

## Measurement Results

1-0437/20-01-05\_log2\_conducted

[Test logging](#)

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## EUT Summary

IUT DEFINITION & Common settings	
Manufacturer	KUNBUS GmbH
Type	KE2640MODA1
Serial No.   Setup No.	Device 2   Antenna gain 3
SW Version   HW Version	1.0.1   PR100335R01
Comment 1   2	
Tlow   Tmid   Thigh [°C]	-40   20   85
Vlow   Vmid   Vhigh [V] @Imax [A]	5   5   5 @1
Auto Control enabled Power Supply   Climatic Box	No   No
Additional Path Loss [dB]	0.7
IUT Common Settings 2G4	
Hopping supported	No
Burst length [ms]	10
Nominal Bandwidth [MHz]	2.5
User Interaction	No

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

Test References	
TC Start	09.12.2020 15:44:08
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
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_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 Version: 0.0.1
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] 2401
Frequency mid to test	False   Freq [MHz] 2440
Frequency high to test	False   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

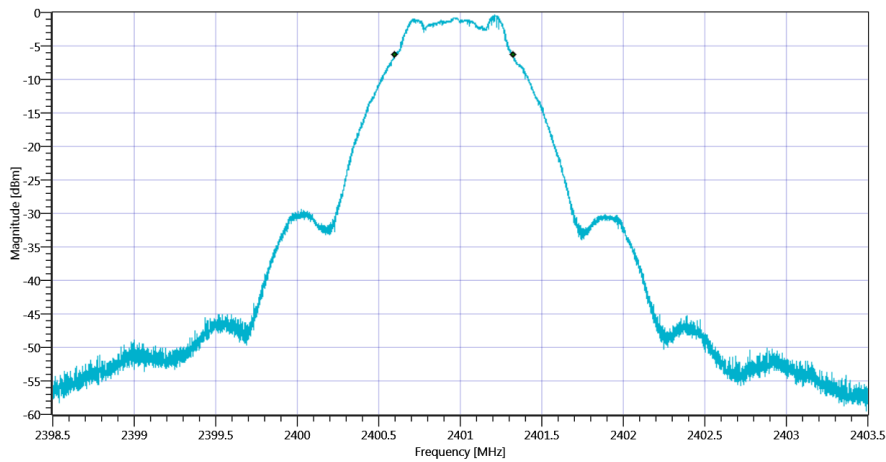
## Test at TX 2401 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	5.58   16.26   5
Start [MHz]   Stop [MHz]	2398.500   2403.500
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	50   200   10001   SWE

### DTS Bandwidth

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	726	kHz	INFO



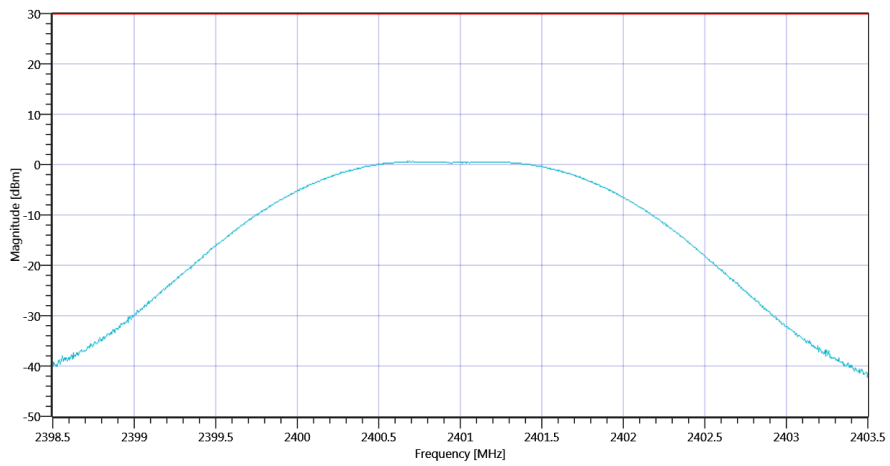
Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4 DTS BW\_09122020\_154437.png

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	10.58   16.26   10
Start [MHz]   Stop [MHz]	2398.500   2403.500
RBW [MHz]   VBW [MHz]	1.000000   5.000000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	50   200   1001   SWE

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	0.59	dBm	PASS
Peak Power	---	1000	1.145513	mW	PASS
Frequency at Peak	---	---	2400.675	MHz	INFO



Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS -- Generic 2G4\_09122020\_154453.png

TEST FINISHED

General Verdict

09.12.2020 15:44:53 / RT: 44 s

PASS

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

Test References	
TC Start	09.12.2020 15:57:12
Ambit Temp [°C]   Humidity [rel%]	24.2   23
System Version	1.0.1.2
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_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 Version: 0.0.1
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	False   Freq [MHz] 2401
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	False   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

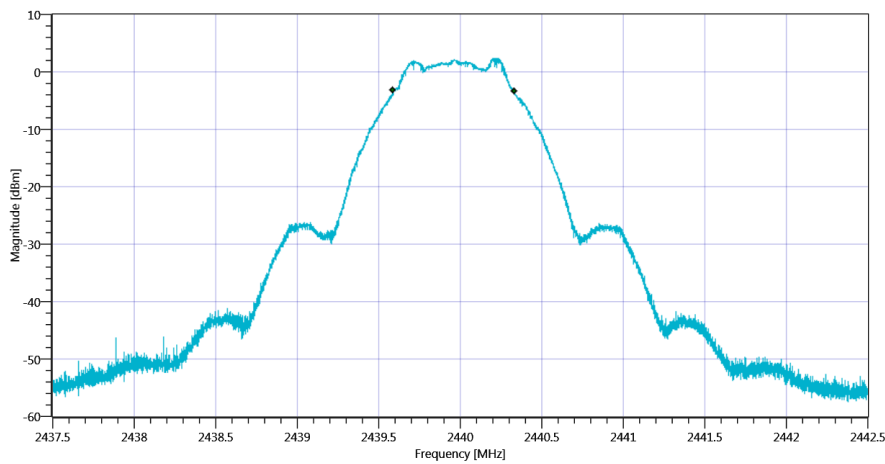
## Test at TX 2440 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	8.33   16.18   10
Start [MHz]   Stop [MHz]	2437.500   2442.500
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	50   200   10001   SWE

### DTS Bandwidth

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	744	kHz	INFO



Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4 DTS BW\_09122020\_155740.png

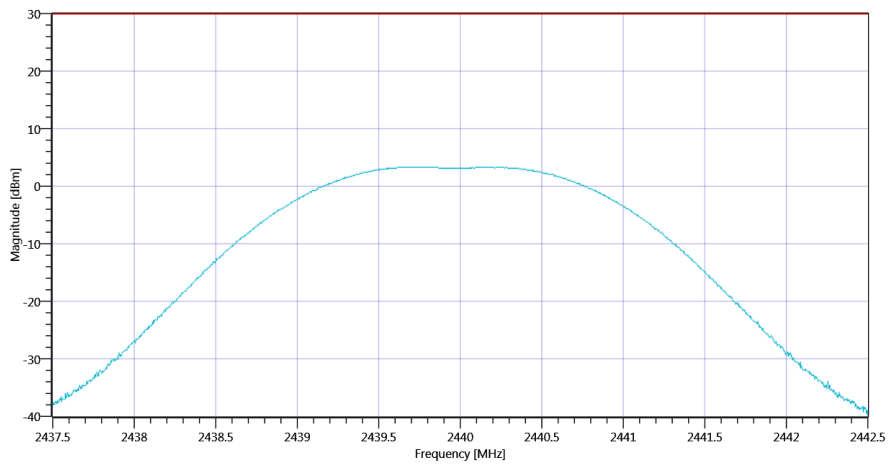
### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	13.33   16.18   15
Start [MHz]   Stop [MHz]	2437.500   2442.500
RBW [MHz]   VBW [MHz]	1.000000   5.000000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	50   200   1001   SWE

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	3.34	dBm	PASS
Peak Power	---	1000	2.157744	mW	PASS
Frequency at Peak	---	---	2439.71	MHz	INFO





Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS -- Generic 2G4\_09122020\_155756.png

TEST FINISHED

General Verdict

09.12.2020 15:57:57 / RT: 44 s

PASS

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

Test References	
TC Start	09.12.2020 16:05:56
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
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_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 Version: 0.0.1
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	False   Freq [MHz] 2401
Frequency mid to test	False   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

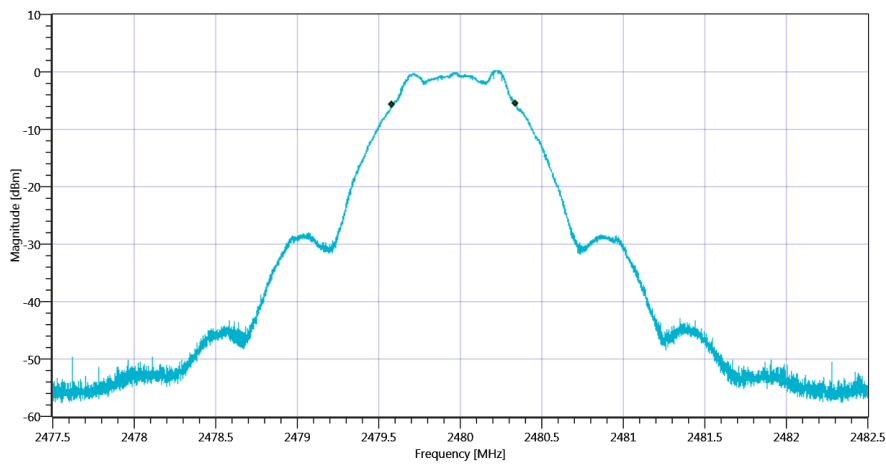
## Test at TX 2480 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	6.32   16.11   10
Start [MHz]   Stop [MHz]	2477.500   2482.500
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	50   200   10001   SWE

### DTS Bandwidth

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	755	kHz	INFO



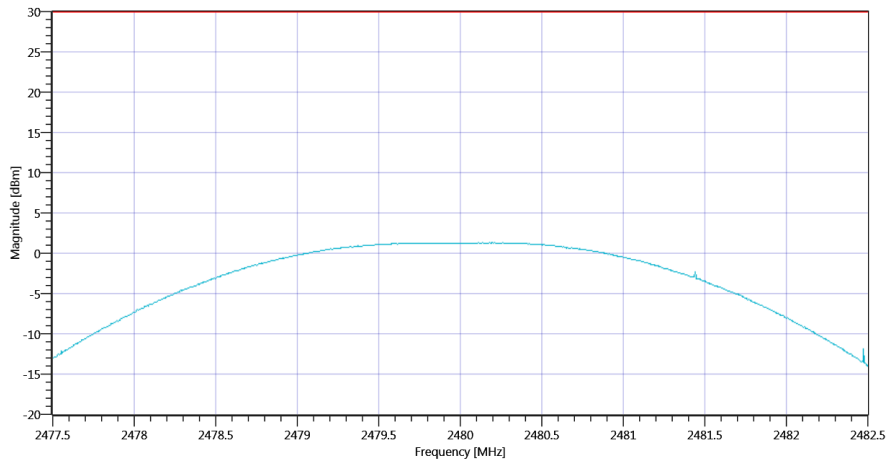
Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4 DTS BW\_09122020\_160624.png

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	11.32   16.11   15
Start [MHz]   Stop [MHz]	2477.500   2482.500
RBW [MHz]   VBW [MHz]	2.000000   5.000000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	50   200   1001   SWE

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	1.32	dBm	PASS
Peak Power	---	1000	1.355189	mW	PASS
Frequency at Peak	---	---	2480.21	MHz	INFO



Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS -- Generic 2G4\_09122020\_160640.png

TEST FINISHED

General Verdict

09.12.2020 16:06:40 / RT: 44 s

PASS

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

Test References	
TC Start	09.12.2020 15:44:57
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
Test Specification	FCC Part 15.247
Test Method	99
Class / TC Version	TC_VM_FCC15247_Bandwidth_6dB_DTS_V01 Version: 0.0.1
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] 2401
Frequency mid to test	False   Freq [MHz] 2440
Frequency high to test	False   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

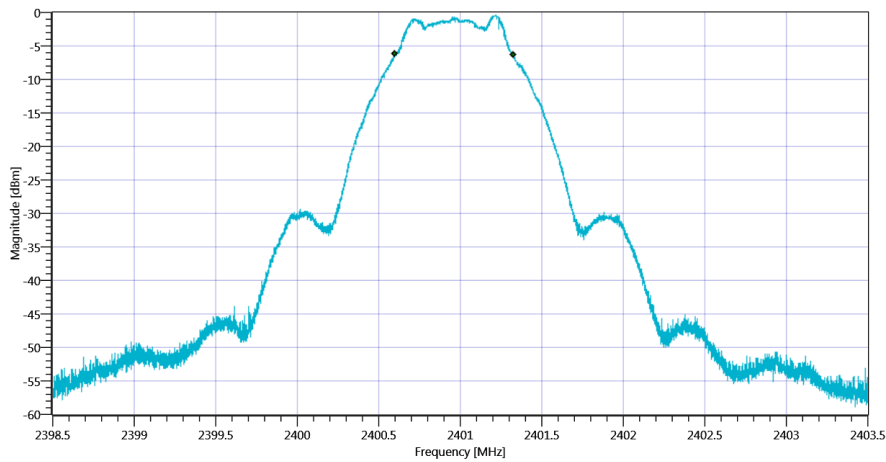
## Test at TX 2401 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	5.56   16.26   5
Start [MHz]   Stop [MHz]	2398.500   2403.500
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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	--	729	kHz	PASS



Plot\_FCC Part 15.247 Bandwidth 6dB DTS ~ Generic 2G4\_09122020\_154525.png

### TEST FINISHED

General Verdict	09.12.2020 15:45:26 / RT: 28 s	PASS
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## 5. FCC Part 15.247 Bandwidth 6dB DTS ~ Generic 2G4

Test References	
TC Start	09.12.2020 15:58:01
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
Test Specification	FCC Part 15.247
Test Method	99
Class / TC Version	TC_VM_FCC15247_Bandwidth_6dB_DTS_V01 Version: 0.0.1
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	False   Freq [MHz] 2401
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	False   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

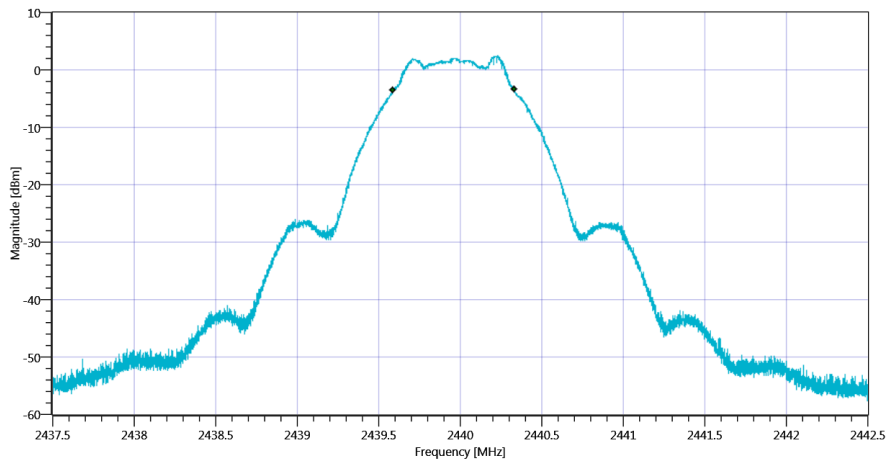
## Test at TX 2440 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	8.32   16.18   10
Start [MHz]   Stop [MHz]	2437.500   2442.500
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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	--	742	kHz	PASS



### TEST FINISHED

General Verdict	09.12.2020 15:58:30 / RT: 28 s	PASS
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## 6. FCC Part 15.247 Bandwidth 6dB DTS ~ Generic 2G4

Test References	
TC Start	09.12.2020 16:06:45
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
Test Specification	FCC Part 15.247
Test Method	99
Class / TC Version	TC_VM_FCC15247_Bandwidth_6dB_DTS_V01 Version: 0.0.1
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	False   Freq [MHz] 2401
Frequency mid to test	False   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

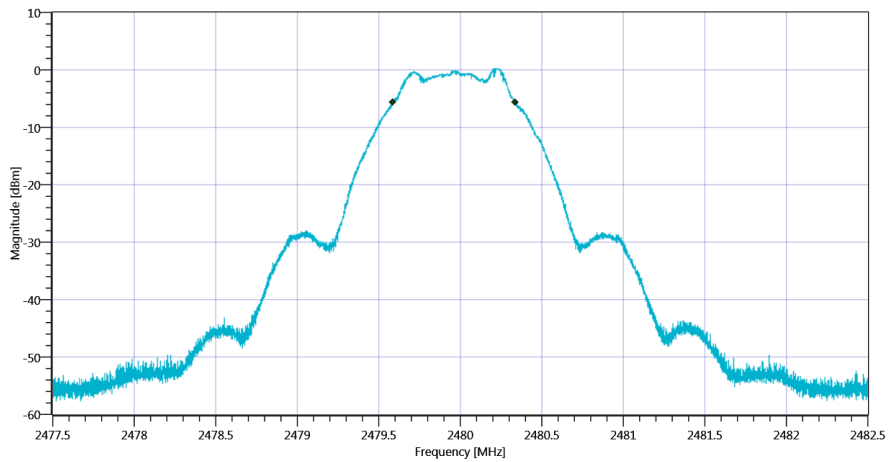
## Test at TX 2480 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	6.33   16.11   10
Start [MHz]   Stop [MHz]	2477.500   2482.500
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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	755	kHz	PASS



Plot\_FCC Part 15.247 Bandwidth 6dB DTS ~ Generic 2G4\_09122020\_160713.png

### TEST FINISHED

General Verdict

09.12.2020 16:07:13 / RT: 28 s

PASS

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

Test References	
TC Start	09.12.2020 15:45:30
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
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_VM_FCC15247_Peak_Power_Spectral_Density_DTS_V01 Version: 0.0.1
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] 2401
Frequency mid to test	False   Freq [MHz] 2440
Frequency high to test	False   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

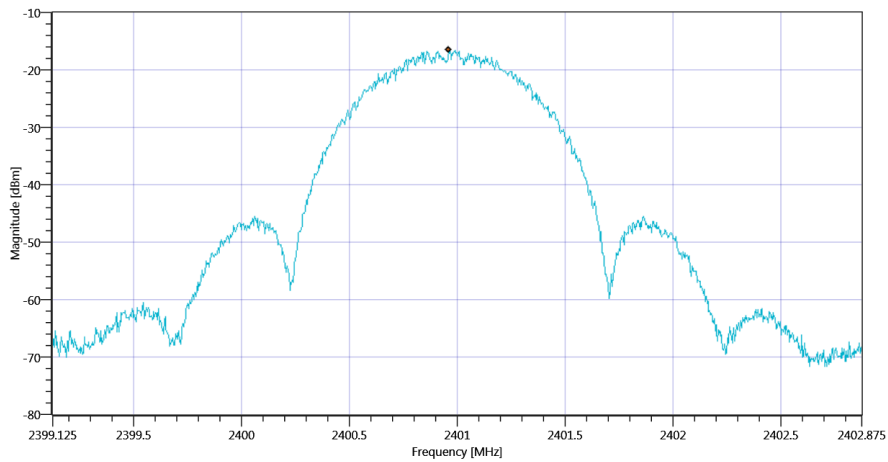
## Test at TX 2401 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	5.56   16.26   5
Start [MHz]   Stop [MHz]	2399.125   2402.875
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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-16.51	dBm/3KHz	PASS



Plot\_FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4\_09122020\_154607.png

### TEST FINISHED

General Verdict	09.12.2020 15:46:08 / RT: 37 s	PASS
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## 8. FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4

Test References	
TC Start	09.12.2020 15:58:34
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
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_VM_FCC15247_Peak_Power_Spectral_Density_DTS_V01 Version: 0.0.1
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	False   Freq [MHz] 2401
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	False   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

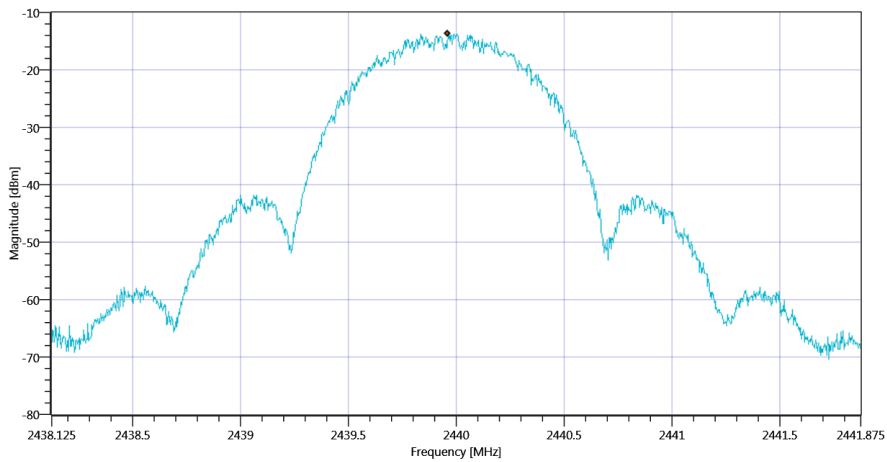
## Test at TX 2440 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	8.38   16.18   10
Start [MHz]   Stop [MHz]	2438.125   2441.875
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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-13.7	dBm/3KHz	PASS



Plot\_FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4\_09122020\_155912.png

### TEST FINISHED

General Verdict	09.12.2020 15:59:12 / RT: 38 s	PASS
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## 9. FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4

Test References	
TC Start	09.12.2020 16:07:17
Ambit Temp [°C]   Humidity [rel%]	24.2   23
System Version	1.0.1.2
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_VM_FCC15247_Peak_Power_Spectral_Density_DTS_V01 Version: 0.0.1
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	False   Freq [MHz] 2401
Frequency mid to test	False   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

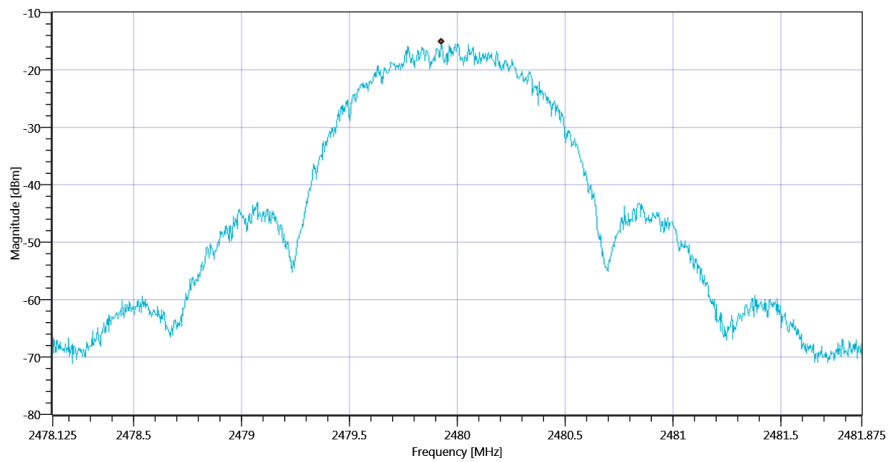
## Test at TX 2480 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	6.36   16.11   10
Start [MHz]   Stop [MHz]	2478.125   2481.875
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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-15.14	dBm/3KHz	PASS



Plot\_FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4\_09122020\_160755.png

### TEST FINISHED

General Verdict	09.12.2020 16:07:55 / RT: 38 s	PASS
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## 10. FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4

Test References	
TC Start	09.12.2020 15:46:12
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
Test Specification	FCC Part 15.247
Test Method	
Class / TC Version	TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 Version: 0.0.2
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] 2401
Frequency mid to test	False   Freq [MHz] 2440
Frequency high to test	False   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

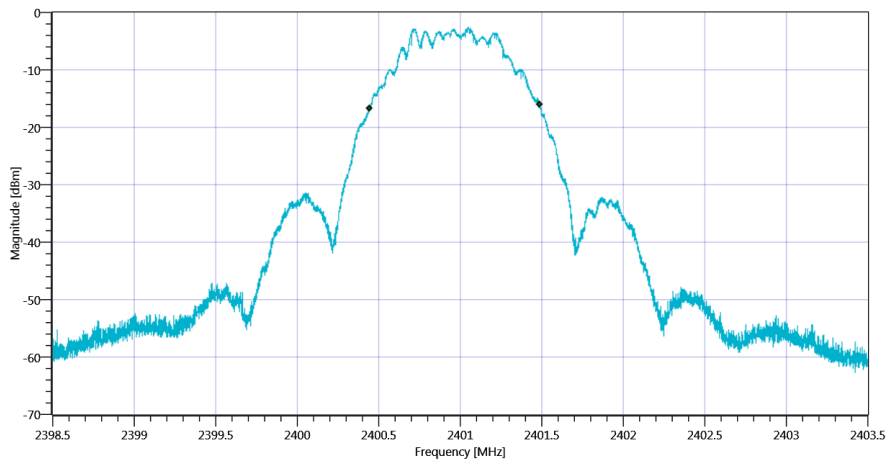
## Test at TX 2401 MHz

### READ SA SETTINGS:

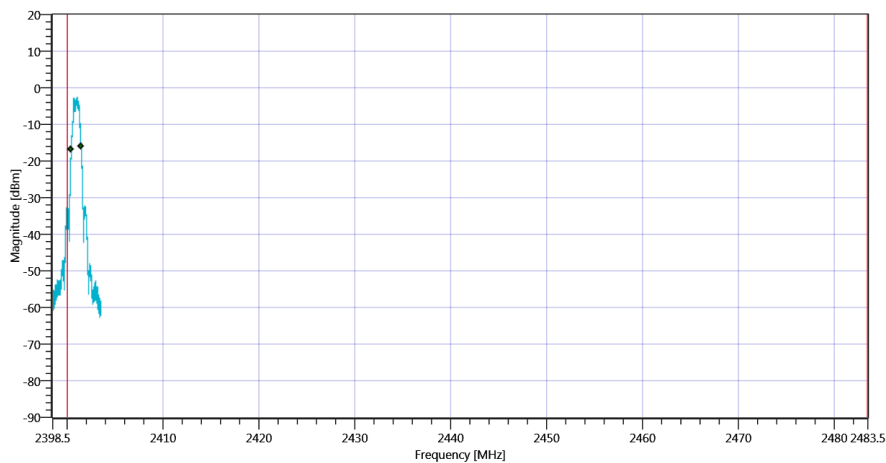
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	5.58   16.26   5
Start [MHz]   Stop [MHz]	2398.500   2403.500
RBW [MHz]   VBW [MHz]	0.050000   0.200000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	50   200   10001   SWE

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1046	kHz	INFO
T1 99%	2400.000000	---	2400.4416	MHz	PASS
T2 99%	---	2483.500000	2401.4880	MHz	PASS



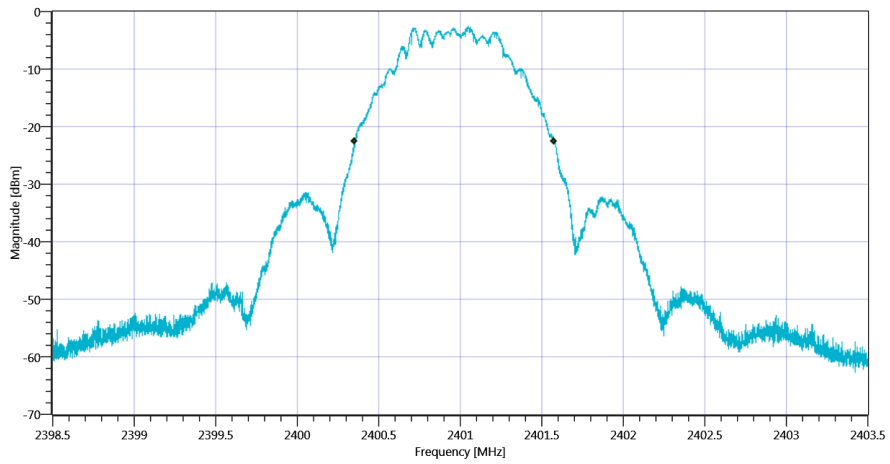
Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 99PCT\_09122020\_154640.png



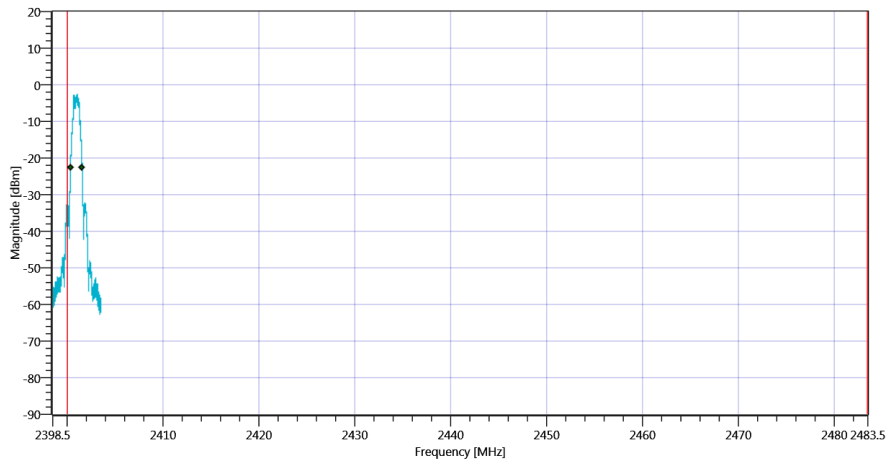
Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4\_09122020\_154644.png

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1224	kHz	INFO
T1 20DB	2400.000000	---	2400.3530	MHz	PASS
T2 20dB	---	2483.500000	2401.5770	MHz	PASS



Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 20dB\_09122020\_154649.png



Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4\_09122020\_154653.png

TEST FINISHED

General Verdict

09.12.2020 15:46:53 / RT: 41 s

PASS

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

Test References	
TC Start	09.12.2020 15:59:16
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
Test Specification	FCC Part 15.247
Test Method	
Class / TC Version	TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 Version: 0.0.2
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	False   Freq [MHz] 2401
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	False   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

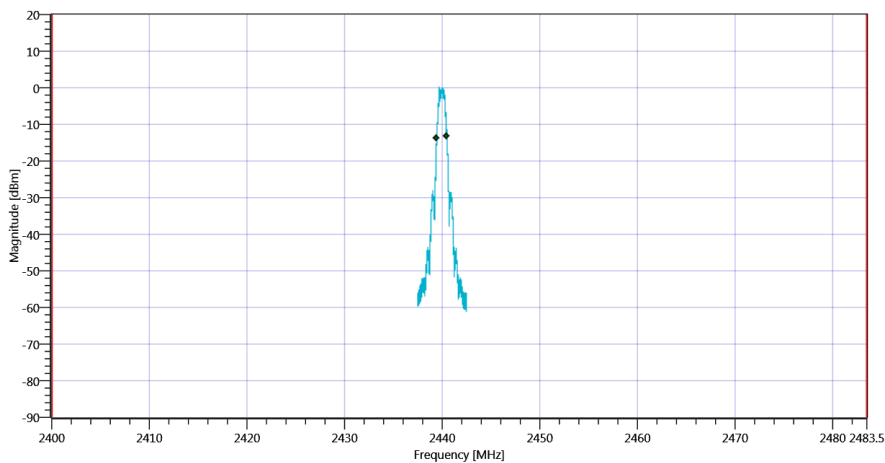
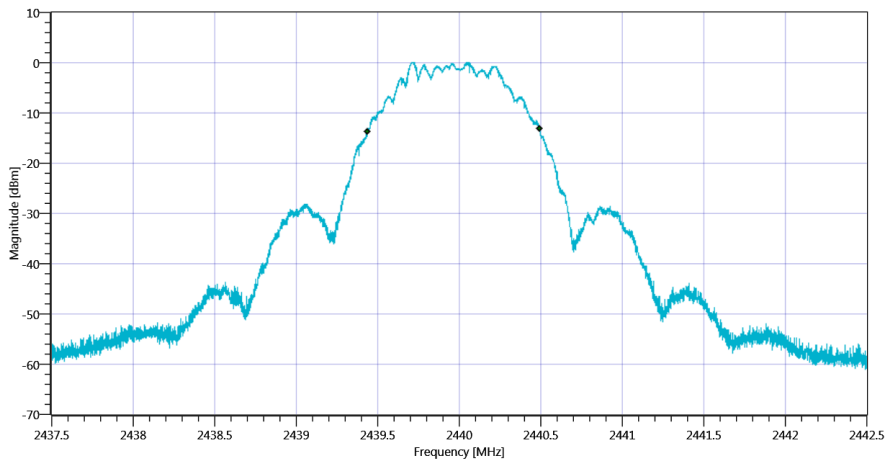
## Test at TX 2440 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	8.38   16.18   10
Start [MHz]   Stop [MHz]	2437.500   2442.500
RBW [MHz]   VBW [MHz]	0.050000   0.200000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	50   200   10001   SWE

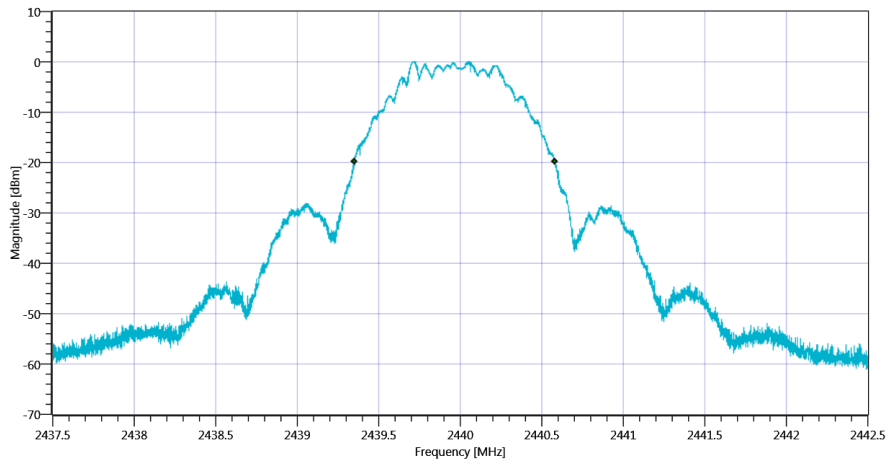
### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1056	kHz	INFO
T1 99%	2400.000000	---	2439.4361	MHz	PASS
T2 99%	---	2483.500000	2440.4925	MHz	PASS

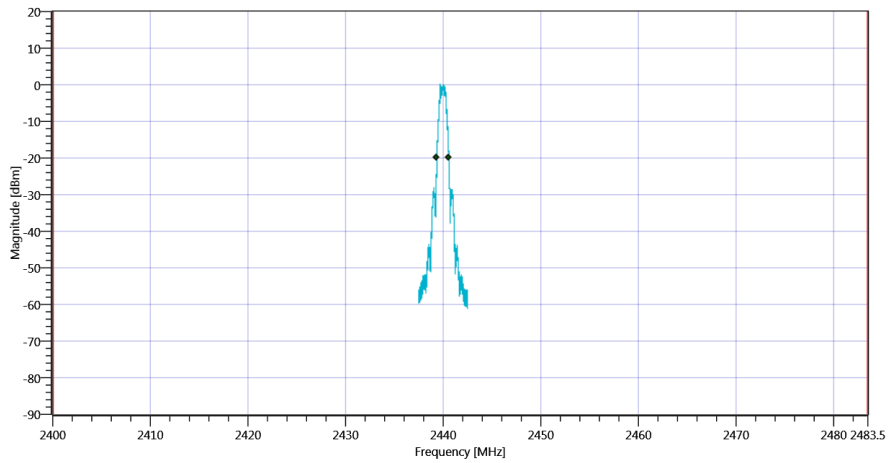


### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1230	kHz	INFO
T1 20DB	2400.000000	---	2439.3520	MHz	PASS
T2 20dB	---	2483.500000	2440.5820	MHz	PASS



Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 20dB\_09122020\_155954.png



Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4\_09122020\_155957.png

TEST FINISHED

General Verdict

09.12.2020 15:59:58 / RT: 41 s

PASS

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

Test References	
TC Start	09.12.2020 16:07:59
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
Test Specification	FCC Part 15.247
Test Method	
Class / TC Version	TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 Version: 0.0.2
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	False   Freq [MHz] 2401
Frequency mid to test	False   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

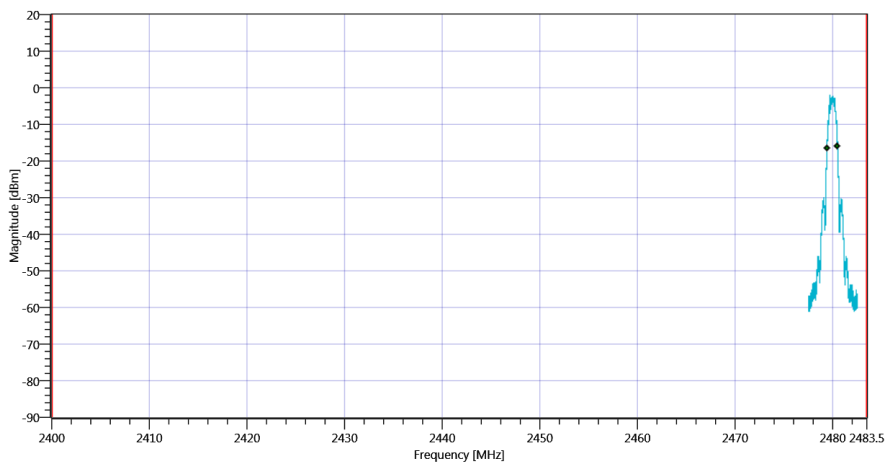
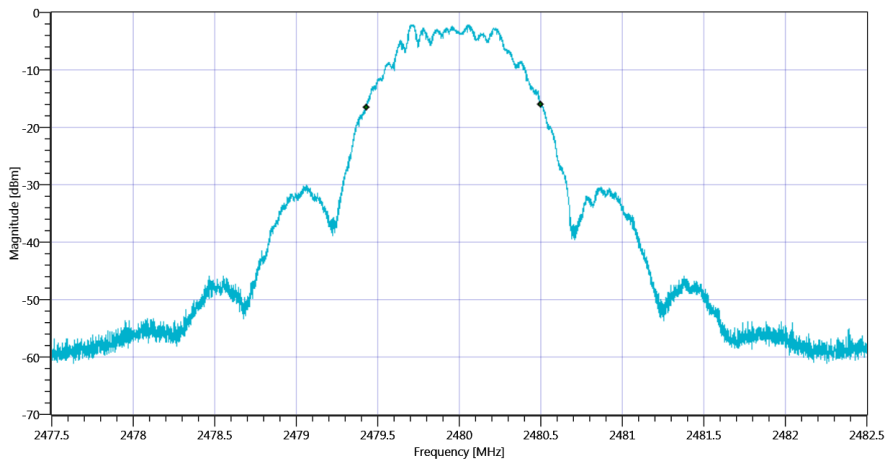
## Test at TX 2480 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	6.33   16.11   10
Start [MHz]   Stop [MHz]	2477.500   2482.500
RBW [MHz]   VBW [MHz]	0.050000   0.200000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	50   200   10001   SWE

### RESULT

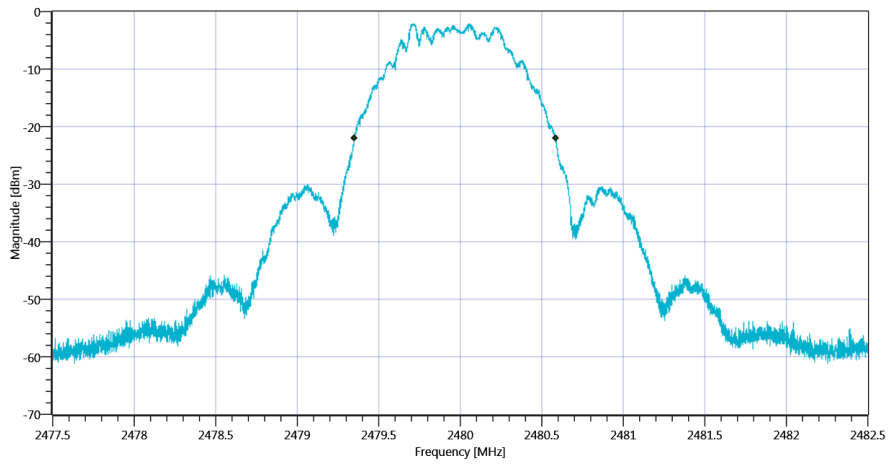
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1063	kHz	INFO
T1 99%	2400.000000	---	2479.4336	MHz	PASS
T2 99%	---	2483.500000	2480.4970	MHz	PASS



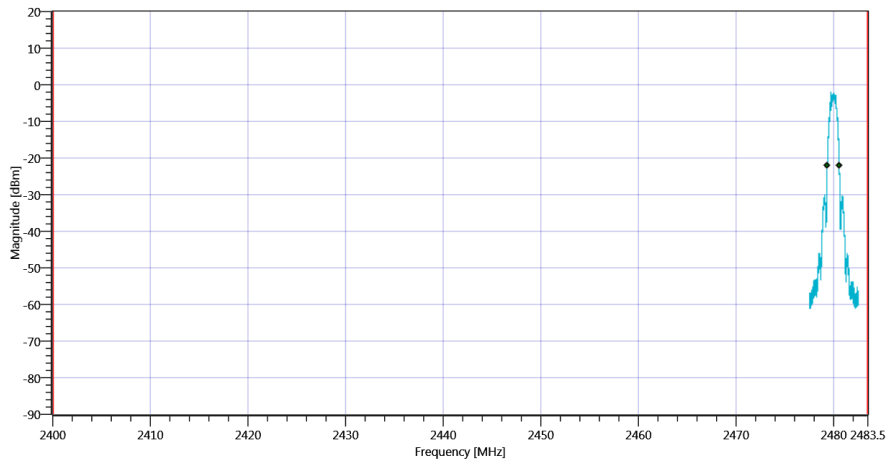
### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1236	kHz	INFO
T1 20DB	2400.000000	---	2479.3500	MHz	PASS
T2 20dB	---	2483.500000	2480.5860	MHz	PASS





Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 20dB\_09122020\_160837.png



Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4\_09122020\_160841.png

TEST FINISHED

General Verdict

09.12.2020 16:08:41 / RT: 41 s

PASS

## 13. FCC Part 15.247 TX Spurious Conducted ~ Generic 2G4

Test References	
TC Start	09.12.2020 15:46:58
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
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_VM_FCC15247_TX_Emissions_Conducted_V01 Version: 0.0.1
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] 2401
Frequency mid to test	False   Freq [MHz] 2440
Frequency high to test	False   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

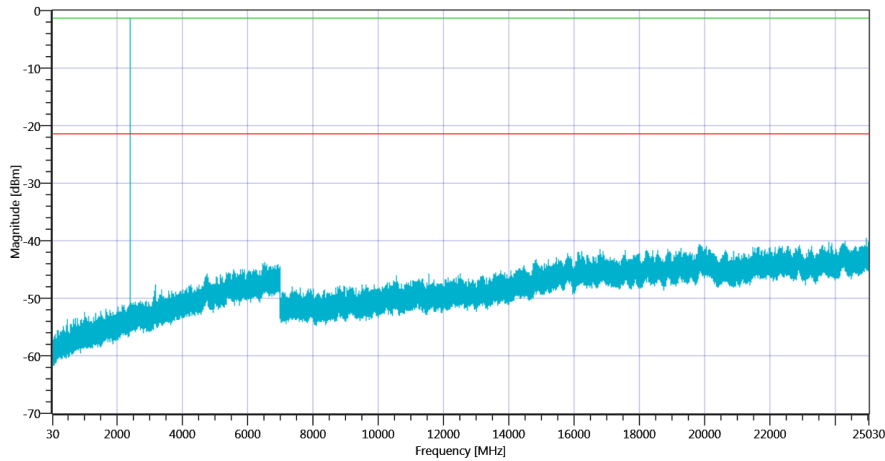
## Test at TX 2401 MHz

### READ SA SETTINGS:

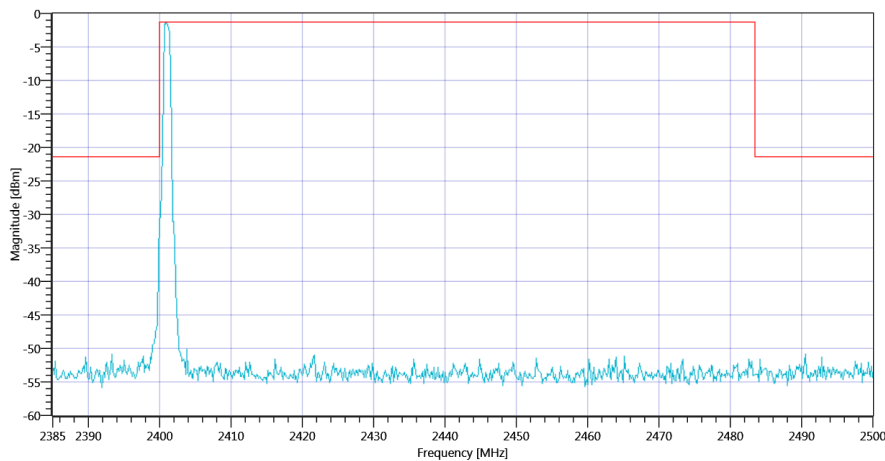
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	0.52   0   20
Start [MHz]   Stop [MHz]	24530.000   25030.000
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	500   8   3001   SWE

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2401.00 MHz	---	---	-1.35	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 2399.833 MHz	0	---	15.22	dB	INFO



Plot\_FCC Part 15.247 TX Spurious Conducted ~ Generic 2G4 2401\_09122020\_155145.png



Plot\_FCC Part 15.247 TX Spurious Conducted ~ Generic 2G4 2401\_09122020\_155148.png

### TEST FINISHED

General Verdict

09.12.2020 15:51:50 / RT: 291 s

PASS

## 14. FCC Part 15.247 TX Spurious Conducted ~ Generic 2G4

Test References	
TC Start	09.12.2020 16:00:02
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
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_VM_FCC15247_TX_Emissions_Conducted_V01 Version: 0.0.1
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	False   Freq [MHz] 2401
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	False   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

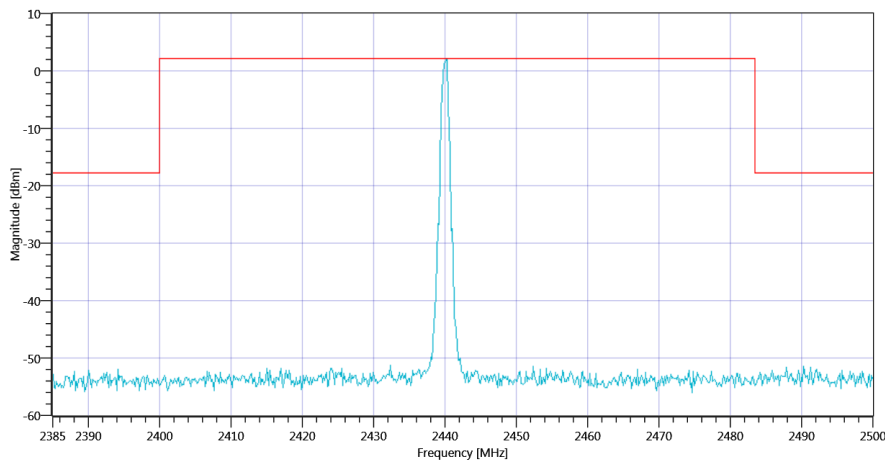
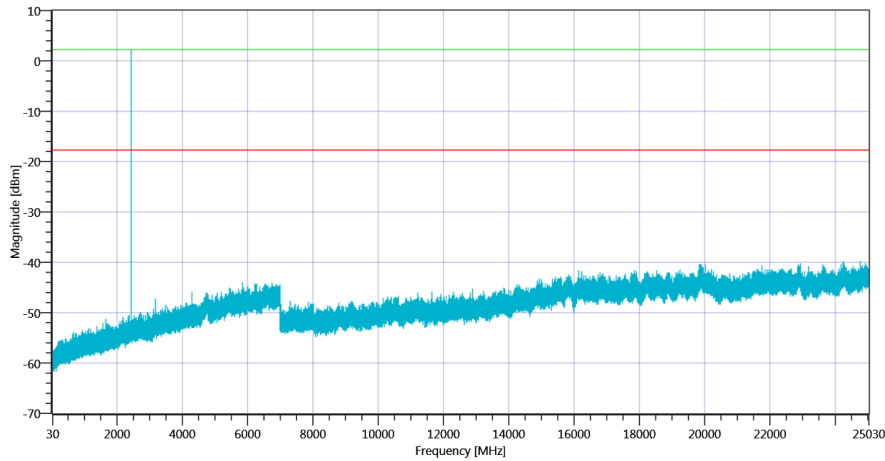
## Test at TX 2440 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	3.33   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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2440.33 MHz	---	---	2.21	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 24774.333 MHz	0	---	21.98	dB	INFO



### TEST FINISHED

General Verdict

09.12.2020 16:04:54 / RT: 292 s

PASS

## 15. FCC Part 15.247 TX Spurious Conducted ~ Generic 2G4

Test References	
TC Start	09.12.2020 16:08:46
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
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_VM_FCC15247_TX_Emissions_Conducted_V01 Version: 0.0.1
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	False   Freq [MHz] 2401
Frequency mid to test	False   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

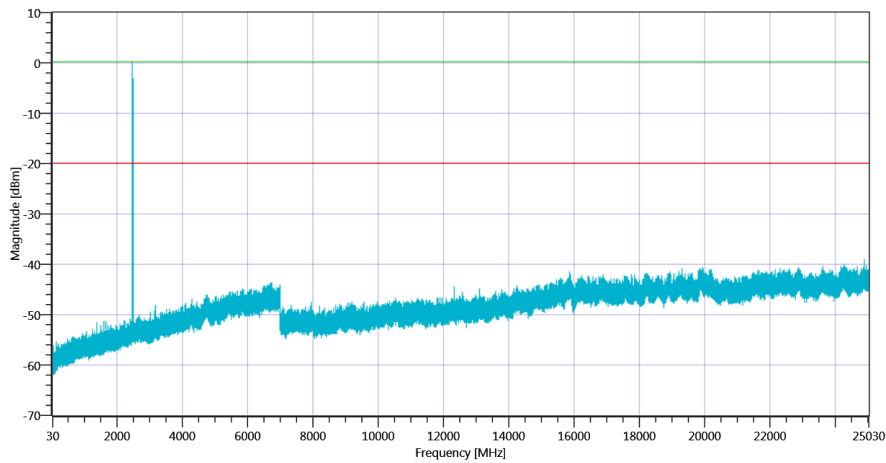
## Test at TX 2480 MHz

### READ SA SETTINGS:

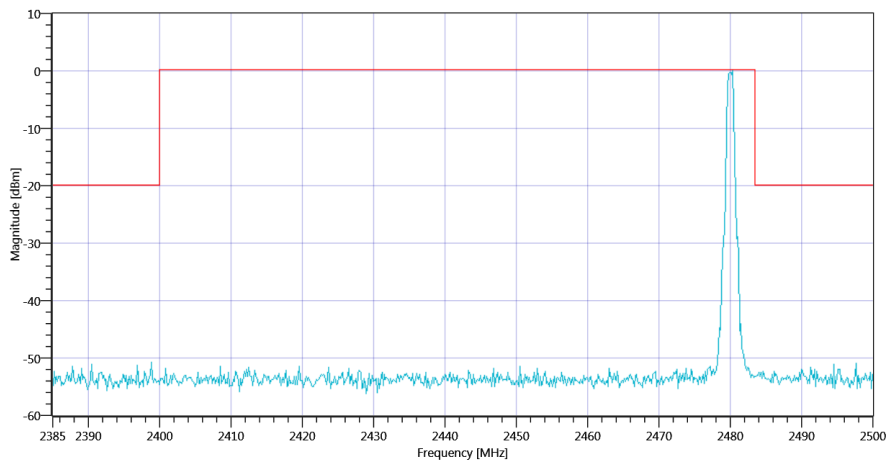
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	1.35   0   20
Start [MHz]   Stop [MHz]	24530.000   25030.000
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	500   8   3001   SWE

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2480.33 MHz	---	---	0.17	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 24890 MHz	0	---	19.32	dB	INFO



Plot\_FCC Part 15.247 TX Spurious Conducted ~ Generic 2G4 2480\_09122020\_161334.png



Plot\_FCC Part 15.247 TX Spurious Conducted ~ Generic 2G4 2480\_09122020\_161337.png

### TEST FINISHED

General Verdict

09.12.2020 16:13:38 / RT: 292 s

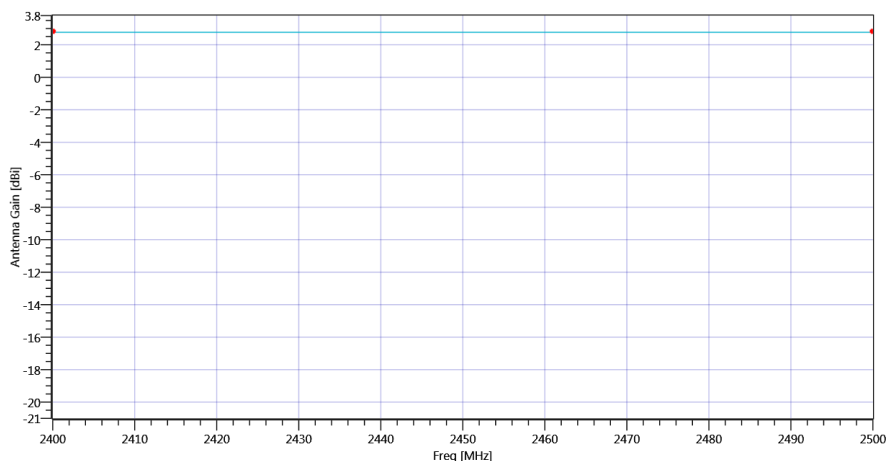
PASS

## 16. FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS (eirp) ~ Generic 2G4

Test References	
TC Start	09.12.2020 15:51:54
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
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_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01 Version: 0.0.1
My Description	FCC 15.247 Restricted Band Edge Cond. Avg DC corrected 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] 2401
Frequency mid to test	False   Freq [MHz] 2440
Frequency high to test	False   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

Antenna Gain Table	
Freq [MHz]	Gain [dBi]
2400	2.8
2500	2.8

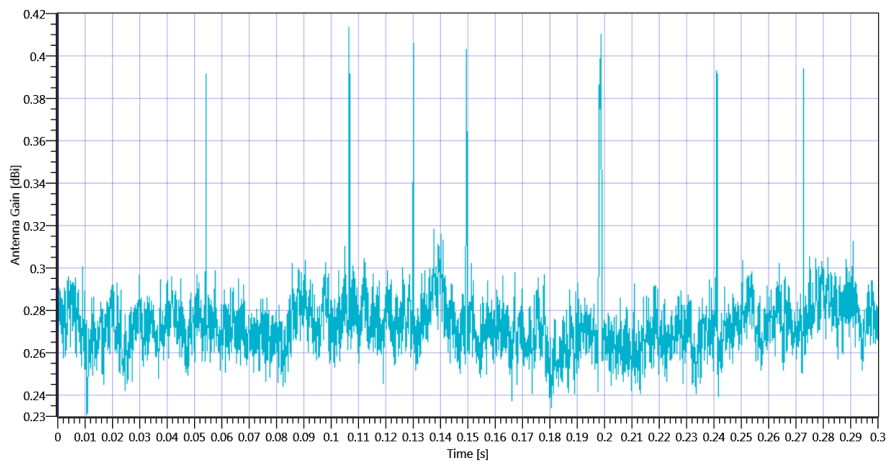


Plot\_GainTable\_09122020\_155159.png



## Test at TX 2401 MHz

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	---	INFO
Duty Cycle max	---	---	0	dB	INFO
Duty Cycle (Burst Ratio) min	---	---	1	---	INFO
Duty Cycle min	---	---	0	dB	INFO

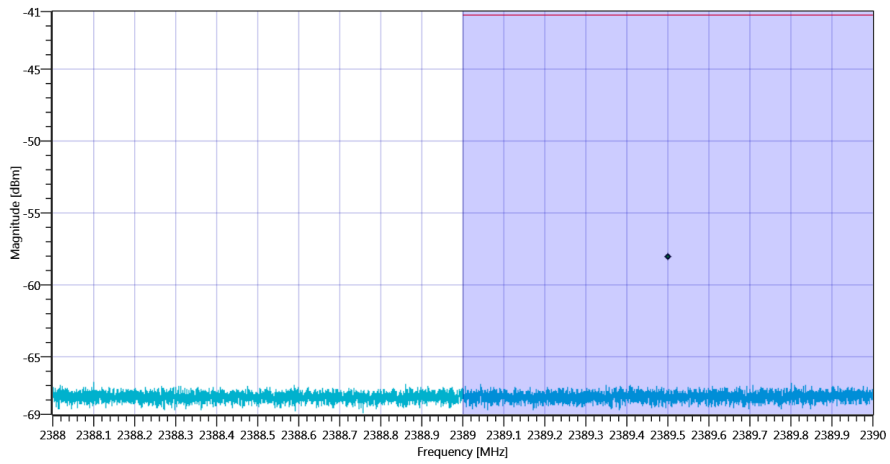


Plot\_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS (eirp) ~ Generic 2G4 2401 MHz - DutyCycle\_09122020\_155214.png

READ SA SETTINGS:	
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	10.47   16.26   10
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

Antenna Gain	
Considered Antenna Gain: [dBi]:	2.8 @ 2389.5MHz

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Duty Cycle worst case	---	---	0	dB	INFO
Band Power Avg	---	---	-58.04	dBm	INFO
Band Power Avg DC corrected	---	---	-58.04	dBm	PASS



Plot\_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS (eirp) ~ Generic 2G4\_09122020\_155237.png

TEST FINISHED

General Verdict

09.12.2020 15:52:37 / RT: 43 s

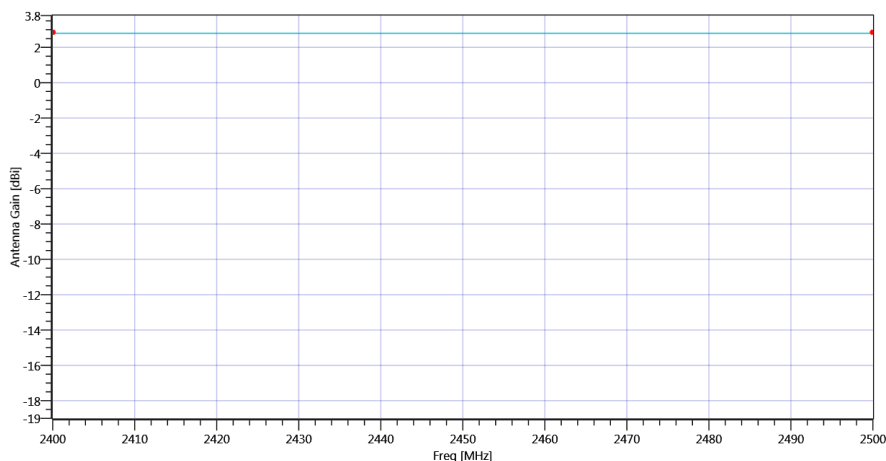
PASS

## 17. FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS (eirp) ~ Generic 2G4

Test References	
TC Start	09.12.2020 16:13:42
Ambit Temp [°C]   Humidity [rel%]	24.3   23
System Version	1.0.1.2
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_VM_FCC15247_Restricted_Band_Edge_Conducted_Avg_DC_corrected_V01 Version: 0.0.1
My Description	FCC 15.247 Restricted Band Edge Cond. Avg DC corrected DTS - Generic 2G4
Add. Information	

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	mid
Voltage	mid
Frequency low to test	False   Freq [MHz] 2401
Frequency mid to test	False   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2480
Switched Path	IUT - SignalingUnit - SpectrumAnalyzer
Devices in use	SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60

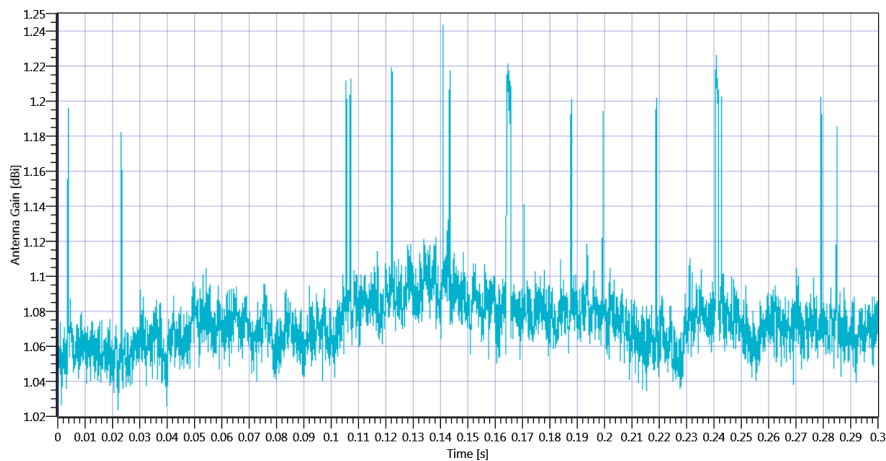
Antenna Gain Table	
Freq [MHz]	Gain [dBi]
2400	2.8
2500	2.8



Plot\_GainTable\_09122020\_161348.png

## Test at TX 2480 MHz

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	---	INFO
Duty Cycle max	---	---	0	dB	INFO
Duty Cycle (Burst Ratio) min	---	---	1	---	INFO
Duty Cycle min	---	---	0	dB	INFO

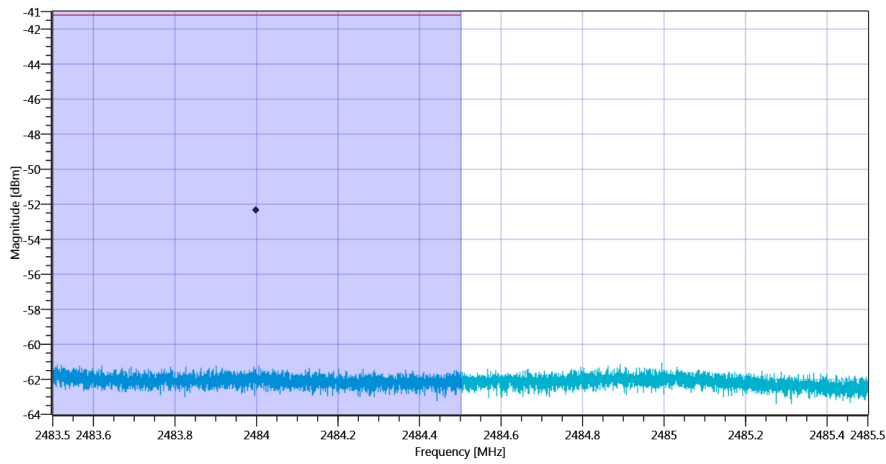


Plot\_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS (eirp) ~ Generic 2G4 2480 MHz - DutyCycle\_09122020\_161403.png

READ SA SETTINGS:	
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	11.33   16.11   15
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

Antenna Gain	
Considered Antenna Gain: [dBi]:	2.8 @ 2484MHz

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Duty Cycle worst case	---	---	0	dB	INFO
Band Power Avg	---	---	-52.36	dBm	INFO
Band Power Avg DC corrected	---	---	-52.36	dBm	PASS



Plot\_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS (eirp) ~ Generic 2G4\_09122020\_161426.png

TEST FINISHED

General Verdict

09.12.2020 16:14:27 / RT: 44 s

PASS

- END OF DOCUMENT -