Measurement Results

1-8373/19-01-08_Annex_MR_A_1

Test logging

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Table of Content

IUT Summary

IUT DEFINITION	
Manufacturer	Panasonic Industrial Devices Europe GmbH
Type	PAN4620
Serial No.	0013438769C8
Setup No.	NI
SW Version	NI
HW Version	NI
Comment 1	NI
Comment 2	NI

IUT Common Settings	
Tlow [°C]	-40
Tmid [°C]	20
Thigh [°C]	85
Vlow [V]	1.8
Vmid [V]	3.6
Vhigh [V]	4.2
Imax [A]	1
Auto Control enabled Power Supply | Climatic Box	No | No
Antenna Gain [dBi]	0
Additional Path Loss [dB]	1

IUT Common Settings 2G4 Init Values from IUT file	
Hopping supported	No
Frequency low [MHz]	2405
Frequency mid [MHz]	2440
Frequency high [MHz]	2475
Burst length [ms]	10
Nominal Bandwidth [MHz]	1.5
User Interaction	Yes

1. FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4

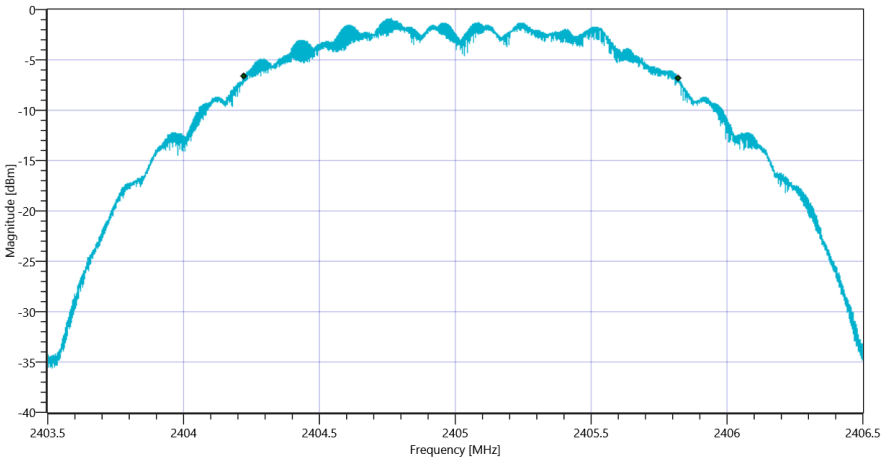
Test References	
TC Start	07.05.2019 11:02:33
System Version	1.0.0.15
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.1 RBW ≥ DTS Bandwidth
Class / TC Version / TC ID	TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 Version: 0.0.1 | TCID_FCC15247_3
My Description	FCC 15.247 Maximum Peak Output Power Conducted DTS4 - Generic 2G4
Add. Information	

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True | Freq [MHz] 2405
Frequency mid to test	True | Freq [MHz] 2440
Frequency high to test	True | Freq [MHz] 2475
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 | SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

Test at TX 2405 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	7.81
Ref. Lev. offs [dB]	10.8
Input Attenuation [dB]	15
Freq. Start [MHz]	2403.500
Freq. Stop [MHz]	2406.500
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: DTS Bandwidth					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	1599	kHz	Information

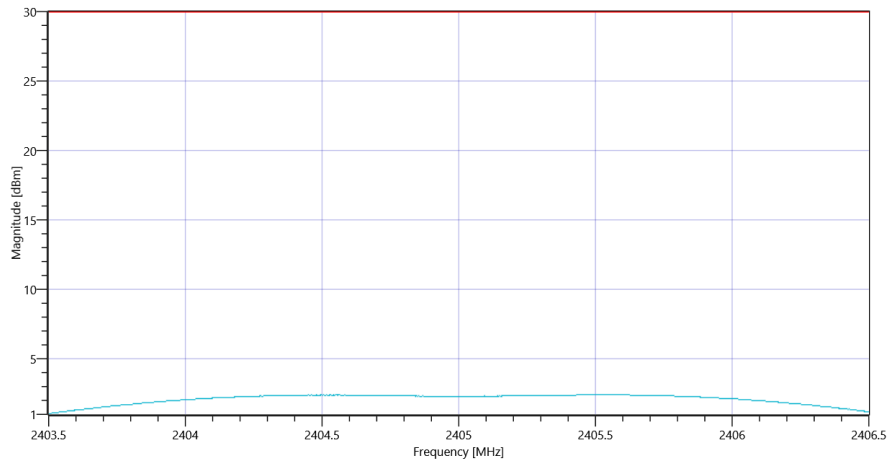


Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4 DTS BW _07052019_110258.png

READ SA SETTINGS:	
Ref. Level [dBm]	12.81
Ref. Lev. offs [dB]	10.8
Input Attenuation [dB]	20
Freq. Start [MHz]	2403.500
Freq. Stop [MHz]	2406.500
Resolution BW. [MHz]	3.000000
Video BW. [MHz]	10.000000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	1001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	2.41	dBm	PASS
Peak Power	---	1000	1.741807	mW	PASS

Frequency at Peak	---	---	2405.506	MHz	Information

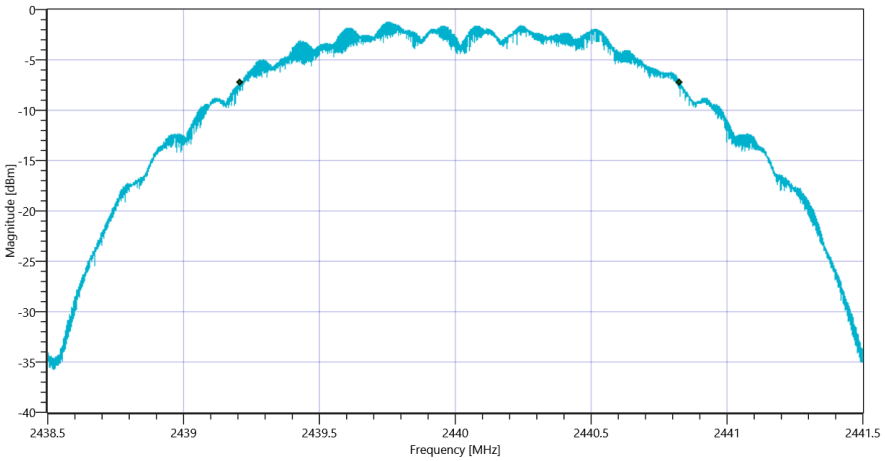


Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4_07052019_110312.png

Test at TX 2440 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	7.61
Ref. Lev. offs [dB]	10.91
Input Attenuation [dB]	15
Freq. Start [MHz]	2438.500
Freq. Stop [MHz]	2441.500
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: DTS Bandwidth					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	1619	kHz	Information

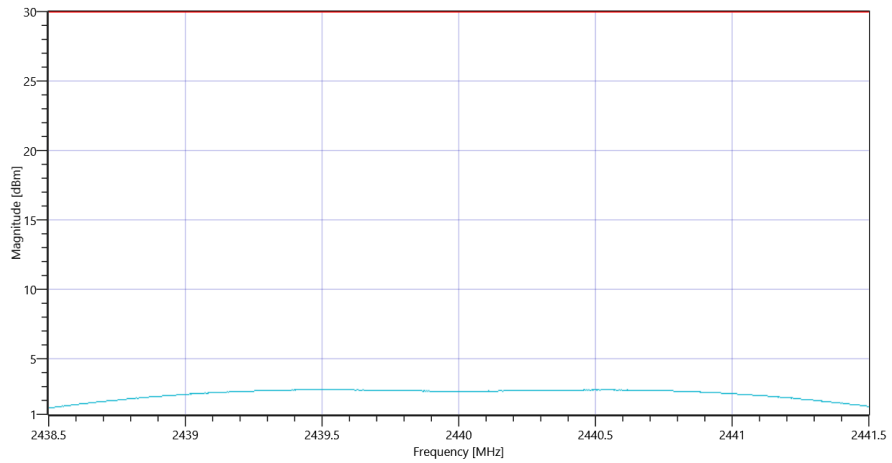


Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4 DTS BW _07052019_110403.png

READ SA SETTINGS:	
Ref. Level [dBm]	12.61
Ref. Lev. offs [dB]	10.91
Input Attenuation [dB]	20
Freq. Start [MHz]	2438.500
Freq. Stop [MHz]	2441.500
Resolution BW. [MHz]	3.000000
Video BW. [MHz]	10.000000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	1001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	2.77	dBm	PASS
Peak Power	---	1000	1.892344	mW	PASS

Frequency at Peak	---	---	2439.422	MHz	Information

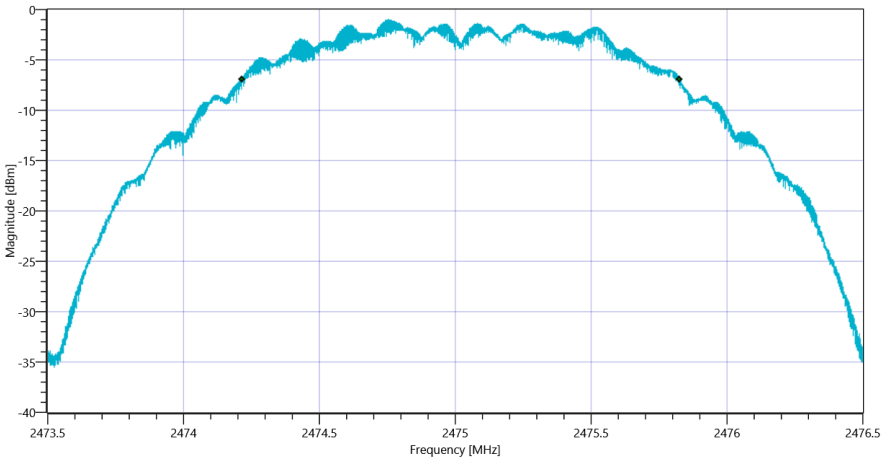


Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4_07052019_110418.png

Test at TX 2475 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	7.77
Ref. Lev. offs [dB]	10.96
Input Attenuation [dB]	15
Freq. Start [MHz]	2473.500
Freq. Stop [MHz]	2476.500
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: DTS Bandwidth					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	1612	kHz	Information

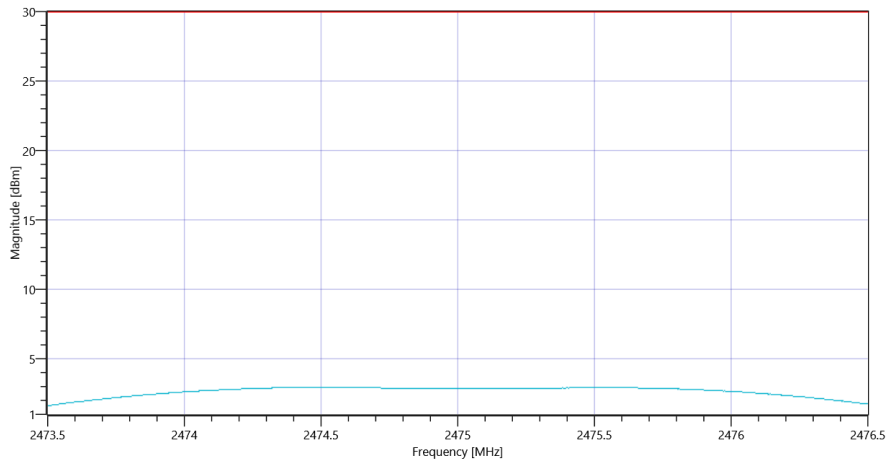


Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4 DTS BW _07052019_110458.png

READ SA SETTINGS:	
Ref. Level [dBm]	12.77
Ref. Lev. offs [dB]	10.96
Input Attenuation [dB]	20
Freq. Start [MHz]	2473.500
Freq. Stop [MHz]	2476.500
Resolution BW. [MHz]	3.000000
Video BW. [MHz]	10.000000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	1001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	2.95	dBm	PASS
Peak Power	---	1000	1.972423	mW	PASS

Frequency at Peak	---	---	2474.478	MHz	Information



Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4_07052019_110514.png

TEST FINISHED		
General Verdict	07.05.2019 11:05:14 / RT: 160 s	PASS

2. FCC Part 15.247 Bandwidth 6dB DTS ~ Generic 2G4

Test References	
TC Start	07.05.2019 11:05:18
System Version	1.0.0.15
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.2 DTS Bandwidth
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 - Generic 2G4
Add. Information	

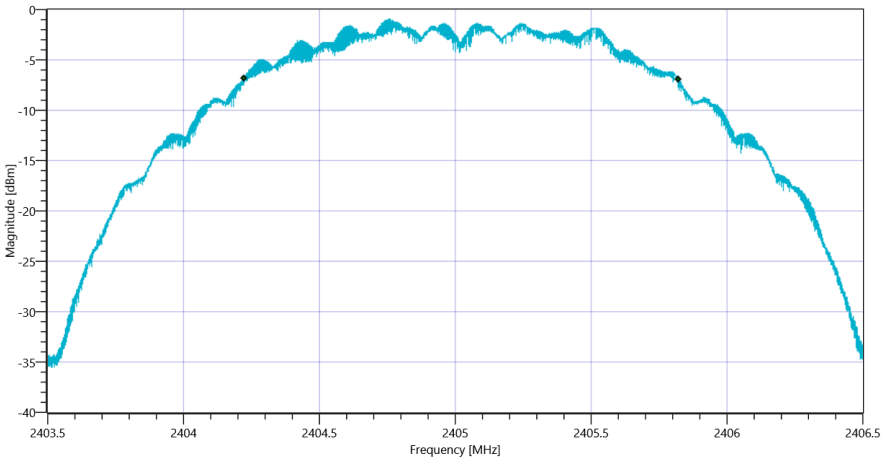
Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True | Freq [MHz] 2405
Frequency mid to test	True | Freq [MHz] 2440
Frequency high to test	True | Freq [MHz] 2475
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 | SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

Test at TX 2405 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	7.75
Ref. Lev. offs [dB]	10.8
Input Attenuation [dB]	15
Freq. Start [MHz]	2403.500
Freq. Stop [MHz]	2406.500
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	1601	kHz	PASS



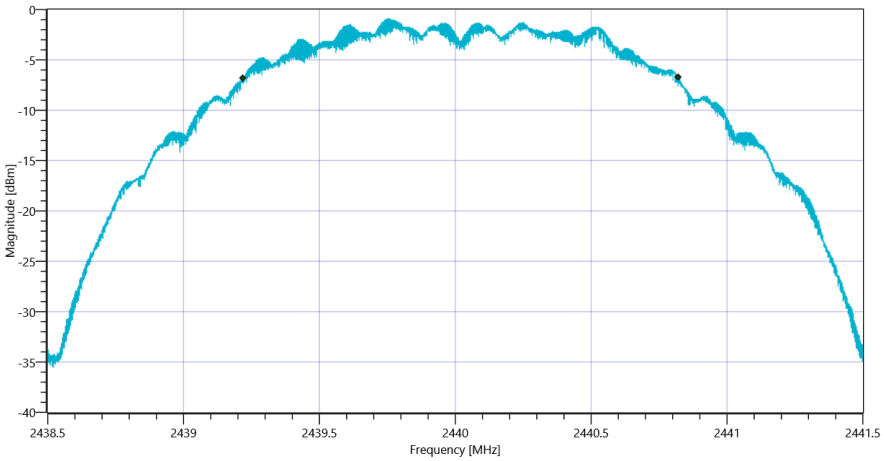
Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ Generic 2G4_07052019_110603.png

Test at TX 2440 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	7.92
Ref. Lev. offs [dB]	10.91
Input Attenuation [dB]	15
Freq. Start [MHz]	2438.500
Freq. Stop [MHz]	2441.500
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	1601	kHz	PASS



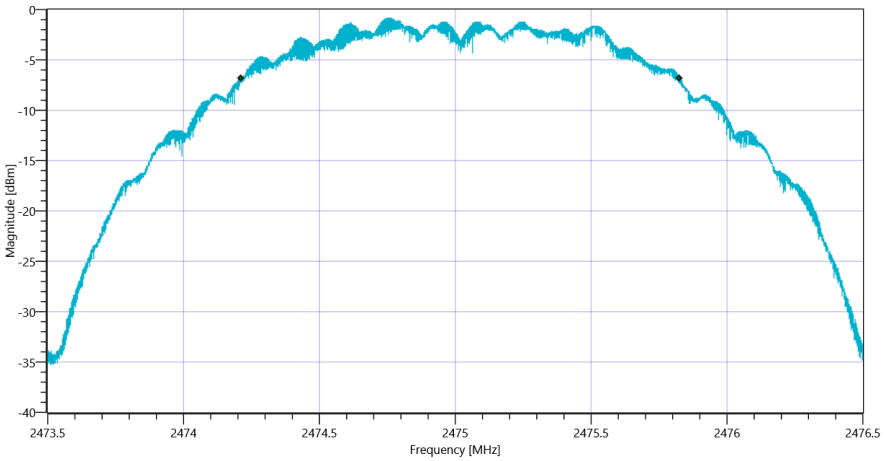
Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ Generic 2G4_07052019_110643.png

Test at TX 2475 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	7.97
Ref. Lev. offs [dB]	10.96
Input Attenuation [dB]	15
Freq. Start [MHz]	2473.500
Freq. Stop [MHz]	2476.500
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	1614	kHz	PASS



Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ Generic 2G4_07052019_110721.png

TEST FINISHED		
General Verdict	07.05.2019 11:07:22 / RT: 123 s	PASS

3. FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4

Test References	
TC Start	07.05.2019 11:07:25
System Version	1.0.0.15
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 - Generic 2G4
Add. Information	

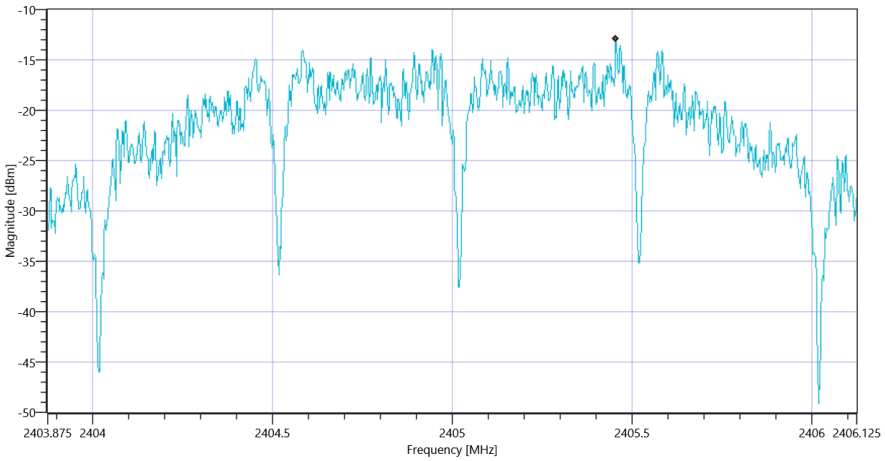
Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True | Freq [MHz] 2405
Frequency mid to test	True | Freq [MHz] 2440
Frequency high to test	True | Freq [MHz] 2475
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 | SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

Test at TX 2405 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	7.85
Ref. Lev. offs [dB]	10.8
Input Attenuation [dB]	15
Freq. Start [MHz]	2403.875
Freq. Stop [MHz]	2406.125
Resolution BW. [MHz]	0.003000
Video BW. [MHz]	0.010000
Detector	POS
Sweep Time [ms]	1000
Sweep Points/Section	1001
Sweep Count	20
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Peak_Power_Spectral_Density_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-12.92	dBm/3KHz	PASS



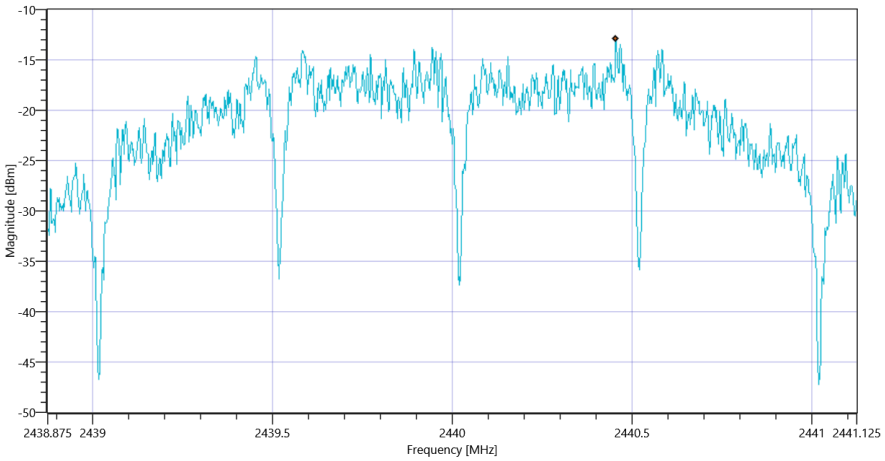
Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4_07052019_110816.png

Test at TX 2440 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	7.99
Ref. Lev. offs [dB]	10.91
Input Attenuation [dB]	15
Freq. Start [MHz]	2438.875
Freq. Stop [MHz]	2441.125
Resolution BW. [MHz]	0.003000
Video BW. [MHz]	0.010000
Detector	POS
Sweep Time [ms]	1000
Sweep Points/Section	1001
Sweep Count	20
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Peak_Power_Spectral_Density_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-12.93	dBm/3KHz	PASS



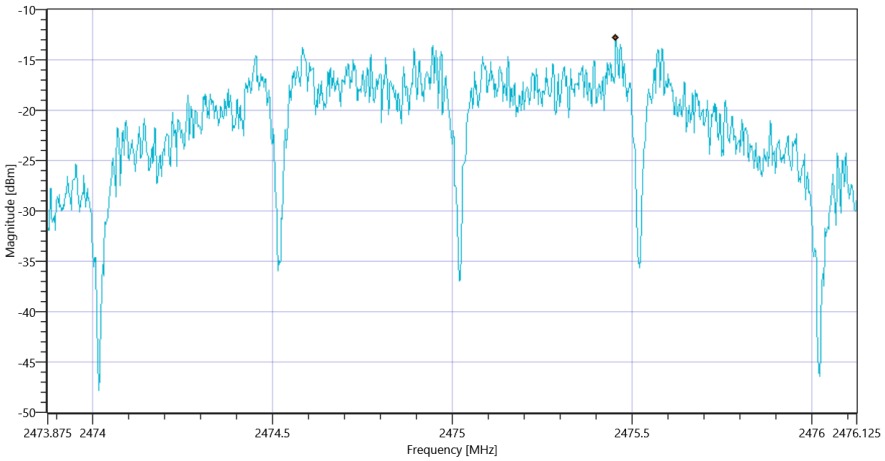
Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4_07052019_110903.png

Test at TX 2475 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	8.01
Ref. Lev. offs [dB]	10.96
Input Attenuation [dB]	15
Freq. Start [MHz]	2473.875
Freq. Stop [MHz]	2476.125
Resolution BW. [MHz]	0.003000
Video BW. [MHz]	0.010000
Detector	POS
Sweep Time [ms]	1000
Sweep Points/Section	1001
Sweep Count	20
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Peak_Power_Spectral_Density_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-12.81	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4_07052019_110955.png

TEST FINISHED		
General Verdict	07.05.2019 11:09:55 / RT: 150 s	PASS

4. FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4

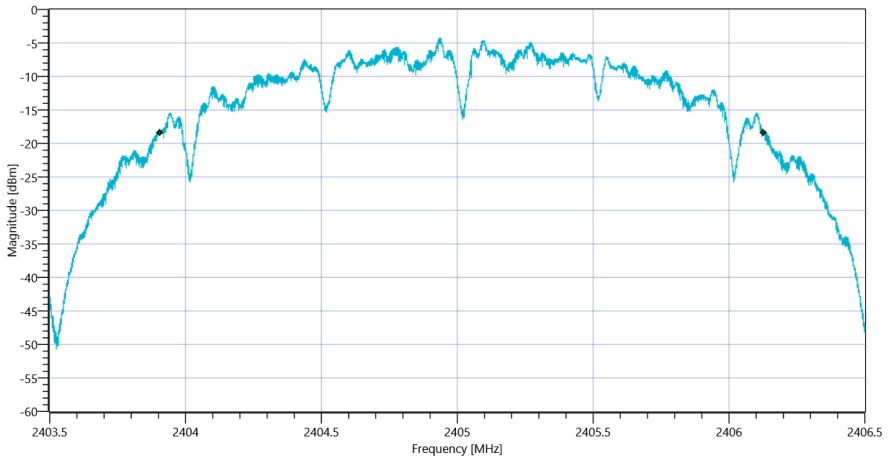
Test References	
TC Start	07.05.2019 11:09:59
System Version	1.0.0.15
Test Specification	FCC Part 15.247
Test Method	
Class / TC Version / TC ID	TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 Version: 0.0.2 | TCID_FCC15247_2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - Generic 2G4
Add. Information	

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True | Freq [MHz] 2405
Frequency mid to test	True | Freq [MHz] 2440
Frequency high to test	True | Freq [MHz] 2475
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 | SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

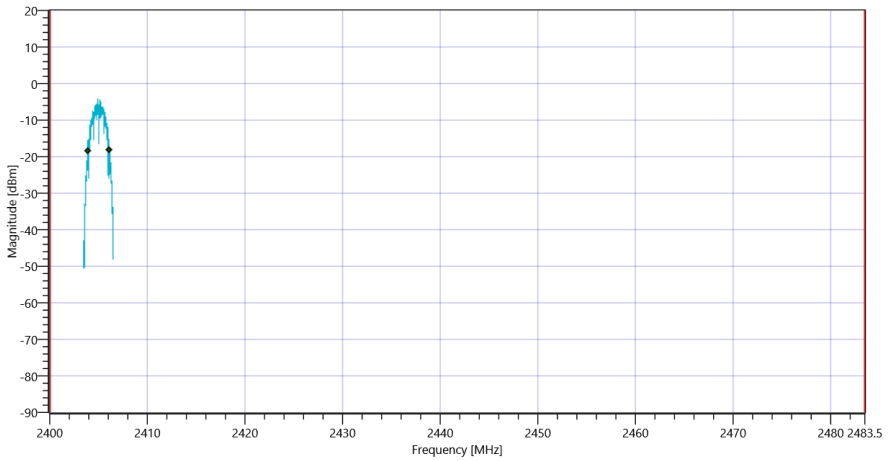
Test at TX 2405 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	7.92
Ref. Lev. offs [dB]	10.8
Input Attenuation [dB]	15
Freq. Start [MHz]	2403.500
Freq. Stop [MHz]	2406.500
Resolution BW. [MHz]	0.030000
Video BW. [MHz]	0.100000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	2220	kHz	Information
T1 99%	2400.000000	---	2403.9051	MHz	PASS
T2 99%	---	2483.500000	2406.1255	MHz	PASS

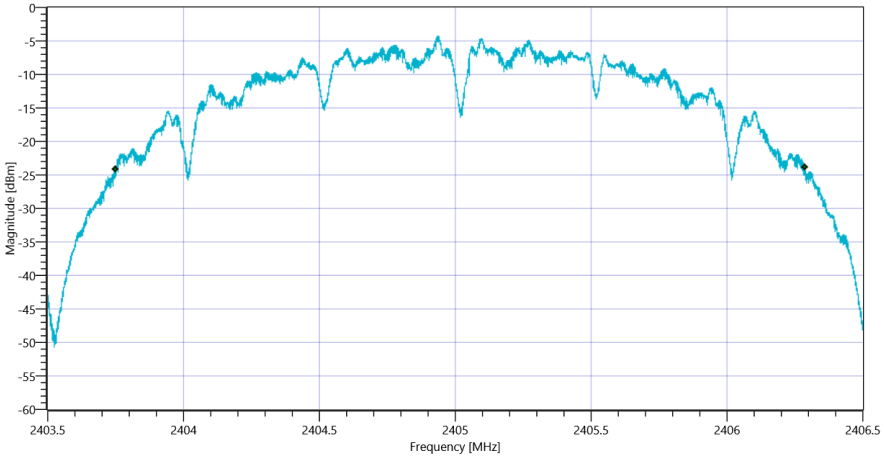


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 99PCT_07052019_111037.png

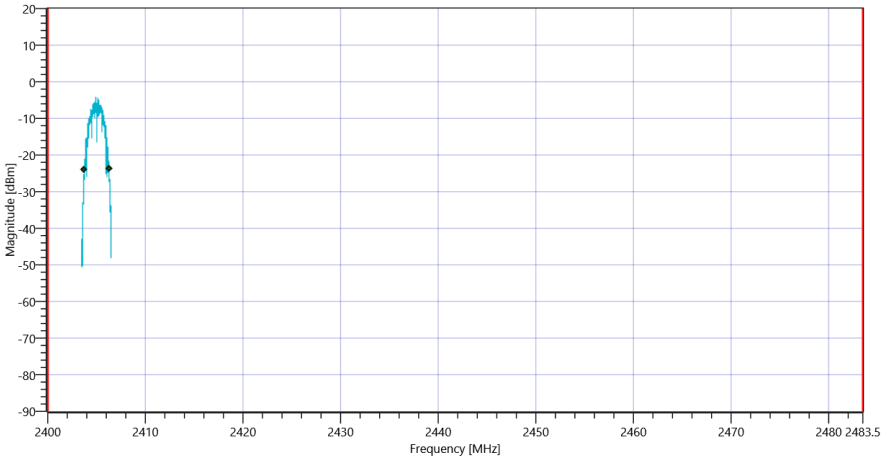


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4_07052019_111040.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	2536	kHz	Information
T1 20dB	2400.000000	---	2403.7502	MHz	PASS
T2 20dB	---	2483.500000	2406.2861	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 20dB_07052019_111044.png

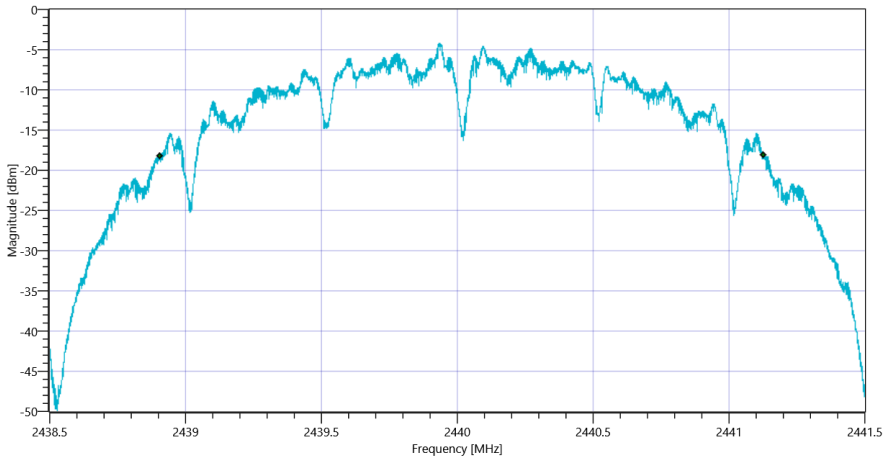


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4_07052019_111047.png

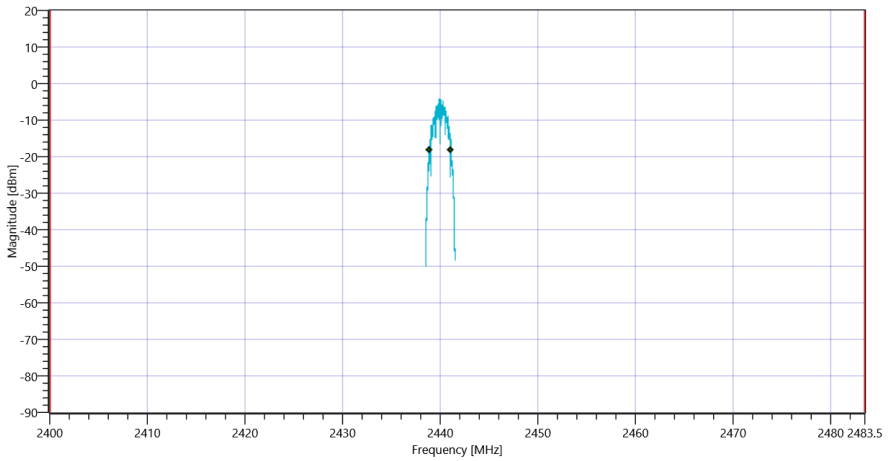
Test at TX 2440 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	8.08
Ref. Lev. offs [dB]	10.91
Input Attenuation [dB]	15
Freq. Start [MHz]	2438.500
Freq. Stop [MHz]	2441.500
Resolution BW. [MHz]	0.030000
Video BW. [MHz]	0.100000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	2221	kHz	Information
T1 99%	2400.000000	---	2438.9048	MHz	PASS
T2 99%	---	2483.500000	2441.1258	MHz	PASS

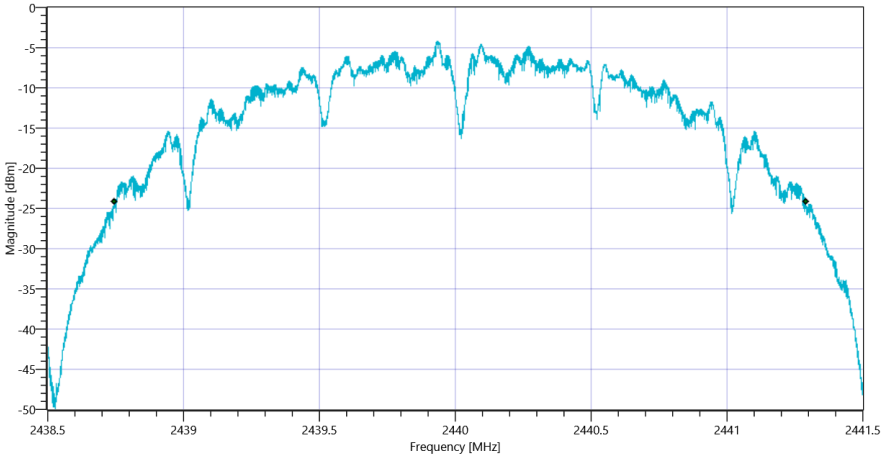


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 99PCT_07052019_111124.png

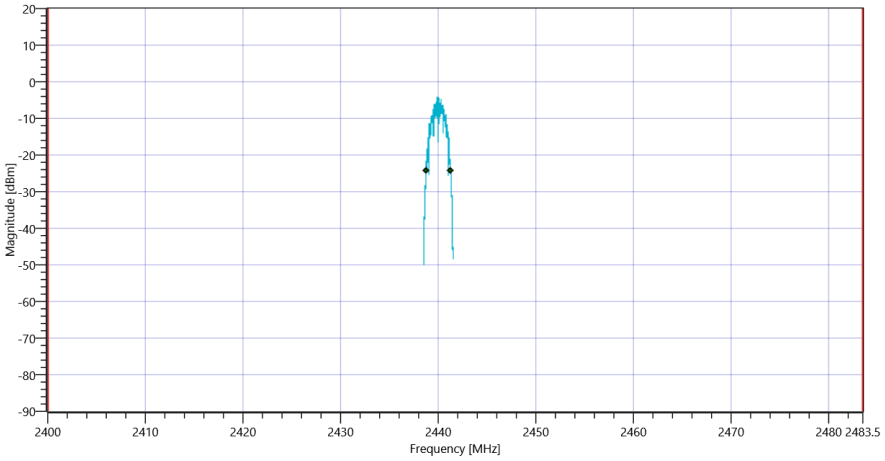


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4_07052019_111127.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	2545	kHz	Information
T1 20dB	2400.000000	---	2438.7448	MHz	PASS
T2 20dB	---	2483.500000	2441.2897	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 20dB_07052019_111131.png



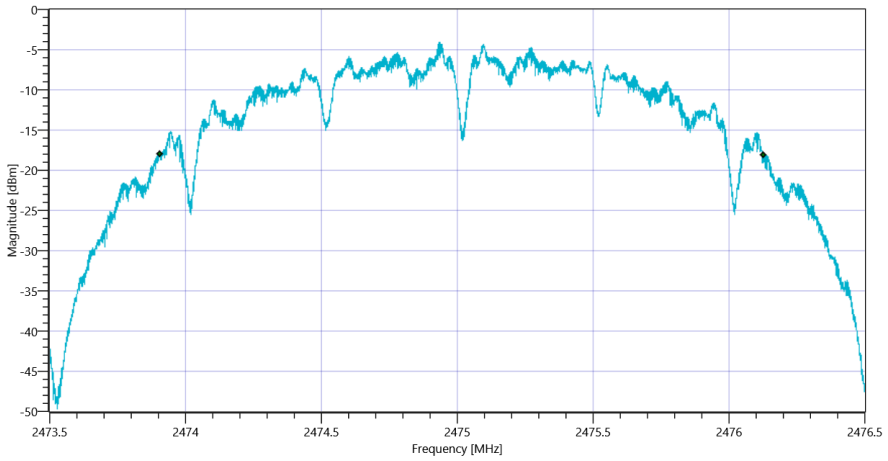
Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4_07052019_111134.png

Test at TX 2475 MHz

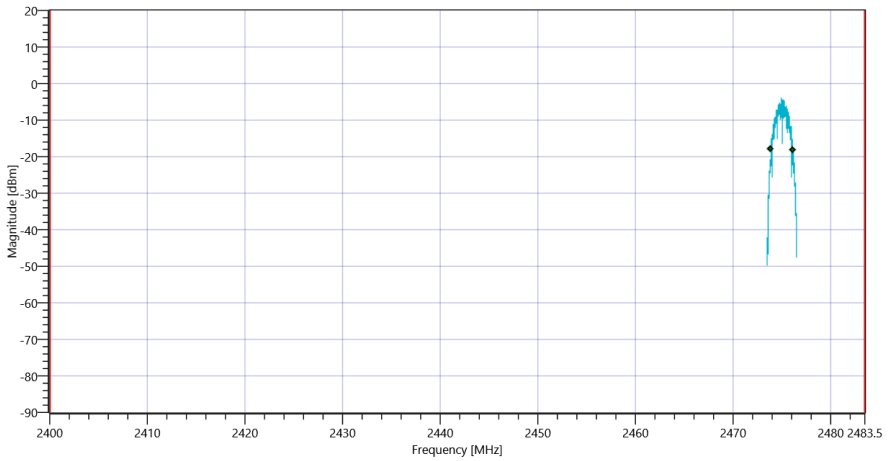
READ SA SETTINGS:	
Ref. Level [dBm]	8.10
Ref. Lev. offs [dB]	10.96
Input Attenuation [dB]	15
Freq. Start [MHz]	2473.500
Freq. Stop [MHz]	2476.500
Resolution BW. [MHz]	0.030000
Video BW. [MHz]	0.100000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	2222	kHz	Information
T1 99%	2400.000000	---	2473.9045	MHz	PASS
T2 99%	---	2483.500000	2476.1264	MHz	PASS

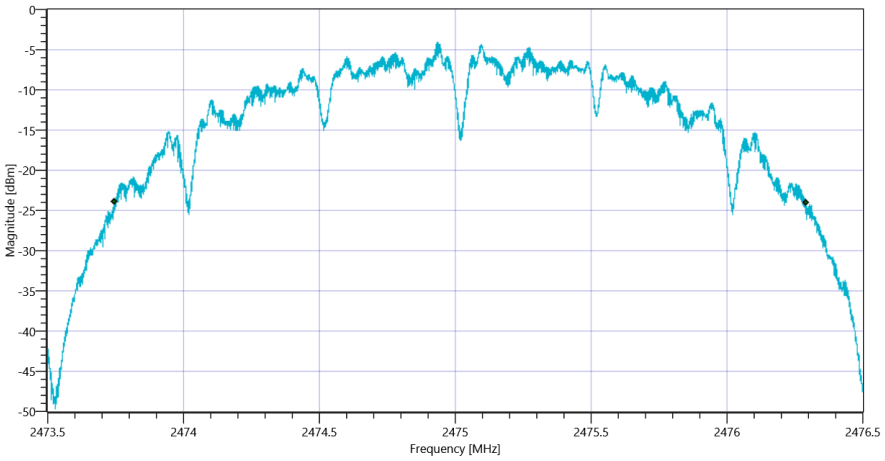


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 99PCT_07052019_111210.png

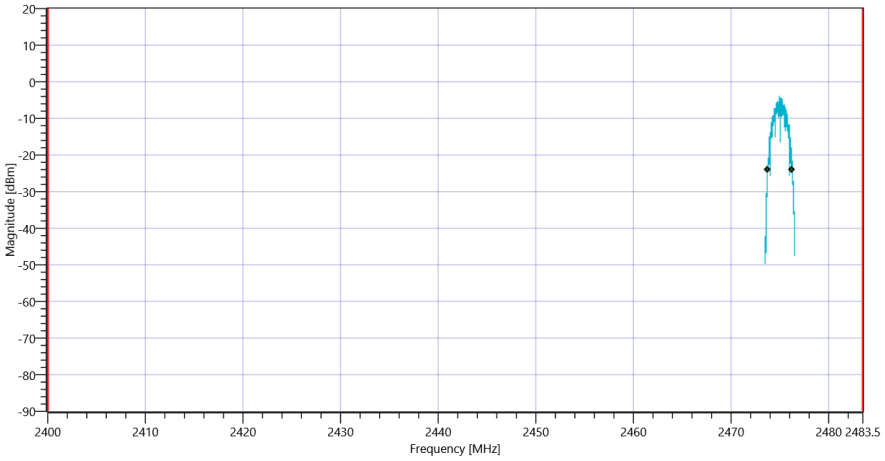


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4_07052019_111213.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	2545	kHz	Information
T1 20dB	2400.000000	---	2473.7454	MHz	PASS
T2 20dB	---	2483.500000	2476.2903	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 20dB_07052019_111217.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4_07052019_111220.png

TEST FINISHED		
General Verdict	07.05.2019 11:12:20 / RT: 140 s	PASS

5. FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4

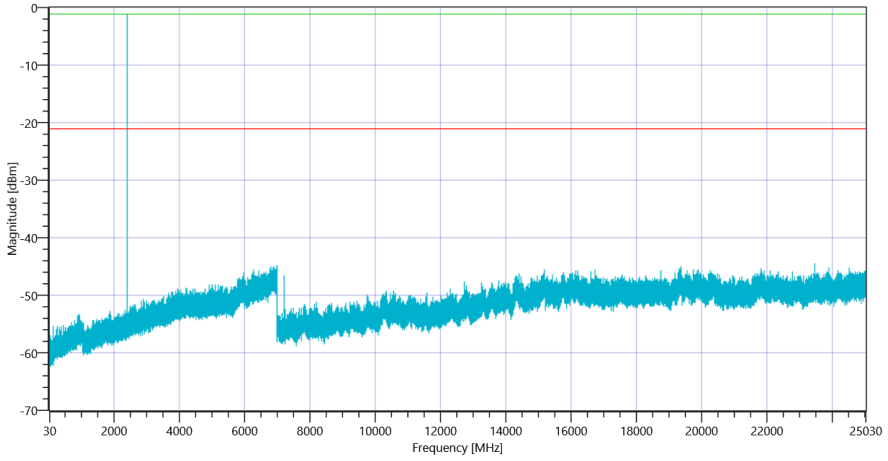
Test References	
TC Start	07.05.2019 11:12:24
System Version	1.0.0.15
Test Specification	FCC Part 15.247
Test Method	IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable.
Class / TC Version / TC ID	TC_VM_FCC15247_TX_Emissions_Conducted_V01 Version: 0.0.1 | TCID_FCC15247_8
My Description	FCC 15.247 TX Emissions Conducted DTS - Generic 2G4
Add. Information	

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	True | Freq [MHz] 2405
Frequency mid to test	True | Freq [MHz] 2440
Frequency high to test	True | Freq [MHz] 2475
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 | SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

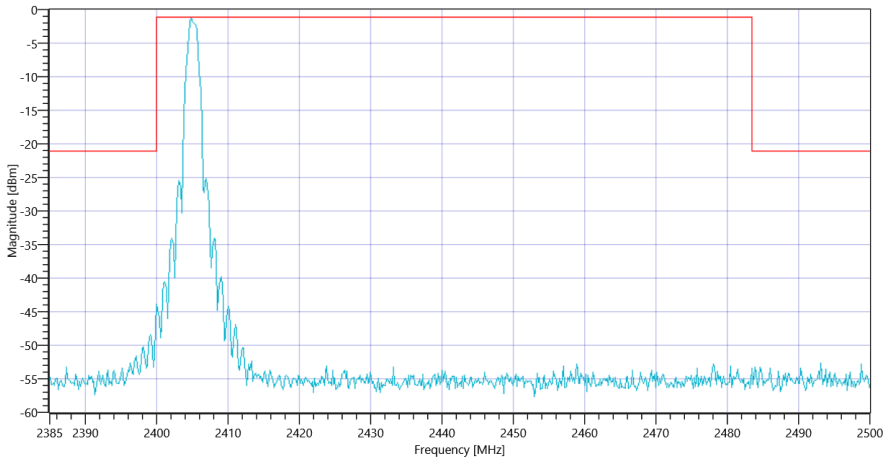
Test at TX 2405 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	8.42
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	500
Sweep Points/Section	3001
Sweep Count	8
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2404.83 MHz	---	---	-1.15	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4 2405_07052019_111718.png

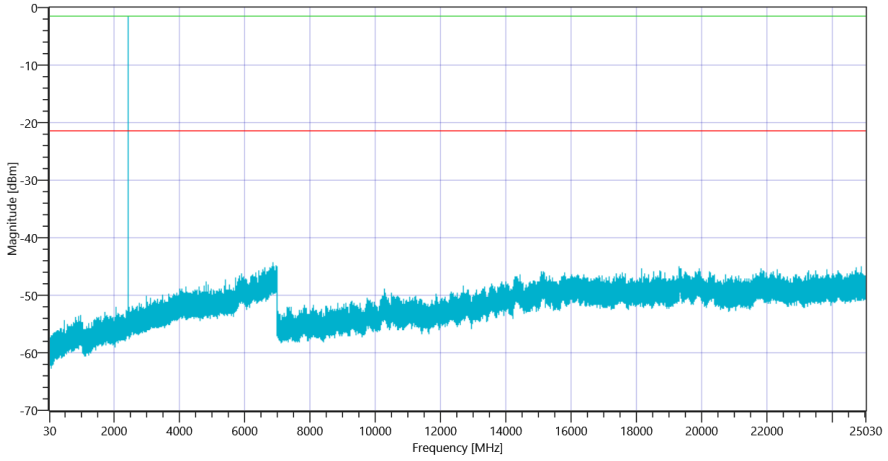


Plot_FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4 2405_07052019_111720.png

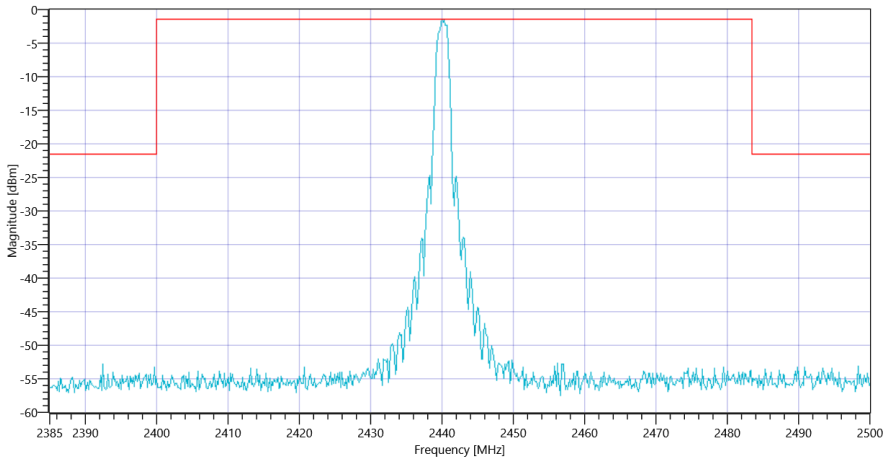
Test at TX 2440 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	8.61
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	500
Sweep Points/Section	3001
Sweep Count	8
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2440.00 MHz	---	---	-1.50	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4 2440_07052019_112226.png



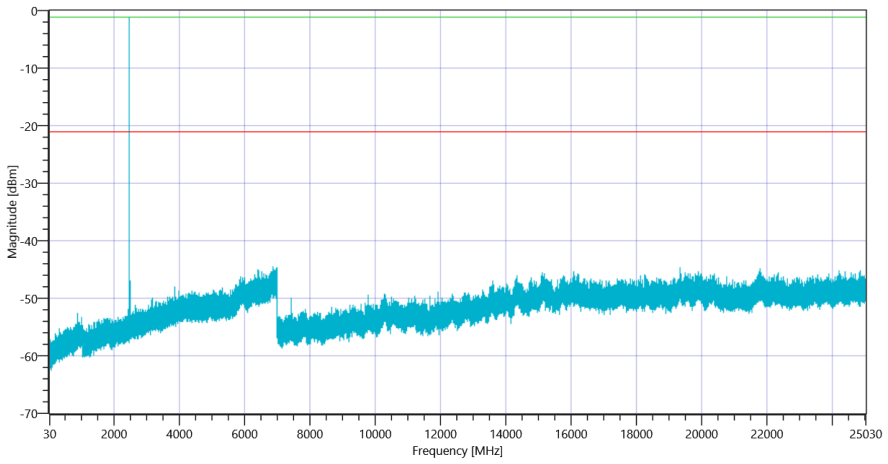
Plot_FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4 2440_07052019_112228.png

Test at TX 2475 MHz

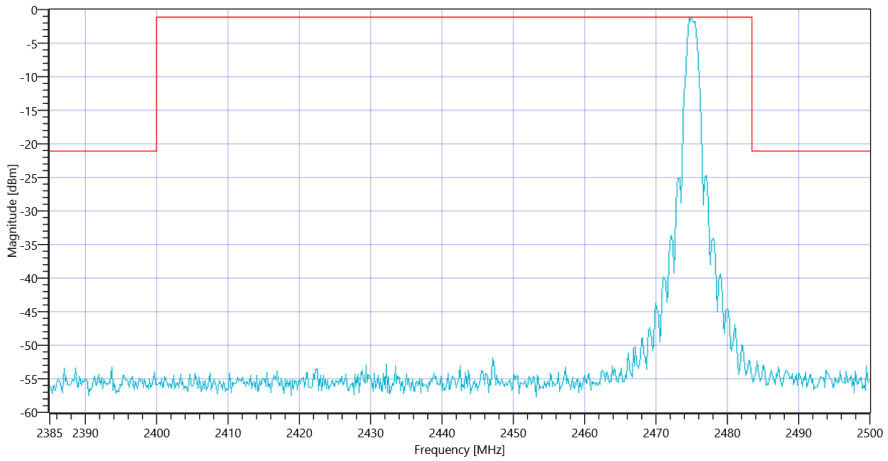
READ SA SETTINGS:	
Ref. Level [dBm]	8.52
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	500
Sweep Points/Section	3001
Sweep Count	8
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2475.00 MHz	---	---	-1.09	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4 2475_07052019_112728.png



Plot_FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4 2475_07052019_112730.png

TEST FINISHED		
General Verdict	07.05.2019 11:27:31 / RT: 907 s	PASS

6. FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4

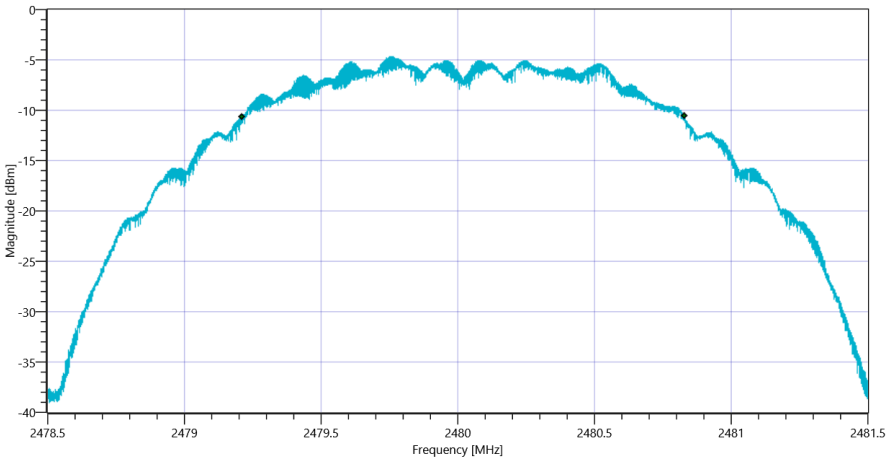
Test References	
TC Start	07.05.2019 11:42:32
System Version	1.0.0.15
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.1 RBW ≥ DTS Bandwidth
Class / TC Version / TC ID	TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 Version: 0.0.1 | TCID_FCC15247_3
My Description	FCC 15.247 Maximum Peak Output Power Conducted DTS4 - Generic 2G4
Add. Information	Power setting 13

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False | Freq [MHz] 2405
Frequency mid to test	False | Freq [MHz] 2440
Frequency high to test	True | Freq [MHz] 2480
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 | SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

Test at TX 2480 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	4.12
Ref. Lev. offs [dB]	10.96
Input Attenuation [dB]	10
Freq. Start [MHz]	2478.500
Freq. Stop [MHz]	2481.500
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: DTS Bandwidth					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	1616	kHz	Information

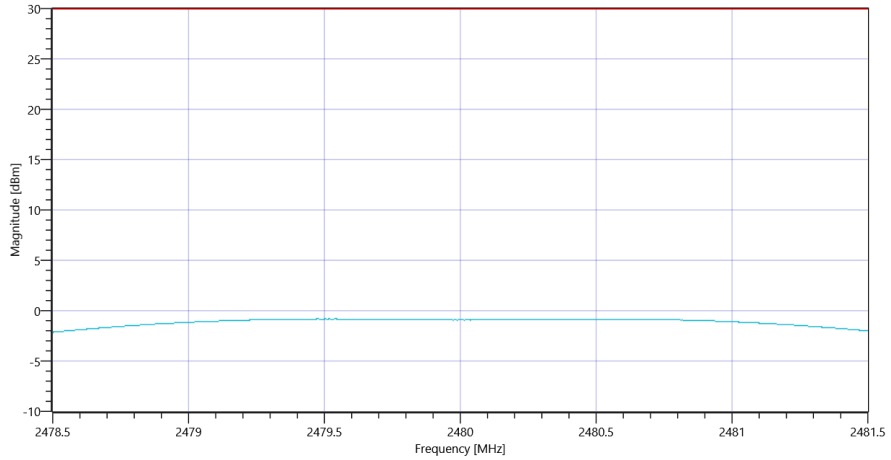


Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4 DTS BW _07052019_114256.png

READ SA SETTINGS:	
Ref. Level [dBm]	9.12
Ref. Lev. offs [dB]	10.96
Input Attenuation [dB]	15
Freq. Start [MHz]	2478.500
Freq. Stop [MHz]	2481.500
Resolution BW. [MHz]	3.000000
Video BW. [MHz]	10.000000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	1001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	-0.83	dBm	PASS
Peak Power	---	1000	0.826038	mW	PASS

Frequency at Peak	---	---	2479.52	MHz	Information



Plot_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4_07052019_114310.png

TEST FINISHED		
General Verdict	07.05.2019 11:43:10 / RT: 38 s	PASS

7. FCC Part 15.247 Bandwidth 6dB DTS ~ Generic 2G4

Test References	
TC Start	07.05.2019 11:43:14
System Version	1.0.0.15
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.2 DTS Bandwidth
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 - Generic 2G4
Add. Information	Power setting 13

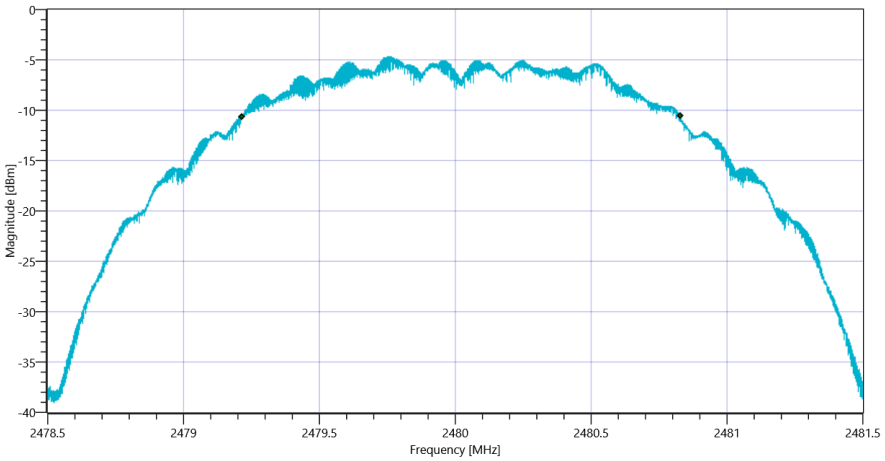
Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False | Freq [MHz] 2405
Frequency mid to test	False | Freq [MHz] 2440
Frequency high to test	True | Freq [MHz] 2480
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 | SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

Test at TX 2480 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	4.13
Ref. Lev. offs [dB]	10.96
Input Attenuation [dB]	10
Freq. Start [MHz]	2478.500
Freq. Stop [MHz]	2481.500
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_6dB_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	1614	kHz	PASS



Plot_FCC Part 15.247 Bandwidth 6dB DTS ~ Generic 2G4_07052019_114338.png

TEST FINISHED		
General Verdict	07.05.2019 11:43:38 / RT: 23 s	PASS

8. FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4

Test References	
TC Start	07.05.2019 11:43:41
System Version	1.0.0.15
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 - Generic 2G4
Add. Information	Power setting 13

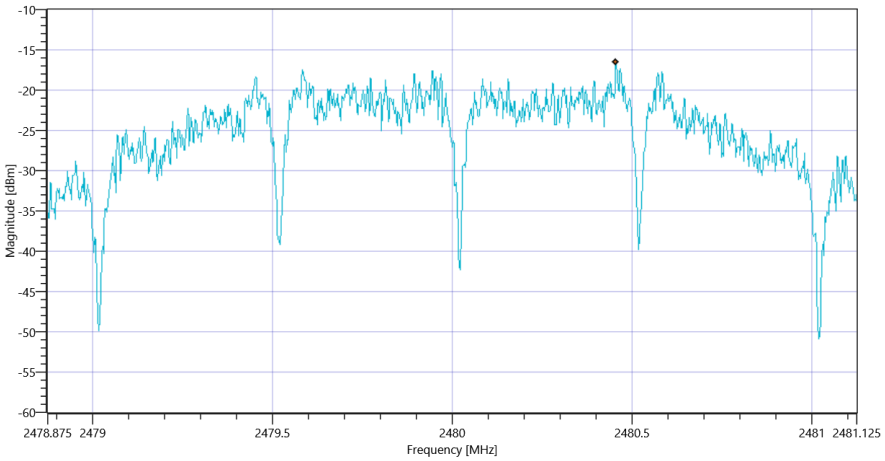
Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False | Freq [MHz] 2405
Frequency mid to test	False | Freq [MHz] 2440
Frequency high to test	True | Freq [MHz] 2480
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 | SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

Test at TX 2480 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	4.14
Ref. Lev. offs [dB]	10.96
Input Attenuation [dB]	10
Freq. Start [MHz]	2478.875
Freq. Stop [MHz]	2481.125
Resolution BW. [MHz]	0.003000
Video BW. [MHz]	0.010000
Detector	POS
Sweep Time [ms]	1000
Sweep Points/Section	1001
Sweep Count	20
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Peak_Power_Spectral_Density_DTS_V01

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-16.53	dBm/3KHz	PASS



Plot_FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4_07052019_114415.png

TEST FINISHED		
General Verdict	07.05.2019 11:44:15 / RT: 33 s	PASS

9. FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4

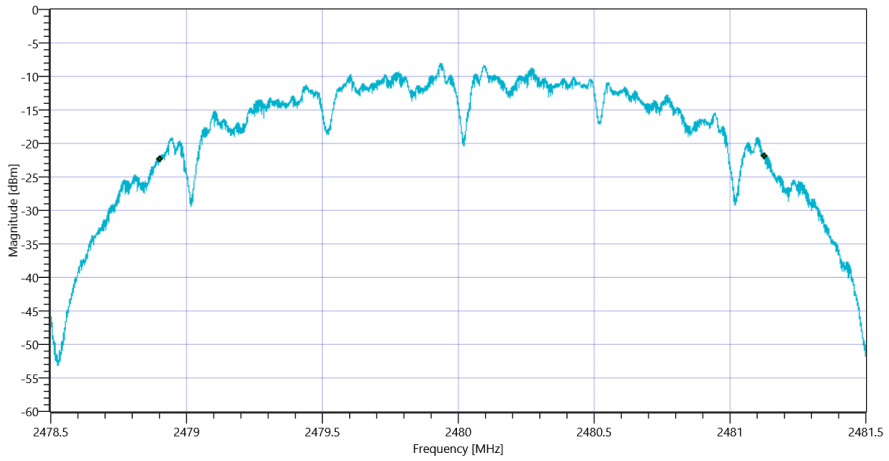
Test References	
TC Start	07.05.2019 11:44:19
System Version	1.0.0.15
Test Specification	FCC Part 15.247
Test Method	
Class / TC Version / TC ID	TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 Version: 0.0.2 | TCID_FCC15247_2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - Generic 2G4
Add. Information	Power setting 13

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False | Freq [MHz] 2405
Frequency mid to test	False | Freq [MHz] 2440
Frequency high to test	True | Freq [MHz] 2480
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 | SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

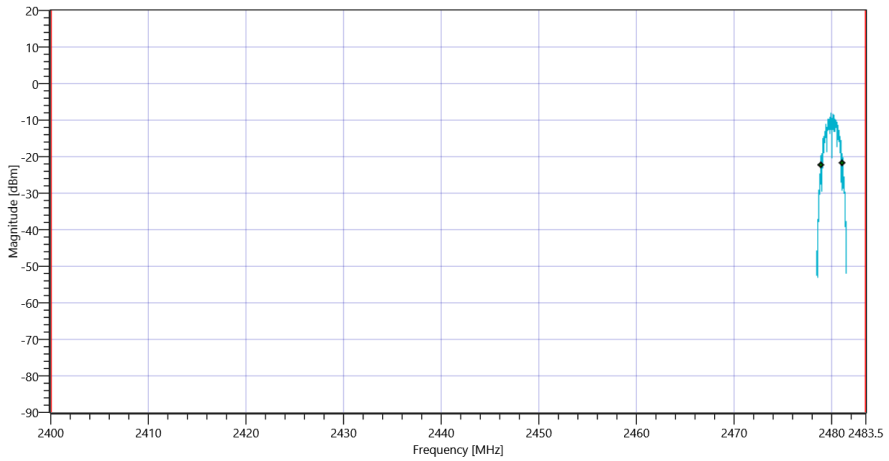
Test at TX 2480 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	4.15
Ref. Lev. offs [dB]	10.96
Input Attenuation [dB]	10
Freq. Start [MHz]	2478.500
Freq. Stop [MHz]	2481.500
Resolution BW. [MHz]	0.030000
Video BW. [MHz]	0.100000
Detector	POS
Sweep Time [ms]	50
Sweep Points/Section	10001
Sweep Count	200
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	2222	kHz	Information
T1 99%	2400.000000	---	2478.9042	MHz	PASS
T2 99%	---	2483.500000	2481.1267	MHz	PASS

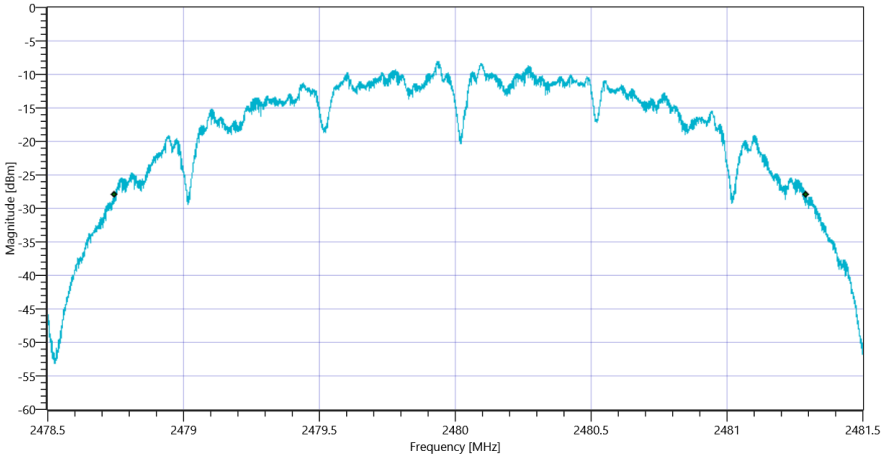


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 99PCT_07052019_114442.png

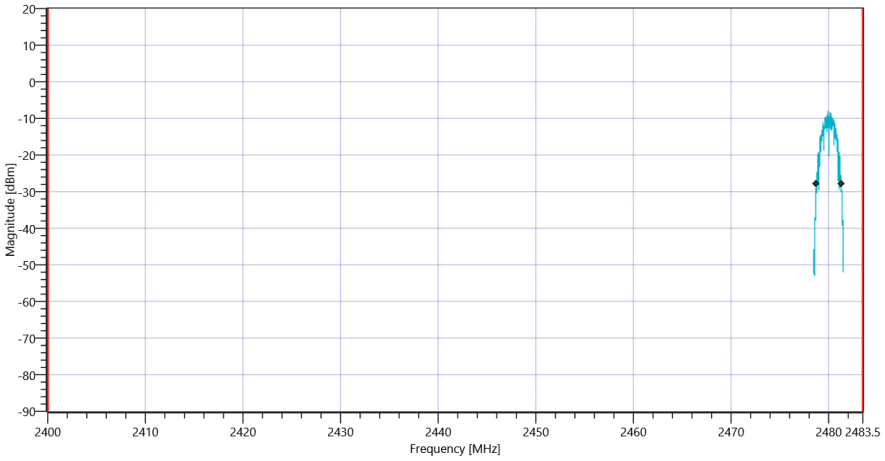


Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4_07052019_114445.png

RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01					
Test Description	**Lower Limit**	**Upper Limit**	**Measured**	**Unit**	**Verdict**
Bandwidth 20dB	---	---	2546	kHz	Information
T1 20dB	2400.000000	---	2478.7445	MHz	PASS
T2 20dB	---	2483.500000	2481.2903	MHz	PASS



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 20dB_07052019_114449.png



Plot_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4_07052019_114452.png

TEST FINISHED		
General Verdict	07.05.2019 11:44:52 / RT: 33 s	PASS

10. FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4

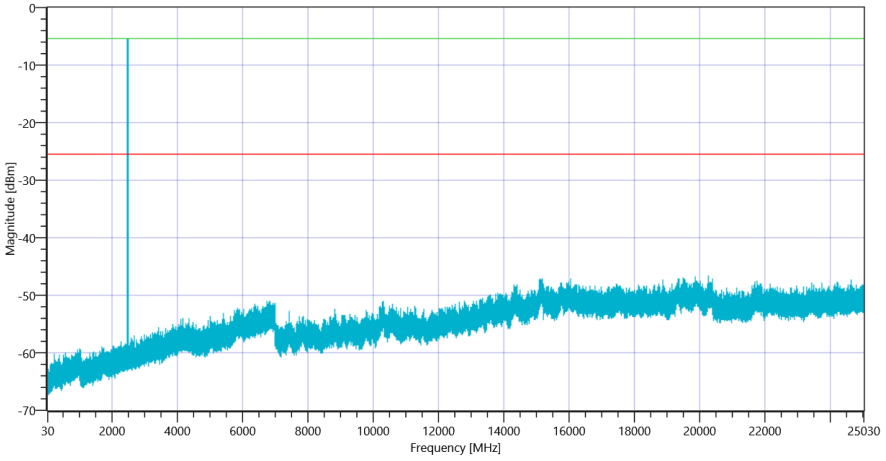
Test References	
TC Start	07.05.2019 11:44:56
System Version	1.0.0.15
Test Specification	FCC Part 15.247
Test Method	IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable.
Class / TC Version / TC ID	TC_VM_FCC15247_TX_Emissions_Conducted_V01 Version: 0.0.1 | TCID_FCC15247_8
My Description	FCC 15.247 TX Emissions Conducted DTS - Generic 2G4
Add. Information	Power setting 13

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False | Freq [MHz] 2405
Frequency mid to test	False | Freq [MHz] 2440
Frequency high to test	True | Freq [MHz] 2480
Pattern	PRBS9
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.70 | SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40

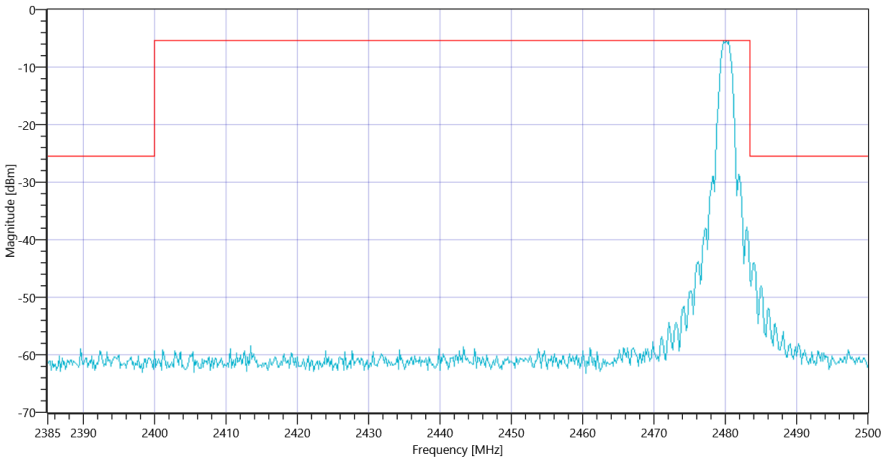
Test at TX 2480 MHz

READ SA SETTINGS:	
Ref. Level [dBm]	4.71
Resolution BW. [MHz]	0.100000
Video BW. [MHz]	0.300000
Detector	POS
Sweep Time [ms]	500
Sweep Points/Section	3001
Sweep Count	8
Sweep Mode	MAXH
Used Sweep Type	SWE

RESULT: TC_VM_FCC15247_TX_Emissions_Conducted_V01					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2480.17 MHz	---	---	-5.44	dBm	Information
No peaks detected	---	---			PASS



Plot_FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4 2480_07052019_114936.png



Plot_FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4 2480_07052019_114938.png

TEST FINISHED		
General Verdict	07.05.2019 11:49:39 / RT: 283 s	PASS

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