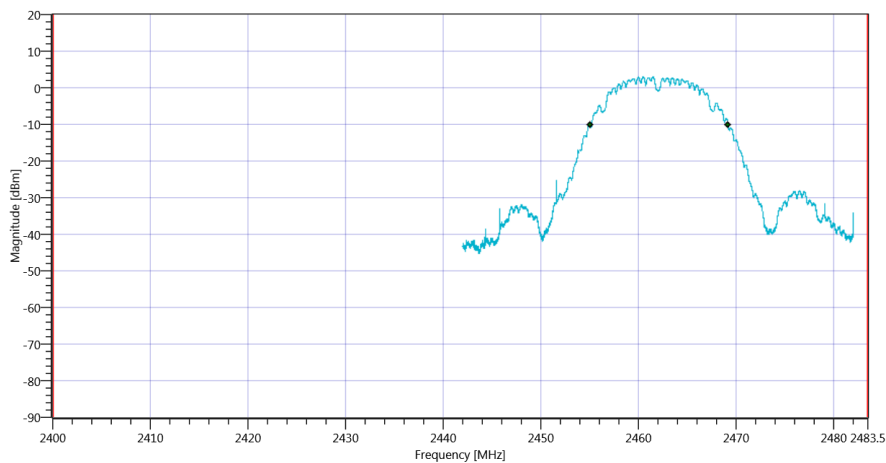
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.29 9.94 20
Start [MHz] Stop [MHz]	2442.000 2482.000
RBW [MHz] VBW [MHz]	0.500000 1.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	14111	kHz	Information
T1 99%	2400.000000	---	2455.1007	MHz	PASS
T2 99%	---	2483.500000	2469.2113	MHz	PASS



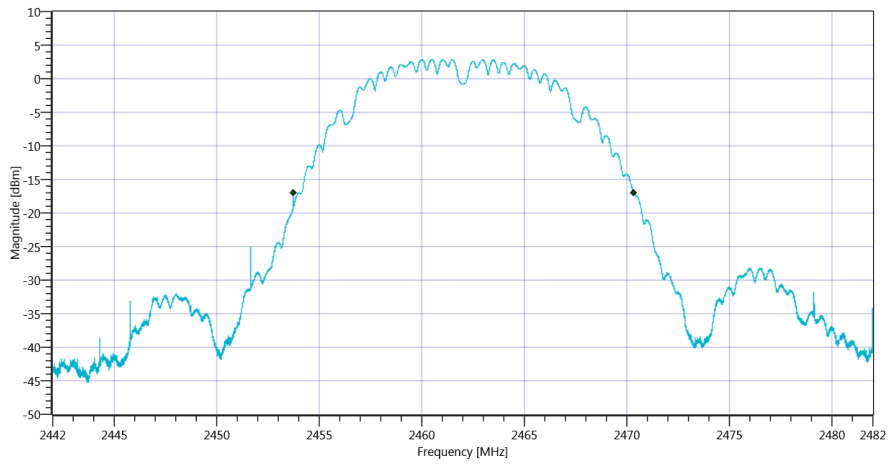
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode 99PCT_02092019_142847.png



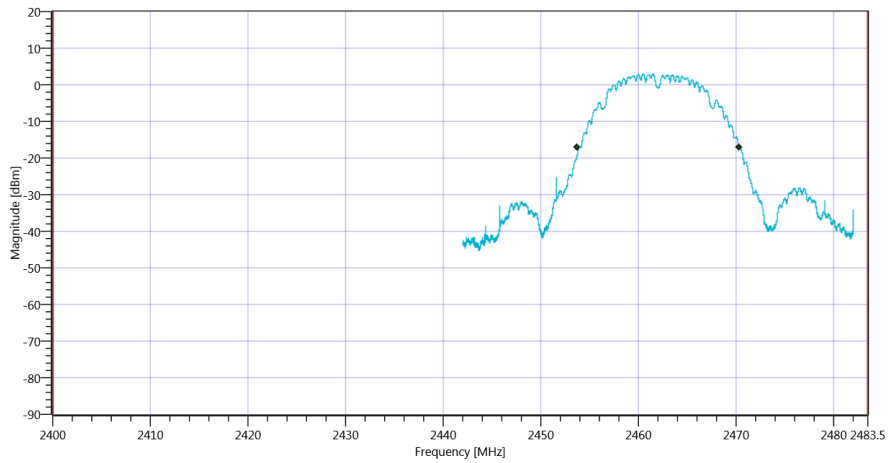
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode_02092019_142850.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	16616	kHz	Information
T1 20dB	2400.000000	---	2453.7400	MHz	PASS
T2 20dB	---	2483.500000	2470.3560	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode 20dB_02092019_142854.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode_02092019_142857.png

TEST FINISHED

General Verdict

02.09.2019 14:28:57 / RT: 34 s

PASS

20. FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:29:01
System Version	1.0.0.20
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 - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

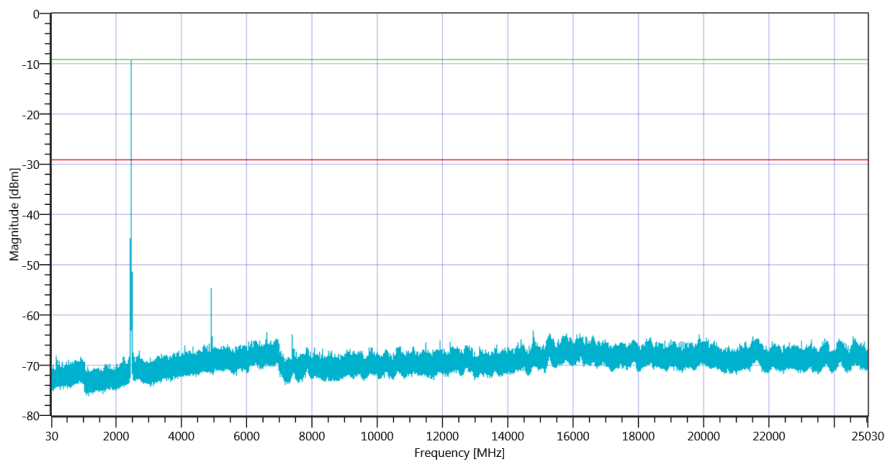
Test at TX 2462 MHz

READ SA SETTINGS:

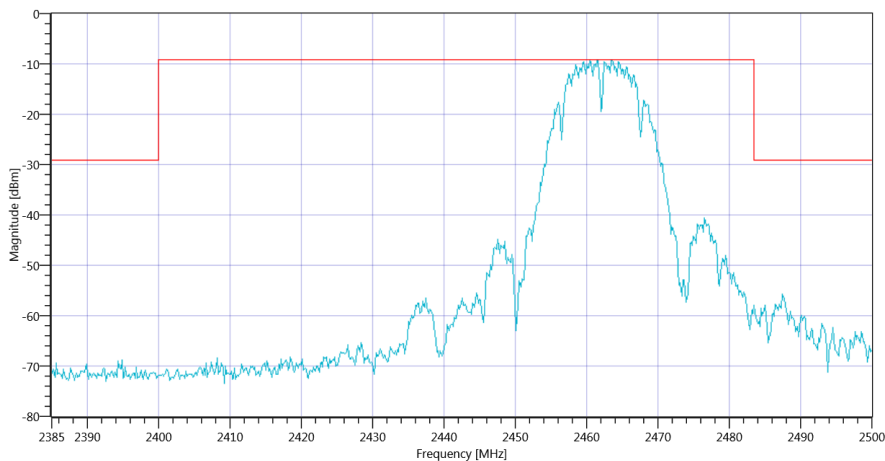
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	1.42 0 20
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2460.50 MHz	---	---	-9.09	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode 2462_02092019_143346.png



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode 2462_02092019_143348.png

TEST FINISHED

General Verdict

02.09.2019 14:33:50 / RT: 288 s

PASS

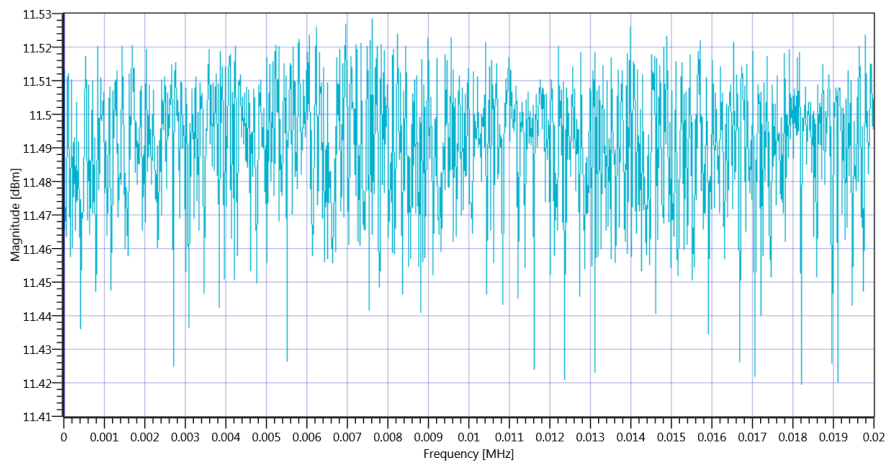
21. FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:33:53
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - 8.7.3 Integration Method; ANSI C63.10-2013 11.13.3.4 Trace averaging across on- and off-times of the EUT transmissions followed by duty cycle correction
Class / TC Version / TC ID	TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01 Version: 0.0.1 TCID_FCC15247_7
My Description	FCC 15.247 Restricted Band Edge Cond. Avg DC corrected DTS - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

Test at TX 2462 MHz

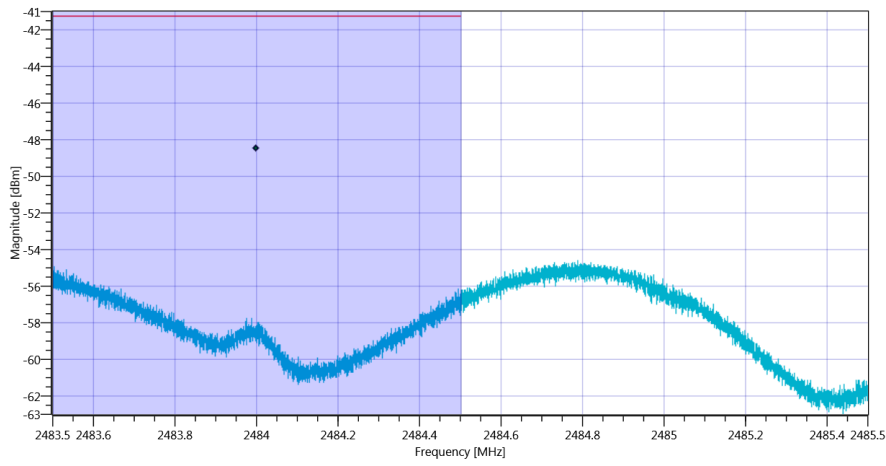
RESULT: Duty Cycle evaluation					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
No enough Bursts detected, Duty Cycle Burst Ratio set to 1					
Duty Cycle (Burst Ratio) max	---	---	1	---	Information
Duty Cycle max	---	---	0	dB	Information
Duty Cycle (Burst Ratio) min	---	---	1	---	Information
Duty Cycle min	---	---	0	dB	Information



Plot_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 b-mode 2462 MHz - Duty Cycle_02092019_143406.png

READ SA SETTINGS:	
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.28 9.94 25
Start [MHz] Stop [MHz]	2483.500 2485.500
RBW [MHz] VBW [MHz]	0.100000 0.500000
Detector TraceMode	RMS AVER
Sweep: Time [ms] Count Points per Section Type	32 300 32000 SWE
Marker Method	Band Power

RESULT: TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Duty Cycle worst case	---	---	0	dB	Information
Band Power without Antenna Gain Avg	---	---	-48.47	dBm	Information
Band Power without Antenna Gain Avg DC corrected	---	---	-48.47	dBm	Information
Band Power incl. Antenna Gain Avg DC corrected	---	-41.23	-48.47	dBm	PASS



Plot_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 b-mode_02092019_143428.png

TEST FINISHED

General Verdict

02.09.2019 14:34:28 / RT: 34 s

PASS

22. FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 b-mode

Test References	
TC Start	02.09.2019 14:34:32
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
Class / TC Version / TC ID	TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01 Version: 0.0.1 TCID_FCC15247_3
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 b-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - PowerMeter
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 NRP-Z81,102585

Test at TX 2462 MHz

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	--	--	14.46	dBm	PASS

TEST FINISHED		
General Verdict	02.09.2019 14:34:36 / RT: 4 s	PASS

23. FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:39:48
System Version	1.0.0.20
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 - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

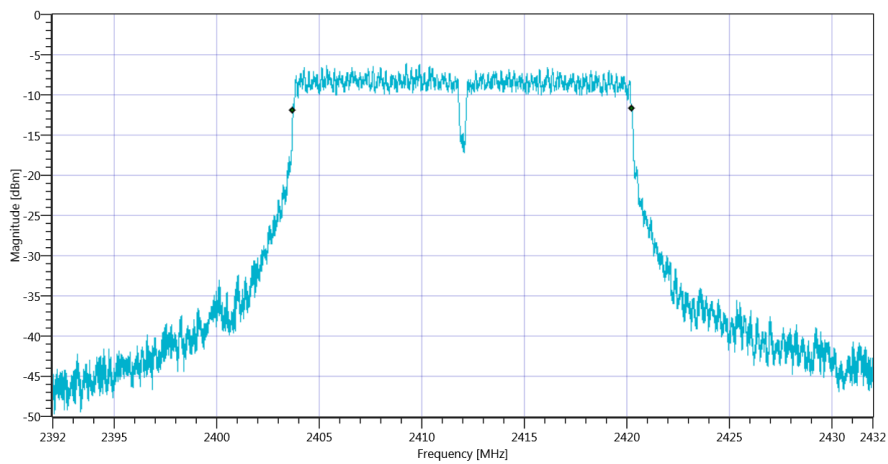
Test at TX 2412 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	9.37 9.83 15
Start [MHz] Stop [MHz]	2392.000 2432.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	16536	kHz	PASS



Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 g-mode_02092019_144016.png

TEST FINISHED

General Verdict

02.09.2019 14:40:16 / RT: 27 s

PASS

24. FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:40:19
System Version	1.0.0.20
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 - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

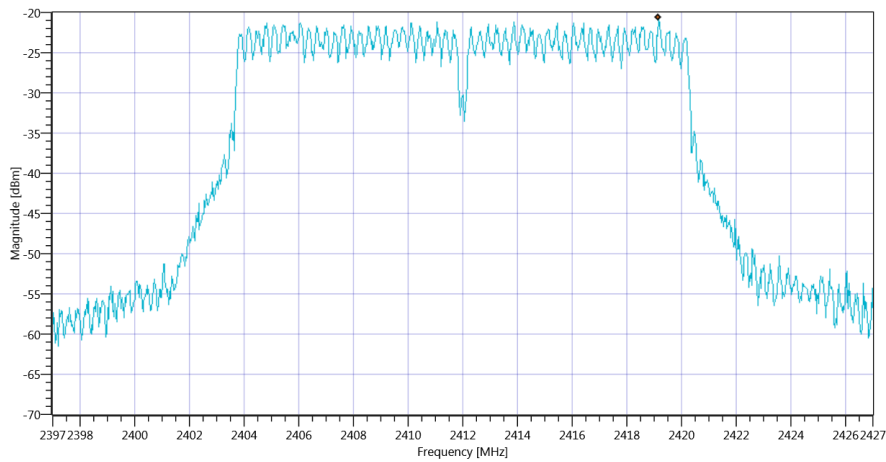
Test at TX 2412 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	9.17 9.83 15
Start [MHz] Stop [MHz]	2397.000 2427.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 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	-20.69	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 g-mode_02092019_144054.png

TEST FINISHED

General Verdict	02.09.2019 14:40:54 / RT: 34 s	PASS
-----------------	--------------------------------	------

25. FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:40:57
System Version	1.0.0.20
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 - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

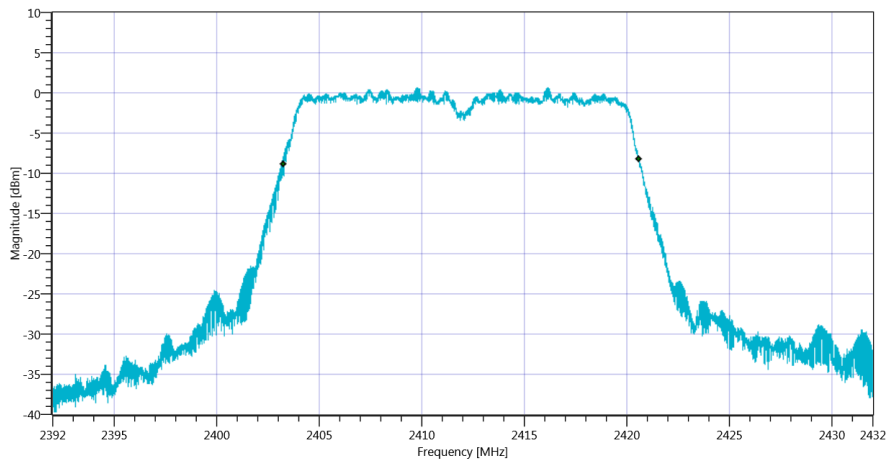
Test at TX 2412 MHz

READ SA SETTINGS:

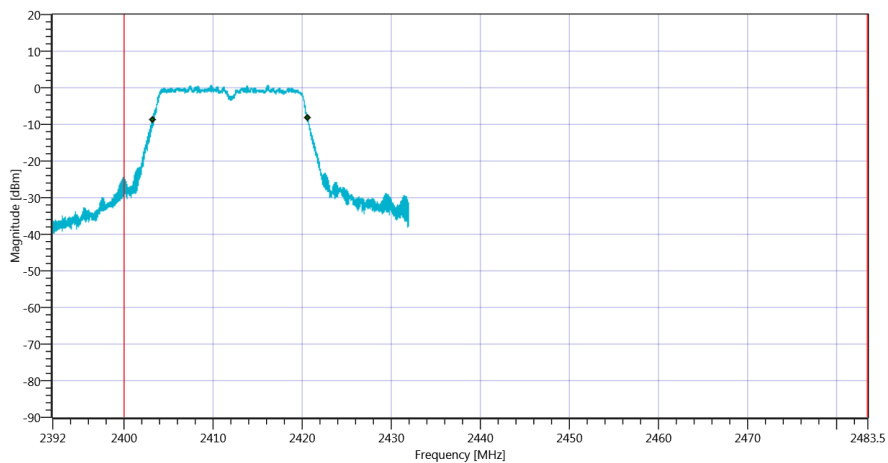
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	8.91 9.83 15
Start [MHz] Stop [MHz]	2392.000 2432.000
RBW [MHz] VBW [MHz]	0.500000 1.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	17334	kHz	Information
T1 99%	2400.000000	---	2403.2529	MHz	PASS
T2 99%	---	2483.500000	2420.5871	MHz	PASS



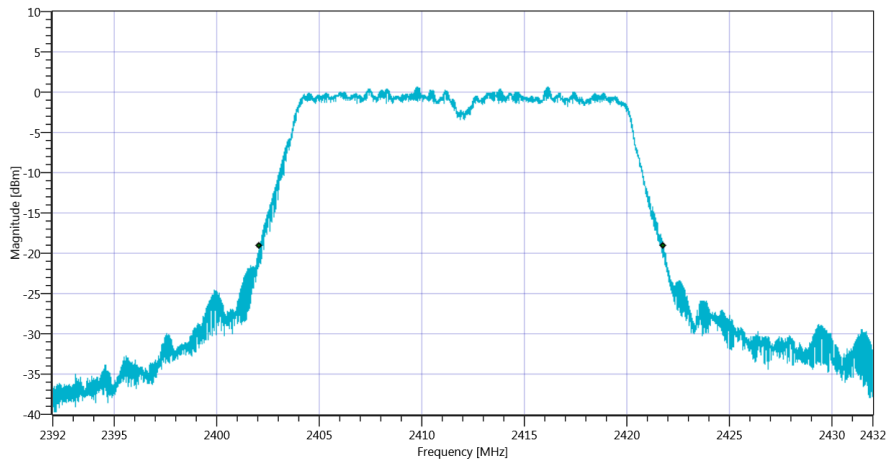
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode 99PCT_02092019_144122.png



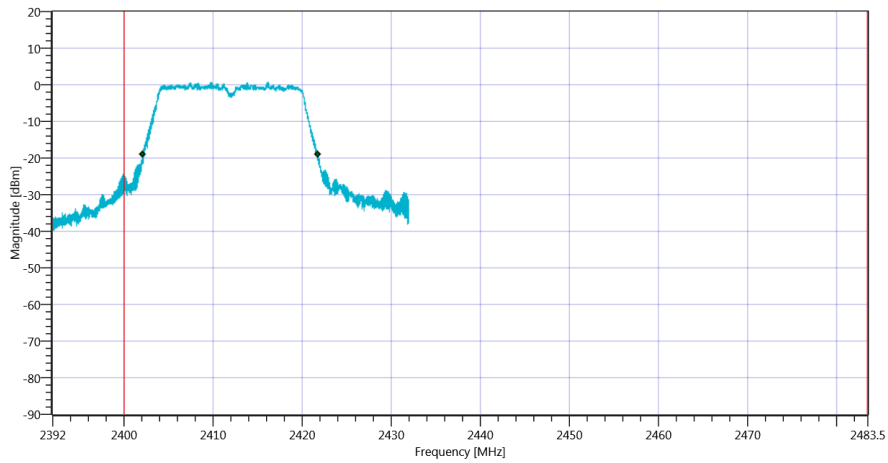
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode_02092019_144125.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	19704	kHz	Information
T1 20dB	2400.000000	---	2402.0920	MHz	PASS
T2 20dB	---	2483.500000	2421.7960	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode_02092019_144129.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode_02092019_144132.png

TEST FINISHED

General Verdict

02.09.2019 14:41:32 / RT: 34 s

PASS

26. FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:41:36
System Version	1.0.0.20
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 - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

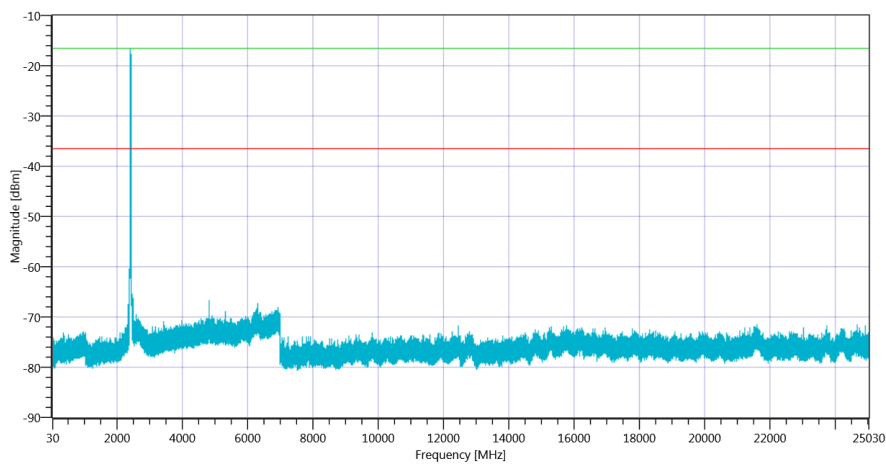
Test at TX 2412 MHz

READ SA SETTINGS:

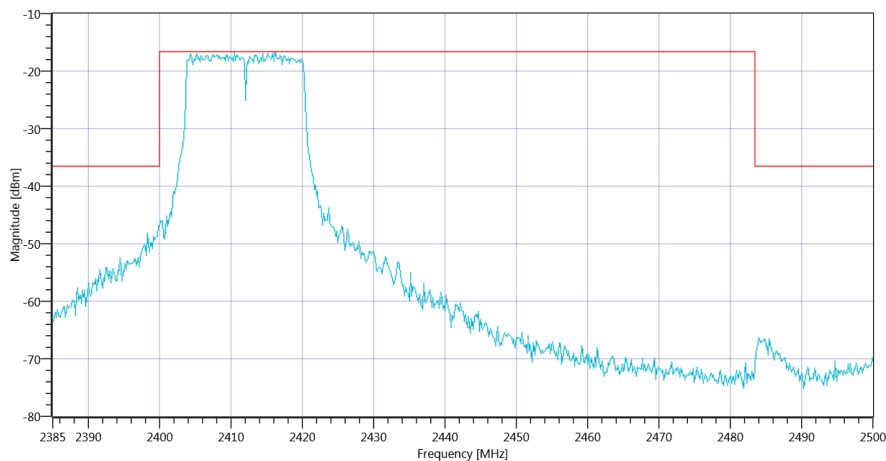
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-0.47 0 15
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2410.50 MHz	---	---	-16.58	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode 2412_02092019_144621.png



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode 2412_02092019_144623.png

TEST FINISHED

General Verdict	02.09.2019 14:46:24 / RT: 288 s	PASS
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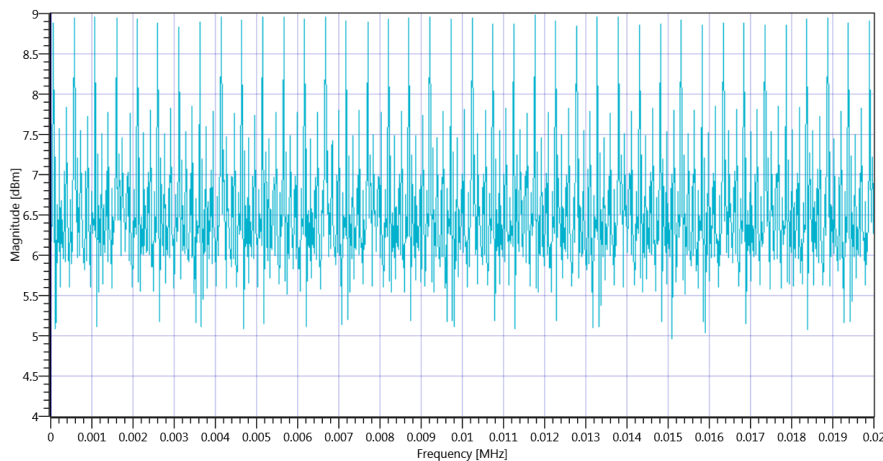
27. FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:46:28
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - 8.7.3 Integration Method; ANSI C63.10-2013 11.13.3.4 Trace averaging across on- and off-times of the EUT transmissions followed by duty cycle correction
Class / TC Version / TC ID	TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01 Version: 0.0.1 TCID_FCC15247_7
My Description	FCC 15.247 Restricted Band Edge Cond. Avg DC corrected DTS - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

Test at TX 2412 MHz

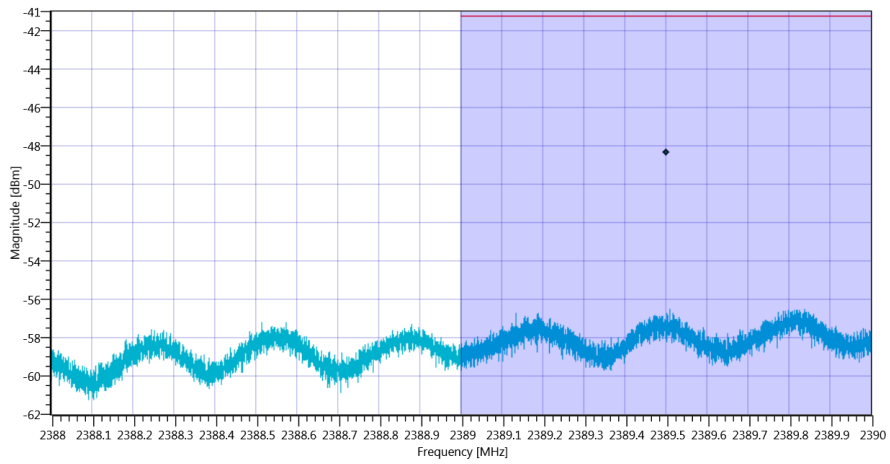
RESULT: Duty Cycle evaluation					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
No enough Bursts detected, Duty Cycle Burst Ratio set to 1					
Duty Cycle (Burst Ratio) max	---	---	1	---	Information
Duty Cycle max	---	---	0	dB	Information
Duty Cycle (Burst Ratio) min	---	---	1	---	Information
Duty Cycle min	---	---	0	dB	Information



Plot_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 g-mode 2412 MHz - Duty Cycle_02092019_144641.png

READ SA SETTINGS:	
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	14.10 9.83 20
Start [MHz] Stop [MHz]	2388.000 2390.000
RBW [MHz] VBW [MHz]	0.100000 0.500000
Detector TraceMode	RMS AVER
Sweep: Time [ms] Count Points per Section Type	32 300 32000 SWE
Marker Method	Band Power

RESULT: TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Duty Cycle worst case	---	---	0	dB	Information
Band Power without Antenna Gain Avg	---	---	-48.35	dBm	Information
Band Power without Antenna Gain Avg DC corrected	---	---	-48.35	dBm	Information
Band Power incl. Antenna Gain Avg DC corrected	---	-41.23	-48.35	dBm	PASS



Plot_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 g-mode_02092019_144702.png

TEST FINISHED

General Verdict

02.09.2019 14:47:02 / RT: 34 s

PASS

28. FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:47:06
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
Class / TC Version / TC ID	TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01 Version: 0.0.1 TCID_FCC15247_3
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - PowerMeter
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 NRP-Z81,102585

Test at TX 2412 MHz

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	--	--	17.81	dBm	PASS

TEST FINISHED		
General Verdict	02.09.2019 14:47:10 / RT: 3 s	PASS

29. FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:48:47
System Version	1.0.0.20
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 - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

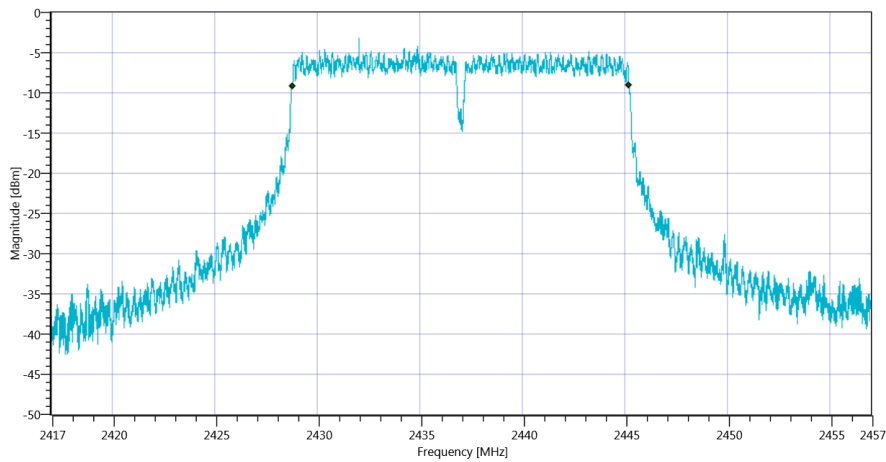
Test at TX 2437 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.39 9.89 20
Start [MHz] Stop [MHz]	2417.000 2457.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	16408	kHz	PASS



Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 g-mode_02092019_144913.png

TEST FINISHED

General Verdict

02.09.2019 14:49:13 / RT: 26 s

PASS

30. FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:49:17
System Version	1.0.0.20
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 - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

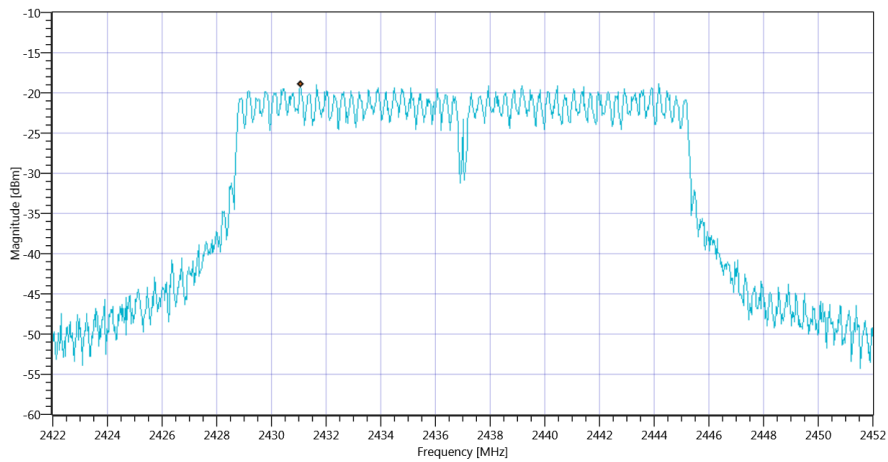
Test at TX 2437 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.03 9.89 20
Start [MHz] Stop [MHz]	2422.000 2452.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 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	-18.88	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 g-mode_02092019_144951.png

TEST FINISHED

General Verdict	02.09.2019 14:49:52 / RT: 34 s	PASS
-----------------	--------------------------------	------

31. FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:49:55
System Version	1.0.0.20
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 - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

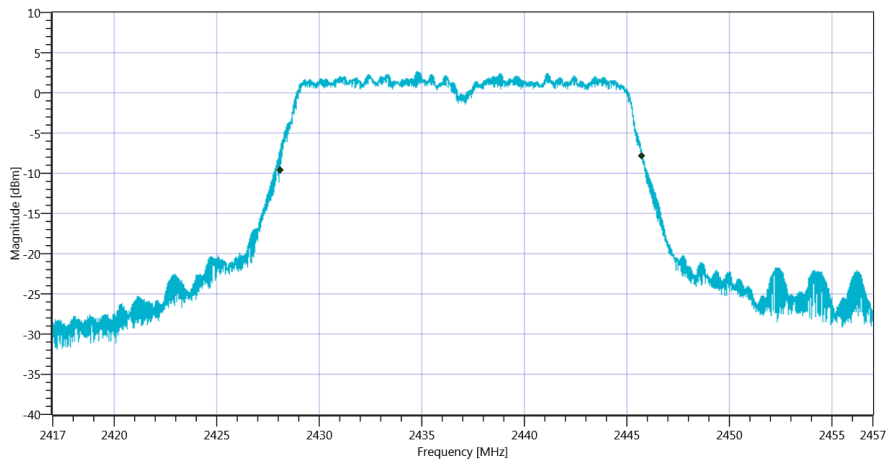
Test at TX 2437 MHz

READ SA SETTINGS:

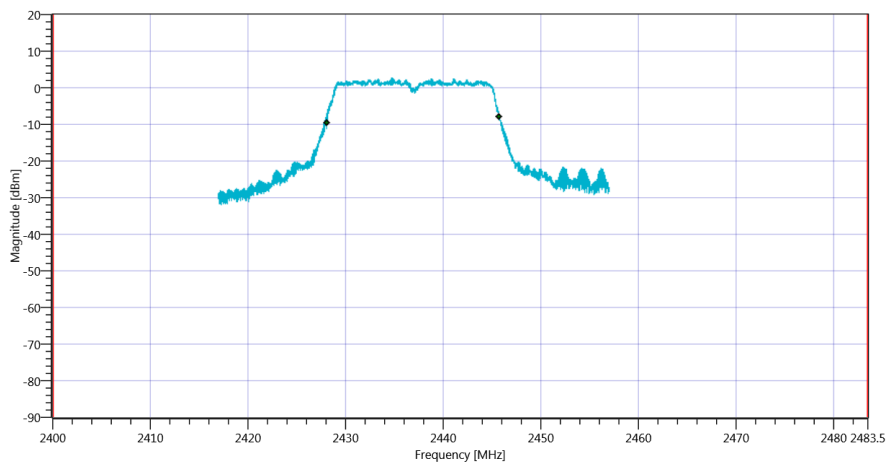
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.10 9.89 20
Start [MHz] Stop [MHz]	2417.000 2457.000
RBW [MHz] VBW [MHz]	0.500000 1.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	17658	kHz	Information
T1 99%	2400.000000	---	2428.0889	MHz	PASS
T2 99%	---	2483.500000	2445.7471	MHz	PASS



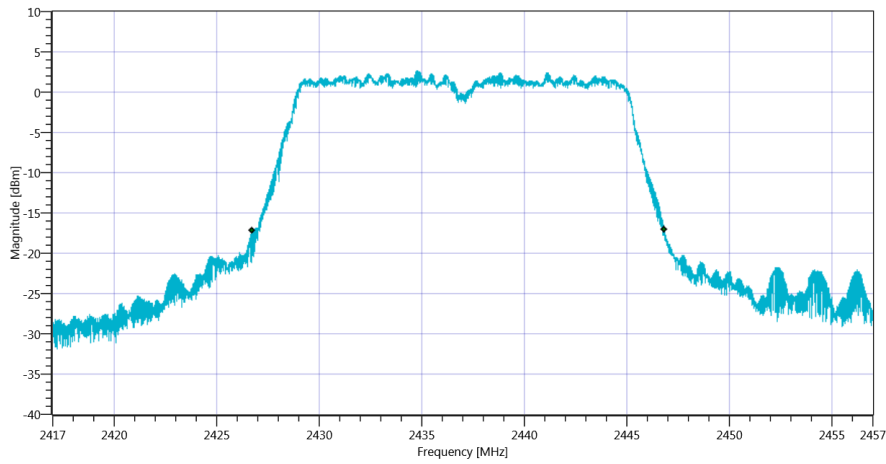
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode 99PCT_02092019_145019.png



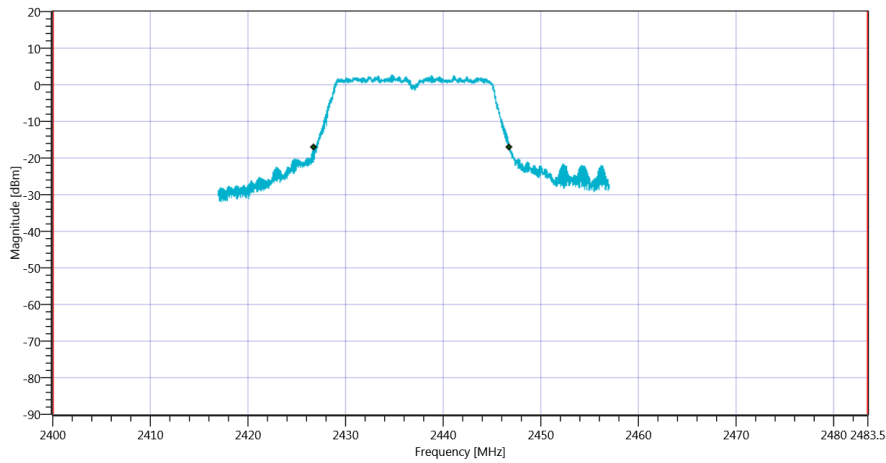
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode_02092019_145022.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	20096	kHz	Information
T1 20dB	2400.000000	---	2426.7320	MHz	PASS
T2 20dB	---	2483.500000	2446.8280	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode 20dB_02092019_145027.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode_02092019_145030.png

TEST FINISHED

General Verdict

02.09.2019 14:50:30 / RT: 34 s

PASS

32. FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:50:34
System Version	1.0.0.20
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 - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

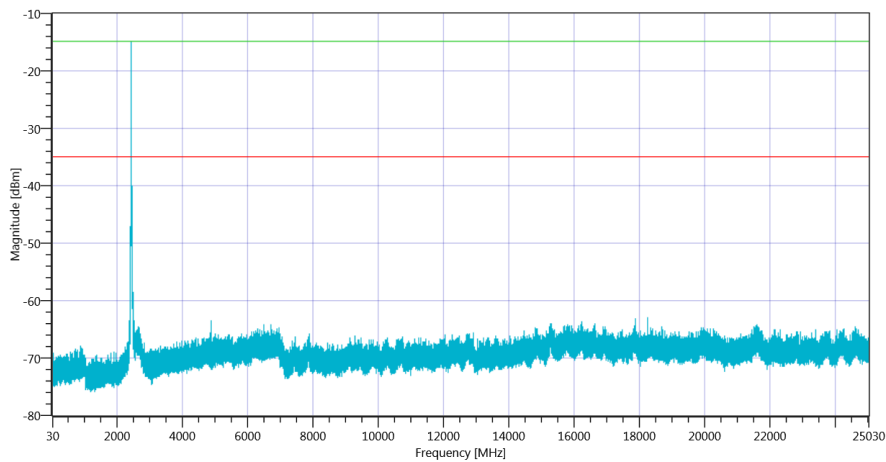
Test at TX 2437 MHz

READ SA SETTINGS:

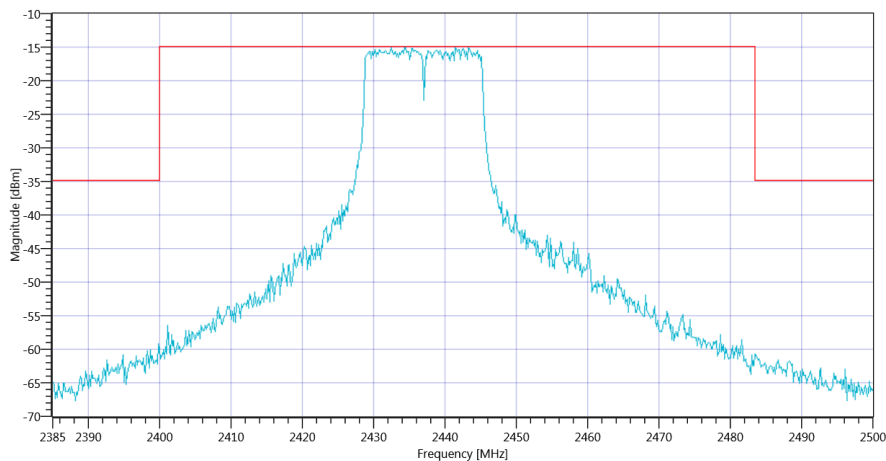
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	1.10 0 20
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2434.33 MHz	---	---	-14.86	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode 2437_02092019_145518.png



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode 2437_02092019_145521.png

TEST FINISHED

General Verdict

02.09.2019 14:55:22 / RT: 288 s

PASS

33. FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:56:04
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
Class / TC Version / TC ID	TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01 Version: 0.0.1 TCID_FCC15247_3
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - PowerMeter
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 NRP-Z81,102585

Test at TX 2437 MHz

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	--	--	19.62	dBm	PASS

TEST FINISHED		
General Verdict	02.09.2019 14:56:08 / RT: 4 s	PASS

34. FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:57:05
System Version	1.0.0.20
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 - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

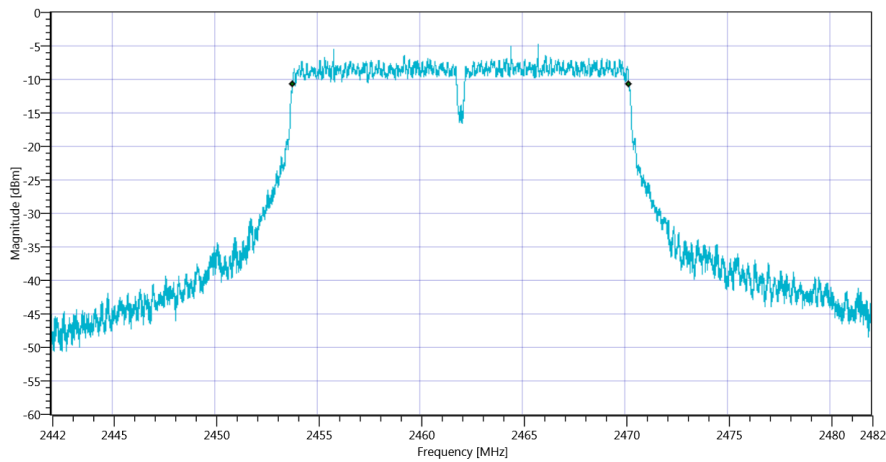
Test at TX 2462 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	8.81 9.94 15
Start [MHz] Stop [MHz]	2442.000 2482.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	16388	kHz	PASS



Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 g-mode_02092019_145732.png

TEST FINISHED

General Verdict

02.09.2019 14:57:32 / RT: 26 s

PASS

35. FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:57:36
System Version	1.0.0.20
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 - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

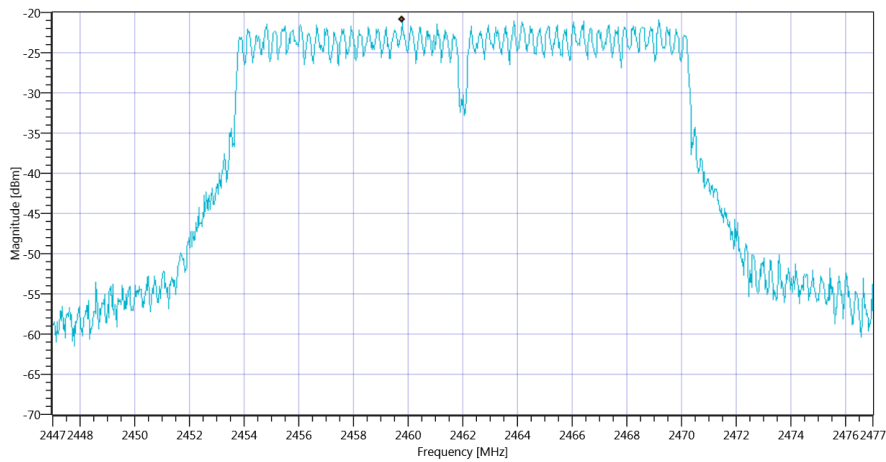
Test at TX 2462 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	9.24 9.94 15
Start [MHz] Stop [MHz]	2447.000 2477.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 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	-20.88	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 g-mode_02092019_145810.png

TEST FINISHED

General Verdict	02.09.2019 14:58:10 / RT: 34 s	PASS
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36. FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:58:14
System Version	1.0.0.20
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 - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

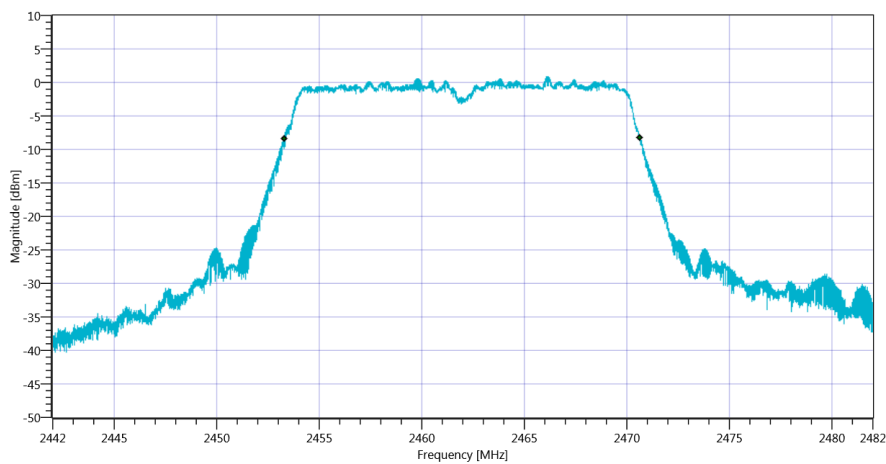
Test at TX 2462 MHz

READ SA SETTINGS:

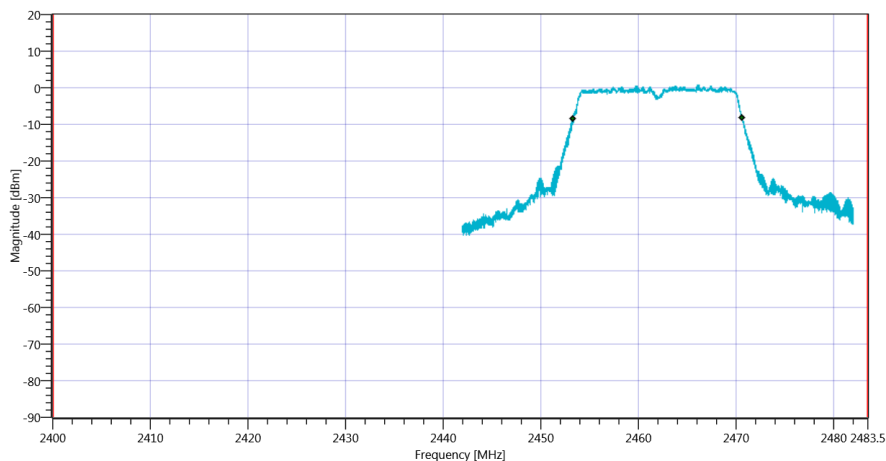
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	8.93 9.94 15
Start [MHz] Stop [MHz]	2442.000 2482.000
RBW [MHz] VBW [MHz]	0.500000 1.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	17346	kHz	Information
T1 99%	2400.000000	---	2453.3009	MHz	PASS
T2 99%	---	2483.500000	2470.6471	MHz	PASS



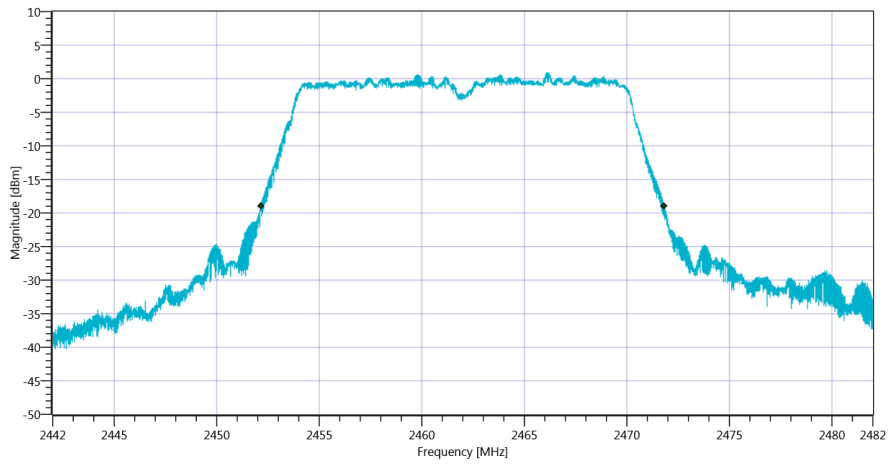
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode 99PCT_02092019_145838.png



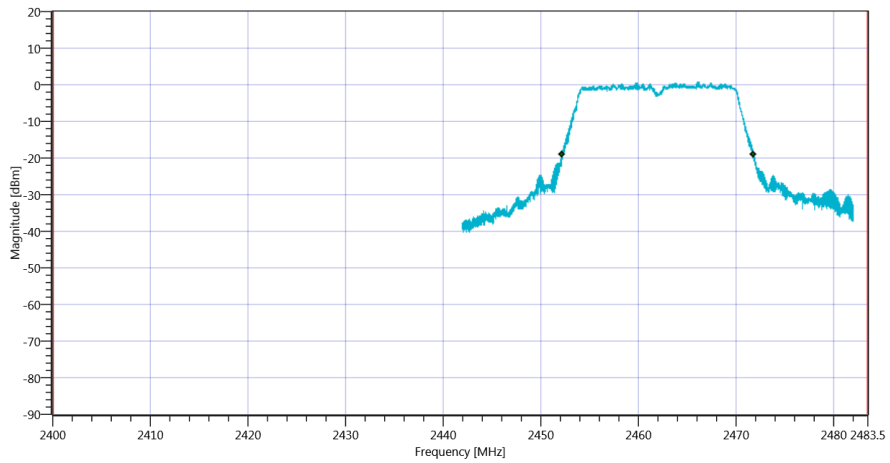
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode_02092019_145841.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	19652	kHz	Information
T1 20dB	2400.000000	---	2452.1720	MHz	PASS
T2 20dB	---	2483.500000	2471.8240	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode 20dB_02092019_145845.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode_02092019_145849.png

TEST FINISHED

General Verdict

02.09.2019 14:58:49 / RT: 34 s

PASS

37. FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 14:58:53
System Version	1.0.0.20
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 - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

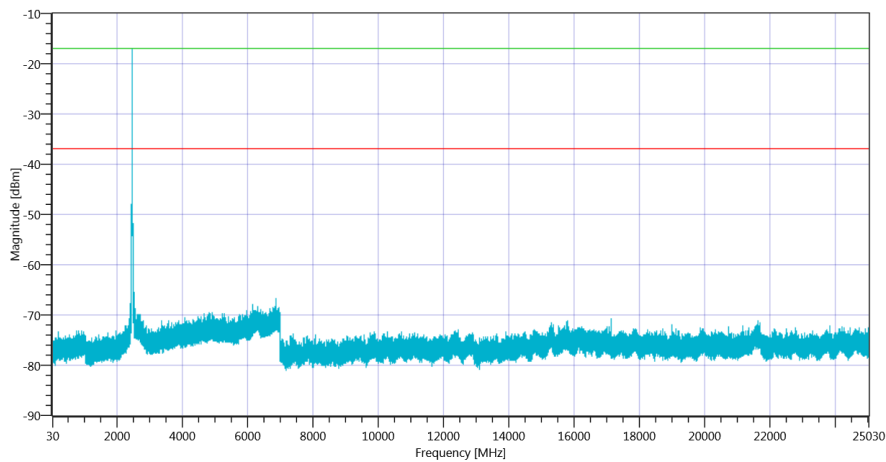
Test at TX 2462 MHz

READ SA SETTINGS:

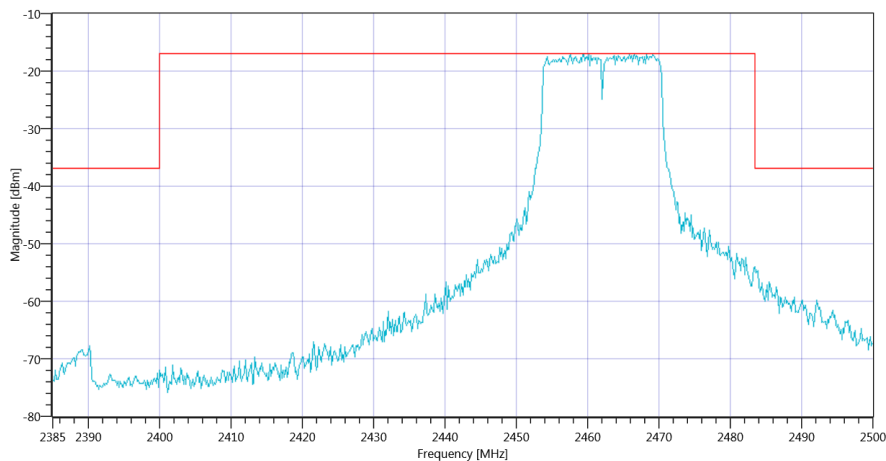
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-0.69 0 15
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2459.33 MHz	---	---	-16.95	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode 2462_02092019_150338.png



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode 2462_02092019_150340.png

TEST FINISHED

General Verdict

02.09.2019 15:03:41 / RT: 288 s

PASS

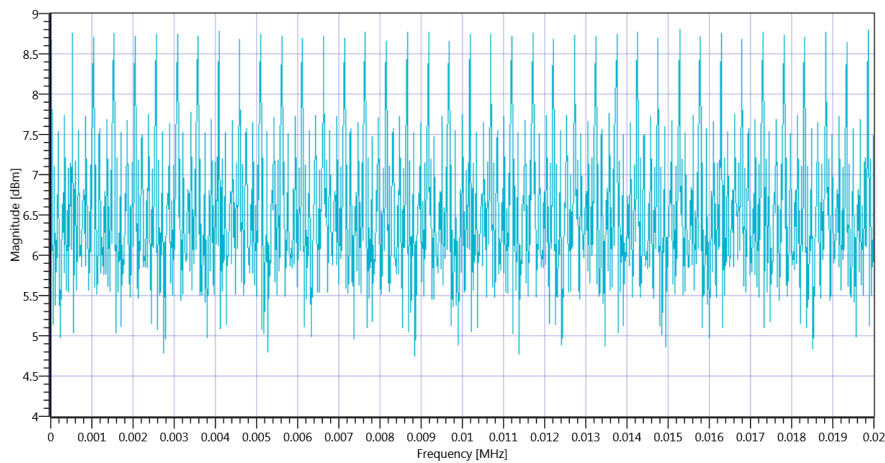
38. FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 15:03:45
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - 8.7.3 Integration Method; ANSI C63.10-2013 11.13.3.4 Trace averaging across on- and off-times of the EUT transmissions followed by duty cycle correction
Class / TC Version / TC ID	TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01 Version: 0.0.1 TCID_FCC15247_7
My Description	FCC 15.247 Restricted Band Edge Cond. Avg DC corrected DTS - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

Test at TX 2462 MHz

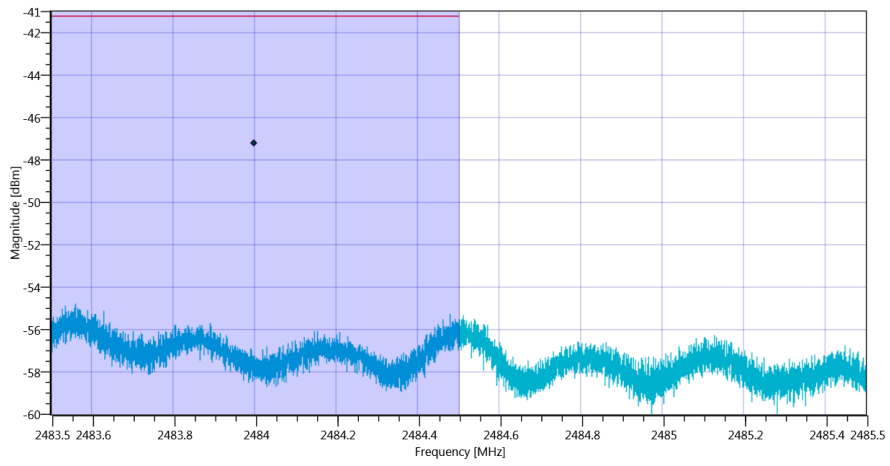
RESULT: Duty Cycle evaluation					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
No enough Bursts detected, Duty Cycle Burst Ratio set to 1					
Duty Cycle (Burst Ratio) max	---	---	1	---	Information
Duty Cycle max	---	---	0	dB	Information
Duty Cycle (Burst Ratio) min	---	---	1	---	Information
Duty Cycle min	---	---	0	dB	Information



Plot_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 g-mode 2462 MHz - Duty Cycle_02092019_150358.png

READ SA SETTINGS:	
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	14.34 9.94 20
Start [MHz] Stop [MHz]	2483.500 2485.500
RBW [MHz] VBW [MHz]	0.100000 0.500000
Detector TraceMode	RMS AVER
Sweep: Time [ms] Count Points per Section Type	32 300 32000 SWE
Marker Method	Band Power

RESULT: TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Duty Cycle worst case	---	---	0	dB	Information
Band Power without Antenna Gain Avg	---	---	-47.23	dBm	Information
Band Power without Antenna Gain Avg DC corrected	---	---	-47.23	dBm	Information
Band Power incl. Antenna Gain Avg DC corrected	---	-41.23	-47.23	dBm	PASS



Plot_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 g-mode_02092019_150420.png

TEST FINISHED

General Verdict

02.09.2019 15:04:20 / RT: 34 s

PASS

39. FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 g-mode

Test References	
TC Start	02.09.2019 15:04:24
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
Class / TC Version / TC ID	TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01 Version: 0.0.1 TCID_FCC15247_3
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 g-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - PowerMeter
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 NRP-Z81,102585

Test at TX 2462 MHz

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	--	--	18.05	dBm	PASS

TEST FINISHED		
General Verdict	02.09.2019 15:04:28 / RT: 4 s	PASS

40. FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:06:28
System Version	1.0.0.20
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 - WLAN 2G4 nHT20_mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

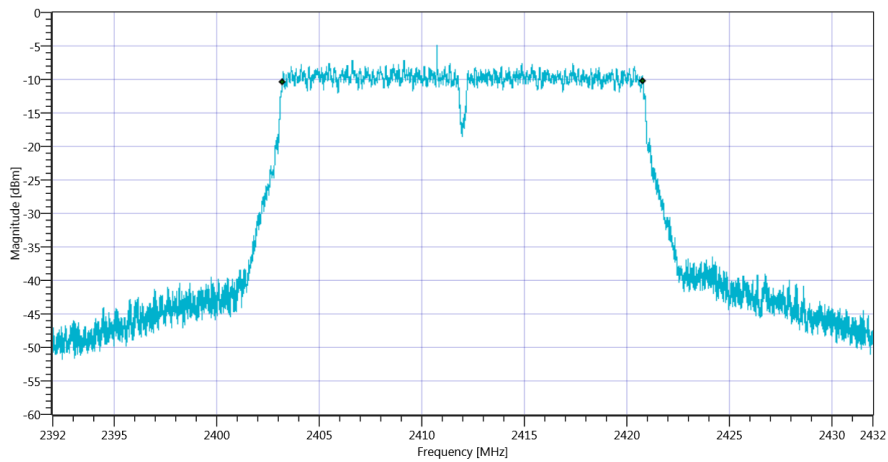
Test at TX 2412 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	7.84 9.83 15
Start [MHz] Stop [MHz]	2392.000 2432.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	--	17588	kHz	PASS



Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 nHT20-mode_02092019_150656.png

TEST FINISHED

General Verdict	02.09.2019 15:06:56 / RT: 27 s	PASS
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41. FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:07:00
System Version	1.0.0.20
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 - WLAN 2G4 nHT20_mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

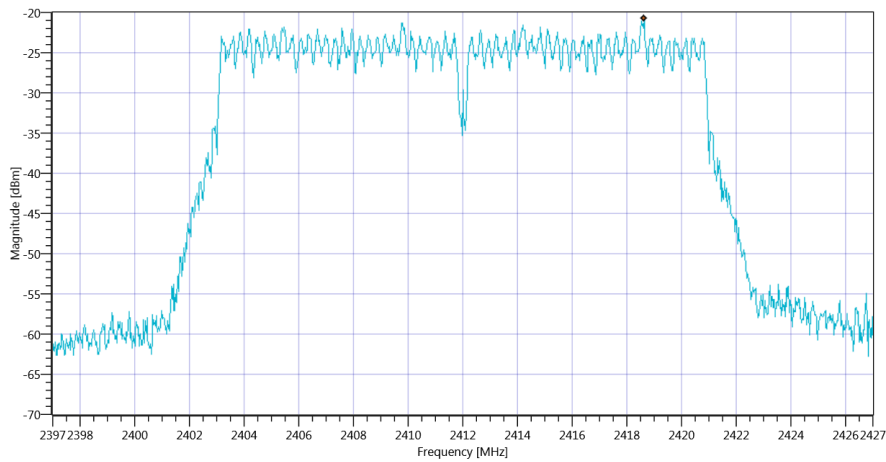
Test at TX 2412 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	8.12 9.83 15
Start [MHz] Stop [MHz]	2397.000 2427.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 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	-20.73	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 nHT20-mode_02092019_150734.png

TEST FINISHED

General Verdict	02.09.2019 15:07:34 / RT: 34 s	PASS
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42. FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:07:38
System Version	1.0.0.20
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 - WLAN 2G4 nHT20_mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

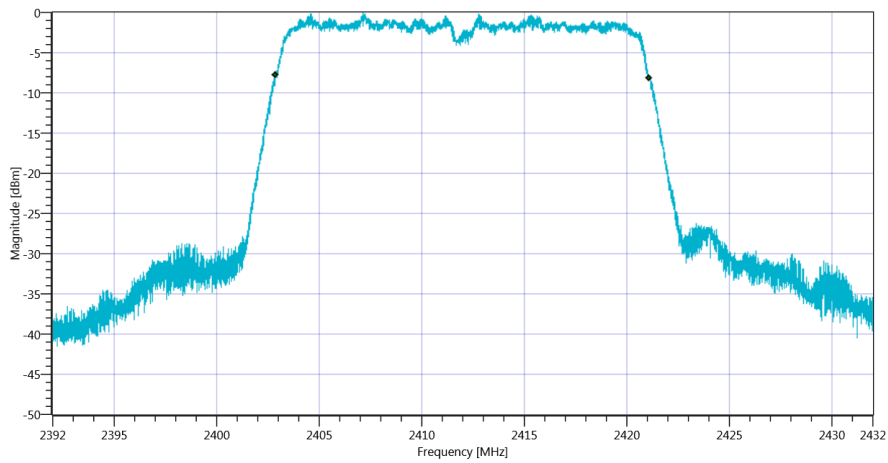
Test at TX 2412 MHz

READ SA SETTINGS:

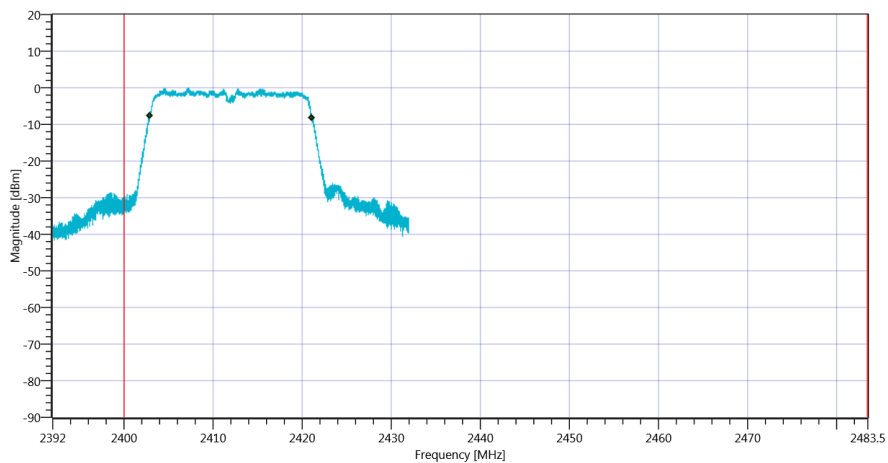
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	8.22 9.83 15
Start [MHz] Stop [MHz]	2392.000 2432.000
RBW [MHz] VBW [MHz]	0.500000 1.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	18226	kHz	Information
T1 99%	2400.000000	---	2402.8809	MHz	PASS
T2 99%	---	2483.500000	2421.1071	MHz	PASS



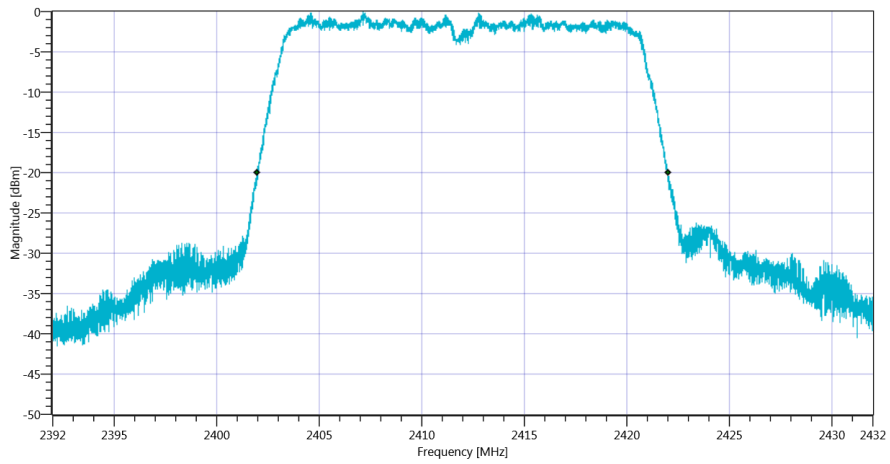
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode 99PCT_02092019_150802.png



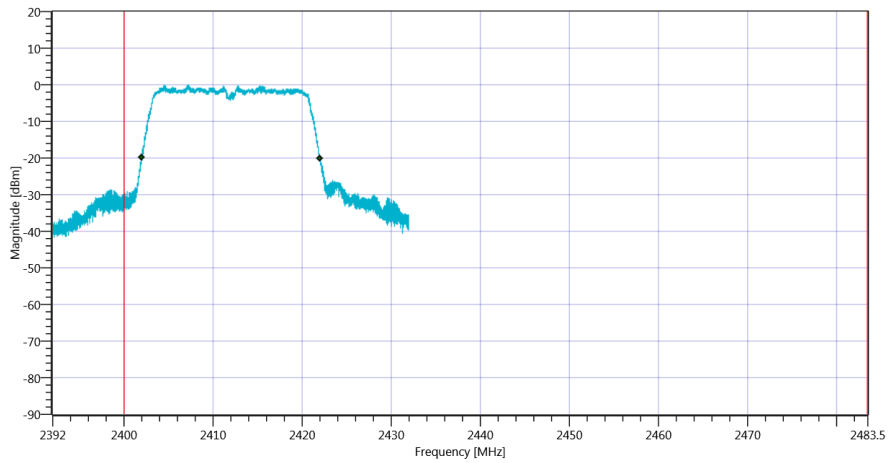
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode_02092019_150805.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	20044	kHz	Information
T1 20dB	2400.000000	---	2401.9640	MHz	PASS
T2 20dB	---	2483.500000	2422.0080	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode 20dB_02092019_150809.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode_02092019_150812.png

TEST FINISHED

General Verdict

02.09.2019 15:08:12 / RT: 34 s

PASS

43. FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:08:16
System Version	1.0.0.20
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 - WLAN 2G4 nHT20_mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

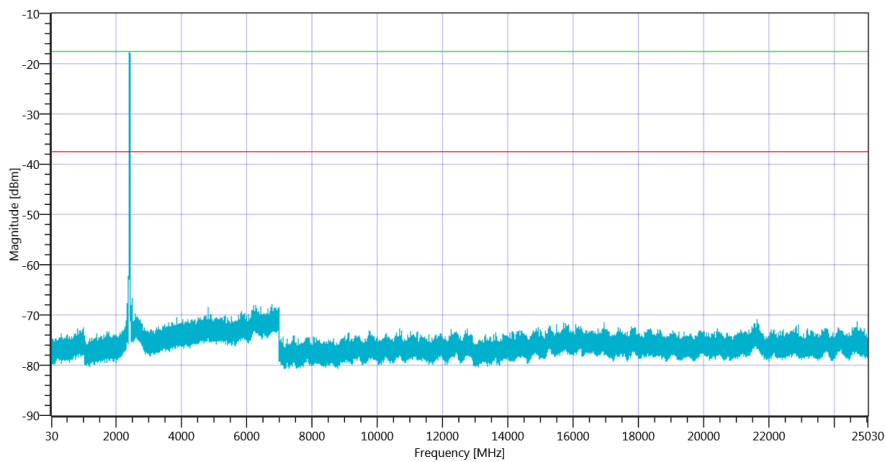
Test at TX 2412 MHz

READ SA SETTINGS:

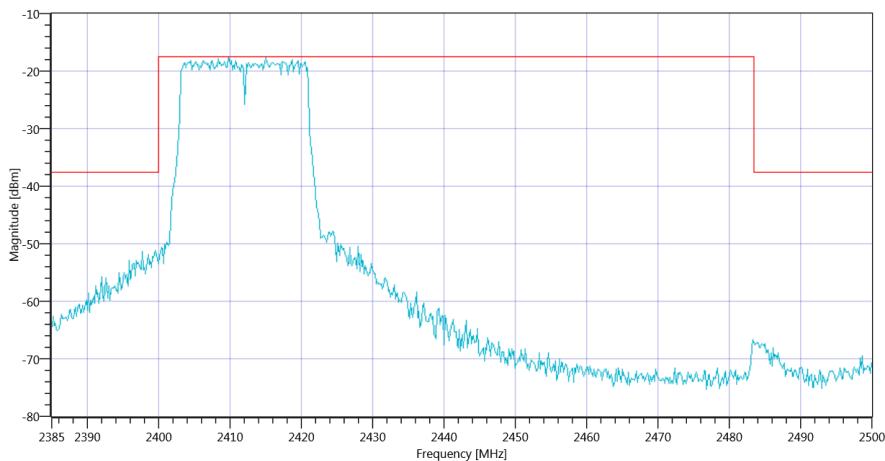
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-1.49 0 15
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2409.83 MHz	---	---	-17.51	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 nHT20-mode 2412_02092019_151301.png



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 nHT20-mode 2412_02092019_151304.png

TEST FINISHED

General Verdict

02.09.2019 15:13:05 / RT: 288 s

PASS

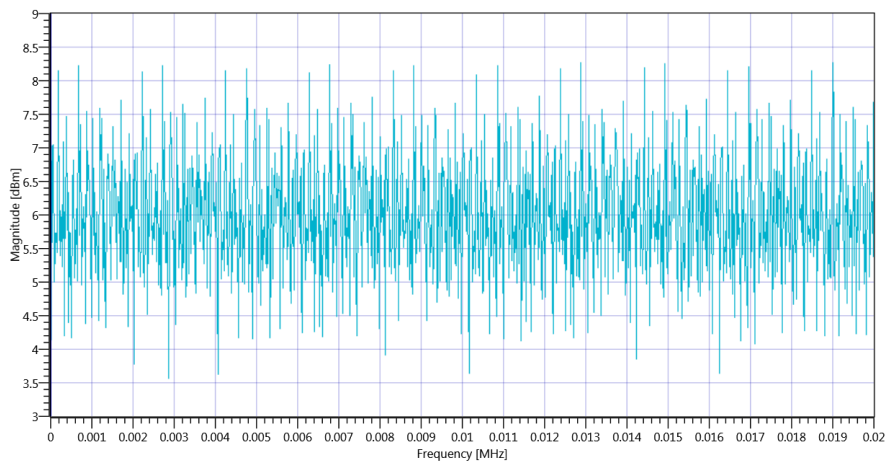
44. FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:13:08
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - 8.7.3 Integration Method; ANSI C63.10-2013 11.13.3.4 Trace averaging across on- and off-times of the EUT transmissions followed by duty cycle correction
Class / TC Version / TC ID	TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01 Version: 0.0.1 TCID_FCC15247_7
My Description	FCC 15.247 Restricted Band Edge Cond. Avg DC corrected DTS - WLAN 2G4 nHT20_mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

Test at TX 2412 MHz

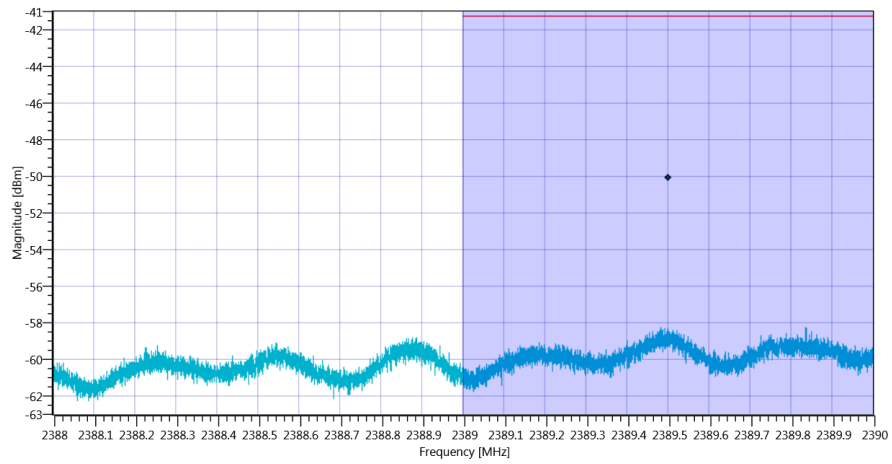
RESULT: Duty Cycle evaluation					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
No enough Bursts detected, Duty Cycle Burst Ratio set to 1					
Duty Cycle (Burst Ratio) max	---	---	1	---	Information
Duty Cycle max	---	---	0	dB	Information
Duty Cycle (Burst Ratio) min	---	---	1	---	Information
Duty Cycle min	---	---	0	dB	Information



Plot_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 nHT20-mode 2412 MHz - Duty Cycle_02092019_151322.png

READ SA SETTINGS:	
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	13.40 9.83 20
Start [MHz] Stop [MHz]	2388.000 2390.000
RBW [MHz] VBW [MHz]	0.100000 0.500000
Detector TraceMode	RMS AVER
Sweep: Time [ms] Count Points per Section Type	32 300 32000 SWE
Marker Method	Band Power

RESULT: TC_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Duty Cycle worst case	---	---	0	dB	Information
Band Power without Antenna Gain Avg	---	---	-50.08	dBm	Information
Band Power without Antenna Gain Avg DC corrected	---	---	-50.08	dBm	Information
Band Power incl. Antenna Gain Avg DC corrected	---	-41.23	-50.08	dBm	PASS



Plot_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS ~ WLAN2G4 nHT20-mode_02092019_151343.png

TEST FINISHED

General Verdict

02.09.2019 15:13:43 / RT: 35 s

PASS

45. FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:13:47
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
Class / TC Version / TC ID	TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01 Version: 0.0.1 TCID_FCC15247_3
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 nHT20-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - PowerMeter
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 NRP-Z81,102585

Test at TX 2412 MHz

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	--	--	16.2	dBm	PASS

TEST FINISHED		
General Verdict	02.09.2019 15:13:52 / RT: 4 s	PASS

46. FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:15:05
System Version	1.0.0.20
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 - WLAN 2G4 nHT20_mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

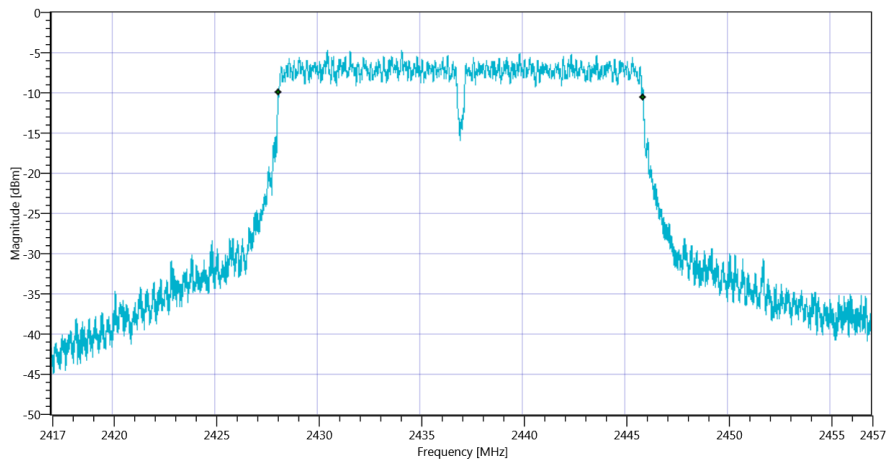
Test at TX 2437 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.65 9.89 20
Start [MHz] Stop [MHz]	2417.000 2457.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	--	17812	kHz	PASS



Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 nHT20-mode_02092019_151531.png

TEST FINISHED

General Verdict	02.09.2019 15:15:31 / RT: 26 s	PASS
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47. FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:15:35
System Version	1.0.0.20
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 - WLAN 2G4 nHT20_mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

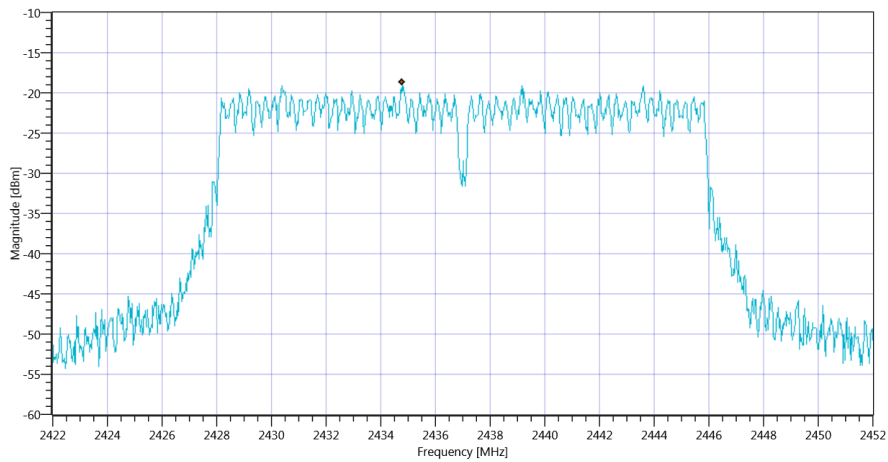
Test at TX 2437 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.36 9.89 20
Start [MHz] Stop [MHz]	2422.000 2452.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 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	-18.72	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 nHT20-mode_02092019_151610.png

TEST FINISHED

General Verdict	02.09.2019 15:16:10 / RT: 34 s	PASS
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48. FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:16:14
System Version	1.0.0.20
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 - WLAN 2G4 nHT20_mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

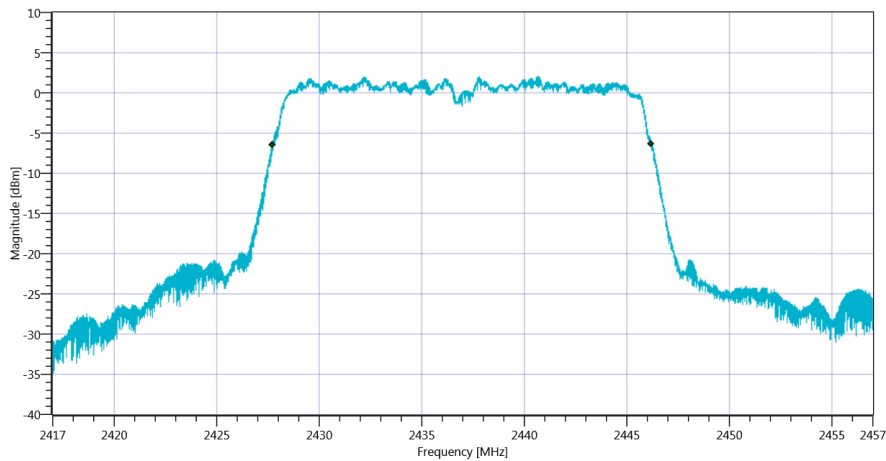
Test at TX 2437 MHz

READ SA SETTINGS:

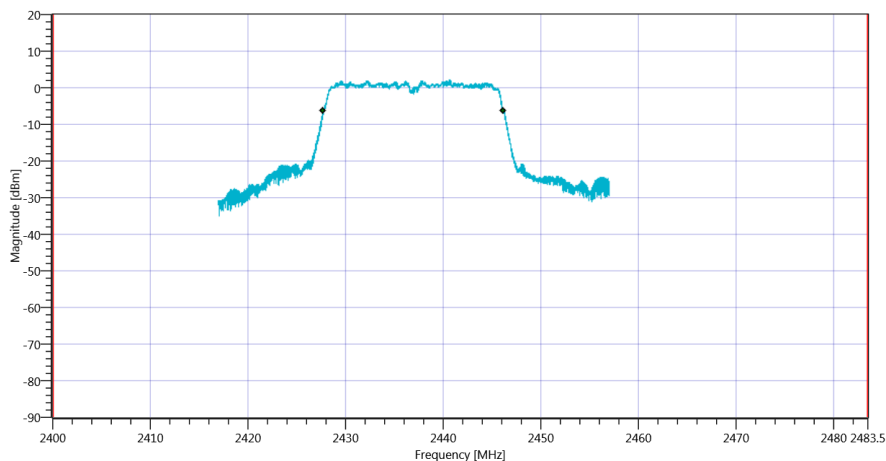
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.48 9.89 20
Start [MHz] Stop [MHz]	2417.000 2457.000
RBW [MHz] VBW [MHz]	0.500000 1.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	18466	kHz	Information
T1 99%	2400.000000	---	2427.7249	MHz	PASS
T2 99%	---	2483.500000	2446.1911	MHz	PASS



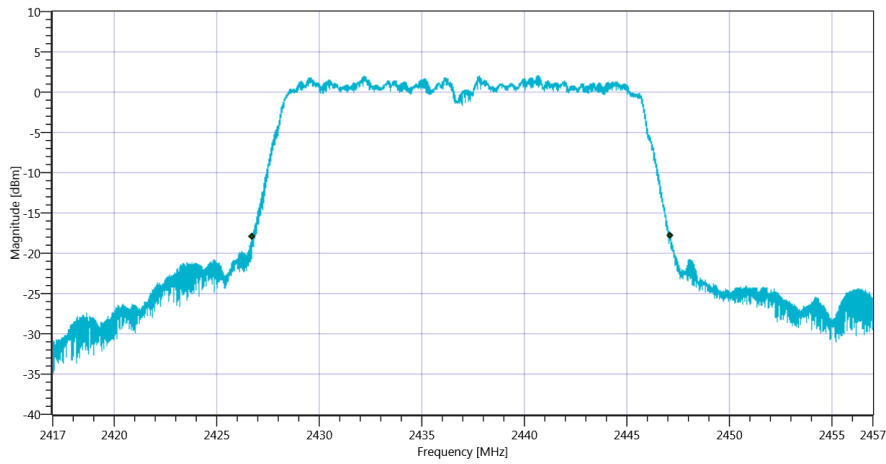
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode 99PCT_02092019_151638.png



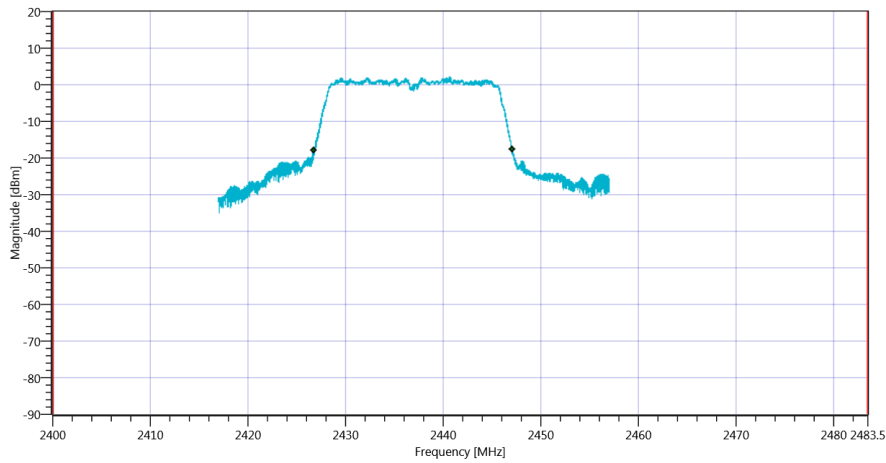
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode_02092019_151641.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	20376	kHz	Information
T1 20dB	2400.000000	---	2426.7240	MHz	PASS
T2 20dB	---	2483.500000	2447.1000	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode 20dB_02092019_151645.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode_02092019_151648.png

TEST FINISHED

General Verdict

02.09.2019 15:16:48 / RT: 34 s

PASS

49. FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:16:52
System Version	1.0.0.20
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 - WLAN 2G4 nHT20_mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

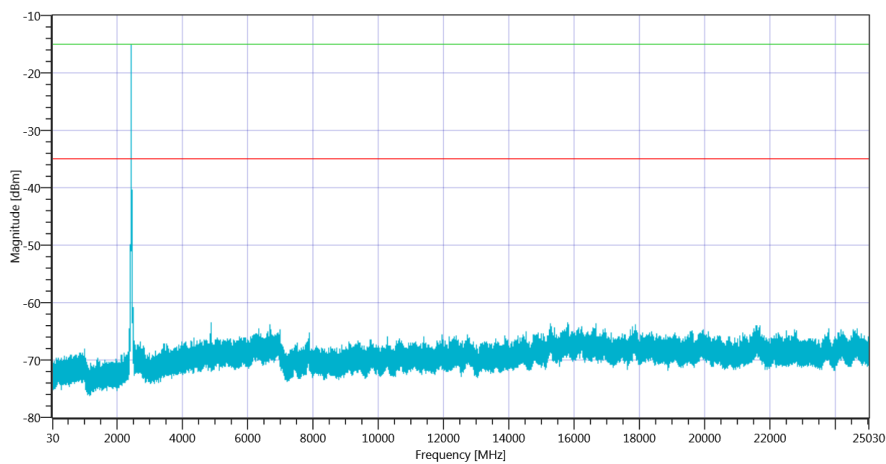
Test at TX 2437 MHz

READ SA SETTINGS:

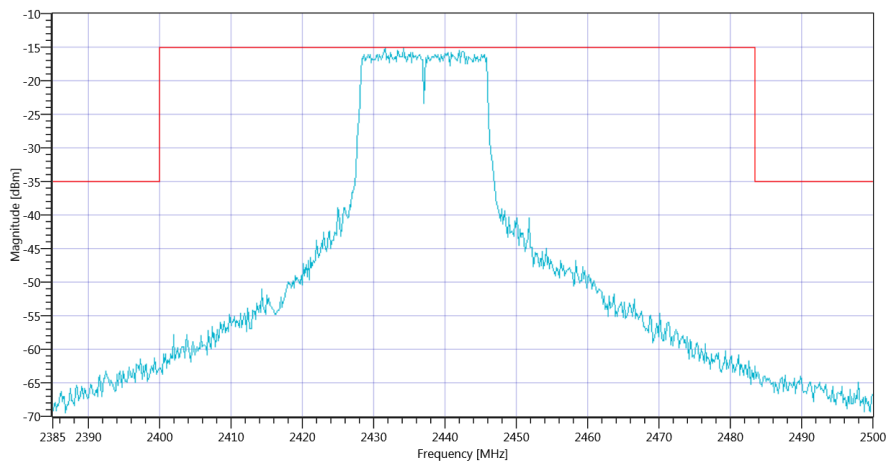
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	0.45 0 20
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2434.17 MHz	---	---	-15.03	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 nHT20-mode 2437_02092019_152137.png



Plot_FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 nHT20-mode 2437_02092019_152140.png

TEST FINISHED

General Verdict

02.09.2019 15:21:41 / RT: 288 s

PASS

50. FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:22:23
System Version	1.0.0.20
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
Class / TC Version / TC ID	TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01 Version: 0.0.1 TCID_FCC15247_3
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 nHT20-mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - PowerMeter
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 NRP-Z81,102585

Test at TX 2437 MHz

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_Powermeter_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	--	--	18.91	dBm	PASS

TEST FINISHED		
General Verdict	02.09.2019 15:22:27 / RT: 3 s	PASS

51. FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:23:25
System Version	1.0.0.20
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 - WLAN 2G4 nHT20_mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

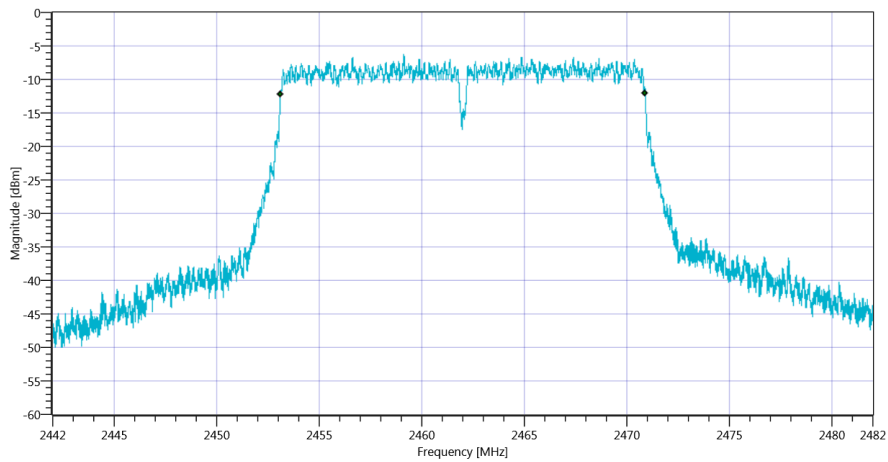
Test at TX 2462 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	9.12 9.94 15
Start [MHz] Stop [MHz]	2442.000 2482.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	17812	kHz	PASS



Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 nHT20-mode_02092019_152352.png

TEST FINISHED

General Verdict

02.09.2019 15:23:52 / RT: 27 s

PASS

52. FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:23:56
System Version	1.0.0.20
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 - WLAN 2G4 nHT20_mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40

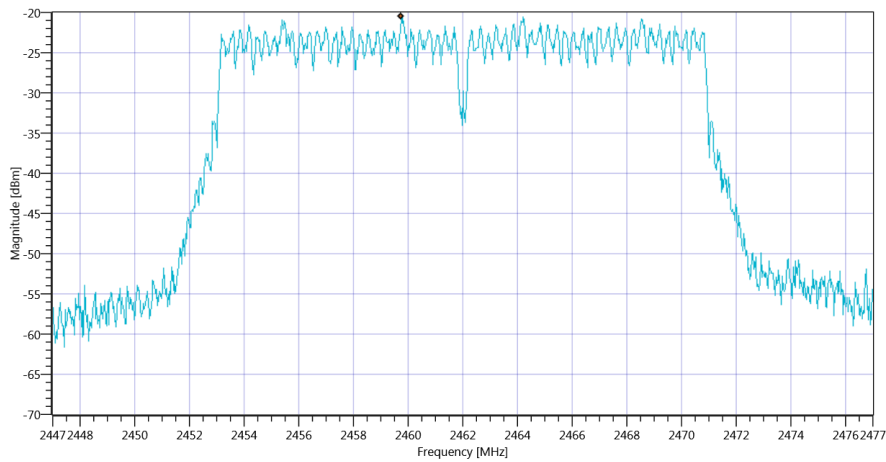
Test at TX 2462 MHz

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	9.04 9.94 15
Start [MHz] Stop [MHz]	2447.000 2477.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 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	-20.5	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 nHT20-mode_02092019_152430.png

TEST FINISHED

General Verdict	02.09.2019 15:24:31 / RT: 34 s	PASS
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53. FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode

Test References	
TC Start	02.09.2019 15:24:34
System Version	1.0.0.20
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 - WLAN 2G4 nHT20_mode
Add. Information	

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CBT-1153.9000.35,100185,CBT 6X02.P02 SA: Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.40