

## Measurement Results

1-0437/20-01-05\_log1\_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 0
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 16:16:25
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

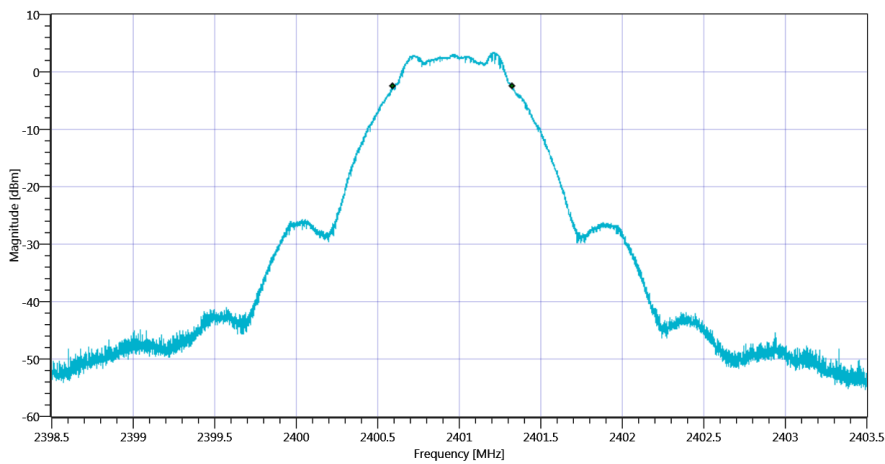
## Test at TX 2401 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	9.27   16.26   10
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)	---	---	729	kHz	INFO



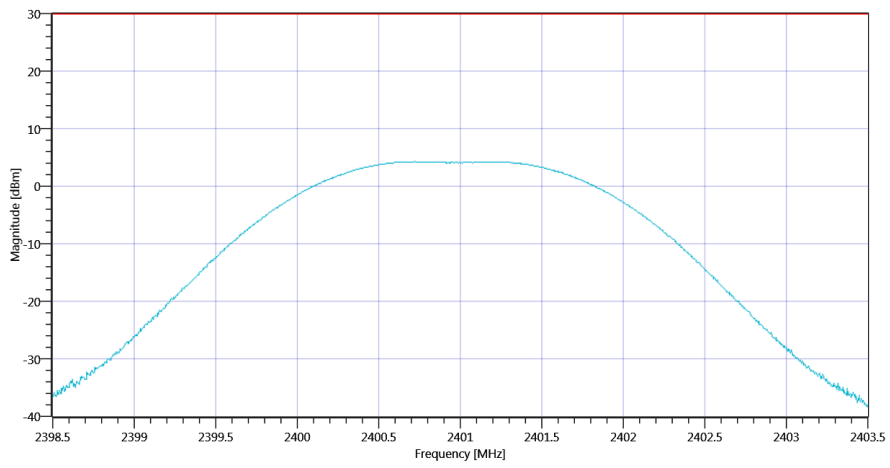
Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4 DTS BW\_09122020\_161653.png

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	14.27   16.26   15
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	4.26	dBm	PASS
Peak Power	---	1000	2.666859	mW	PASS
Frequency at Peak	---	---	2400.72	MHz	INFO



Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS -- Generic 2G4\_09122020\_161709.png

TEST FINISHED

General Verdict

09.12.2020 16:17:09 / RT: 44 s

PASS

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

Test References	
TC Start	09.12.2020 16:25:49
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	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

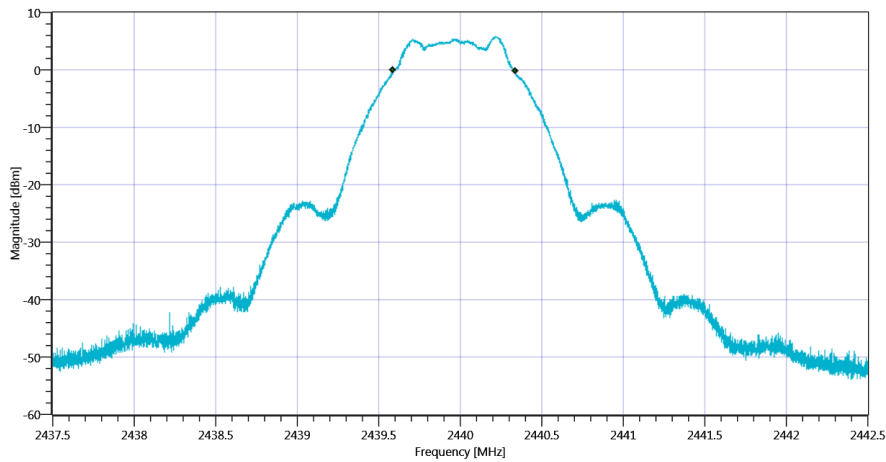
## Test at TX 2440 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	11.73   16.18   15
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)	---	---	748	kHz	INFO



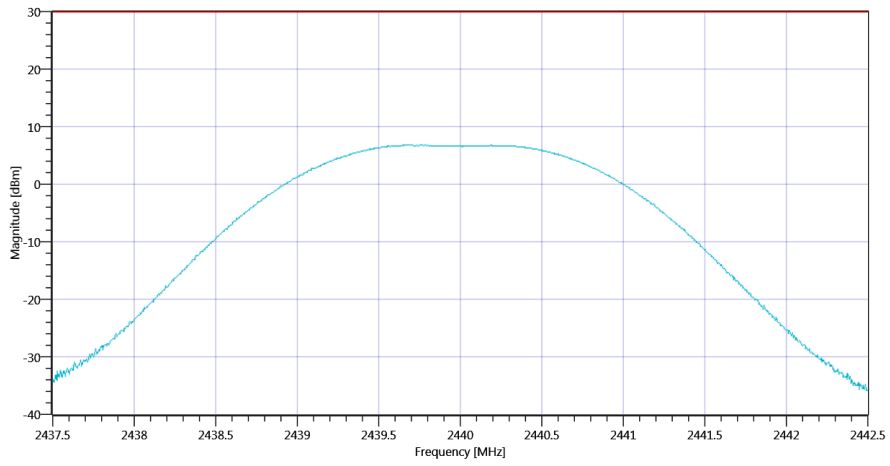
### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	16.73   16.18   20
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	6.78	dBm	PASS
Peak Power	---	1000	4.76431	mW	PASS
Frequency at Peak	---	---	2439.69	MHz	INFO





Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS -- Generic 2G4\_09122020\_162634.png

TEST FINISHED

General Verdict

09.12.2020 16:26:34 / RT: 44 s

PASS

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

Test References	
TC Start	09.12.2020 16:34:39
Ambit Temp [°C]   Humidity [rel%]	24.4   22
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

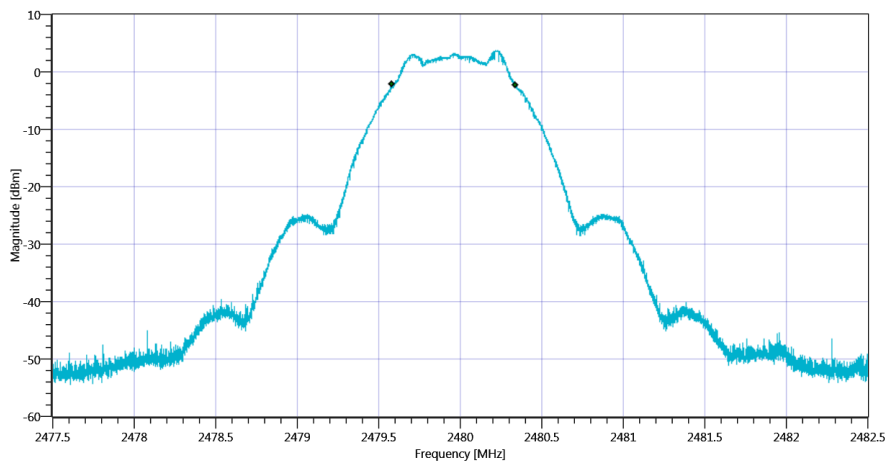
## Test at TX 2480 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	9.66   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)	---	---	758	kHz	INFO



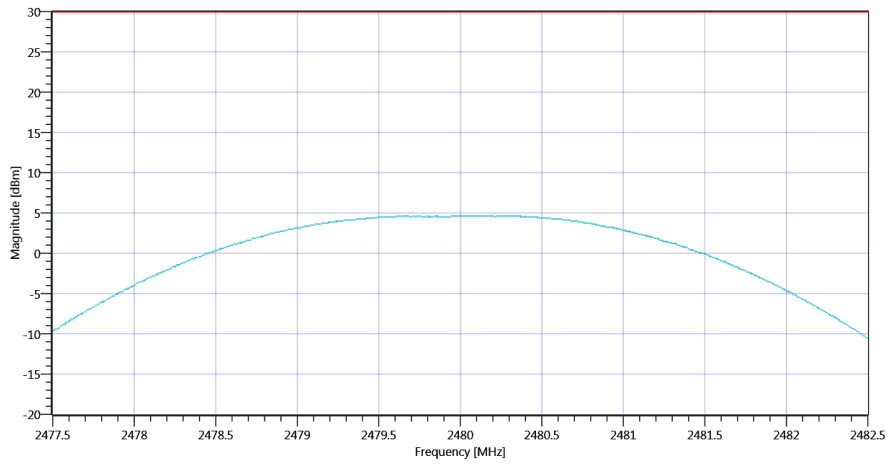
Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ Generic 2G4 DTS BW\_09122020\_163507.png

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	14.66   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	4.64	dBm	PASS
Peak Power	---	1000	2.910717	mW	PASS
Frequency at Peak	---	---	2480.165	MHz	INFO



Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS -- Generic 2G4\_09122020\_163523.png

TEST FINISHED

General Verdict

09.12.2020 16:35:24 / RT: 44 s

PASS

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

Test References	
TC Start	09.12.2020 16:17:14
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

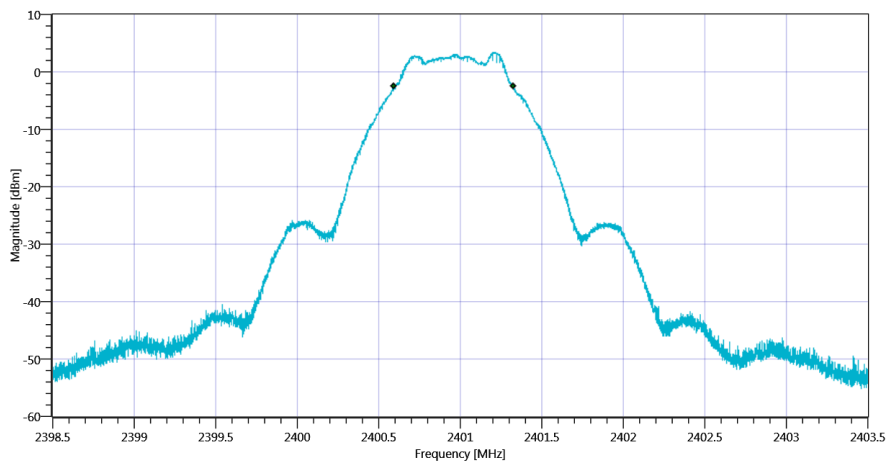
## Test at TX 2401 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	9.32   16.26   10
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	--	733	kHz	PASS



Plot\_FCC Part 15.247 Bandwidth 6dB DTS ~ Generic 2G4\_09122020\_161741.png

### TEST FINISHED

General Verdict

09.12.2020 16:17:42 / RT: 28 s

PASS

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

Test References	
TC Start	09.12.2020 16:26:38
Ambit Temp [°C]   Humidity [rel%]	24.3   22
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

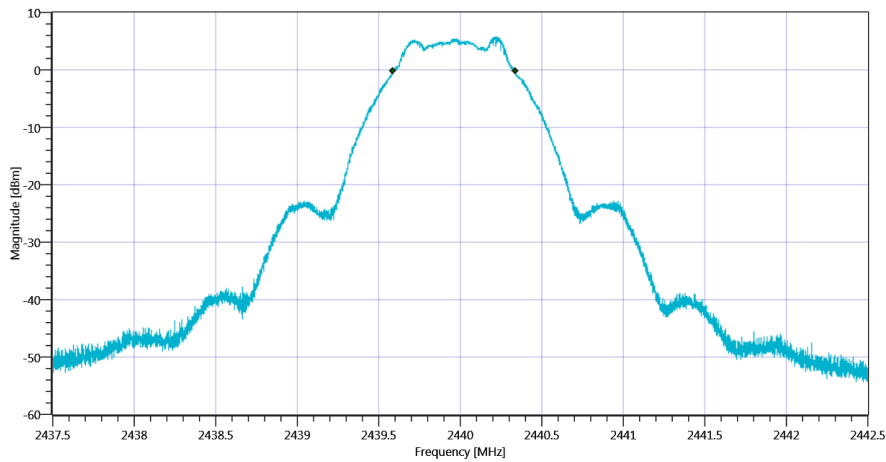
## Test at TX 2440 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	11.70   16.18   15
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	--	753	kHz	PASS



Plot\_FCC Part 15.247 Bandwidth 6dB DTS ~ Generic 2G4\_09122020\_162706.png

### TEST FINISHED

General Verdict

09.12.2020 16:27:07 / RT: 28 s

PASS



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

Test References	
TC Start	09.12.2020 16:35:29
Ambit Temp [°C]   Humidity [rel%]	24.4   22
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

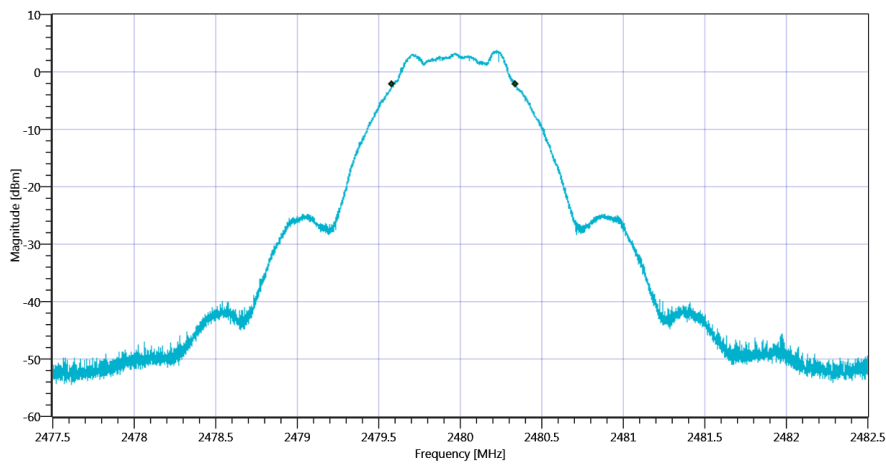
## Test at TX 2480 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	9.63   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	--	754	kHz	PASS



Plot\_FCC Part 15.247 Bandwidth 6dB DTS ~ Generic 2G4\_09122020\_163557.png

### TEST FINISHED

General Verdict

09.12.2020 16:35:57 / RT: 28 s

PASS

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

Test References	
TC Start	09.12.2020 16:17:46
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

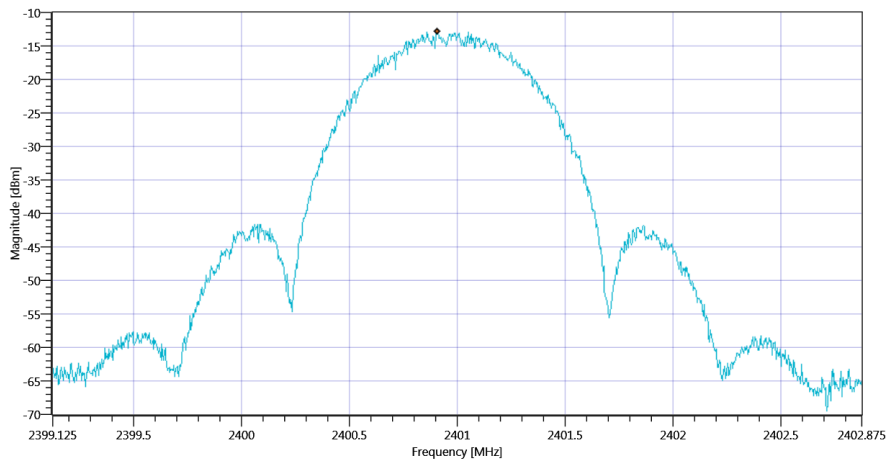
## Test at TX 2401 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	9.23   16.26   10
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	-12.94	dBm/3KHz	PASS



Plot\_FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4\_09122020\_161823.png

### TEST FINISHED

General Verdict	09.12.2020 16:18:24 / 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 16:27:11
Ambit Temp [°C]   Humidity [rel%]	24.4   22
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

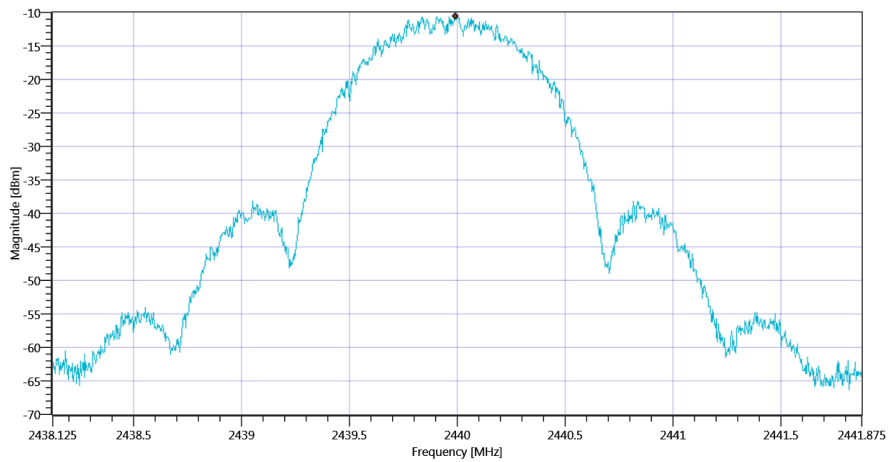
## Test at TX 2440 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	11.68   16.18   15
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	-10.58	dBm/3KHz	PASS



Plot\_FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4\_09122020\_162748.png

### TEST FINISHED

General Verdict	09.12.2020 16:27:49 / RT: 37 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 16:36:01
Ambit Temp [°C]   Humidity [rel%]	24.4   22
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

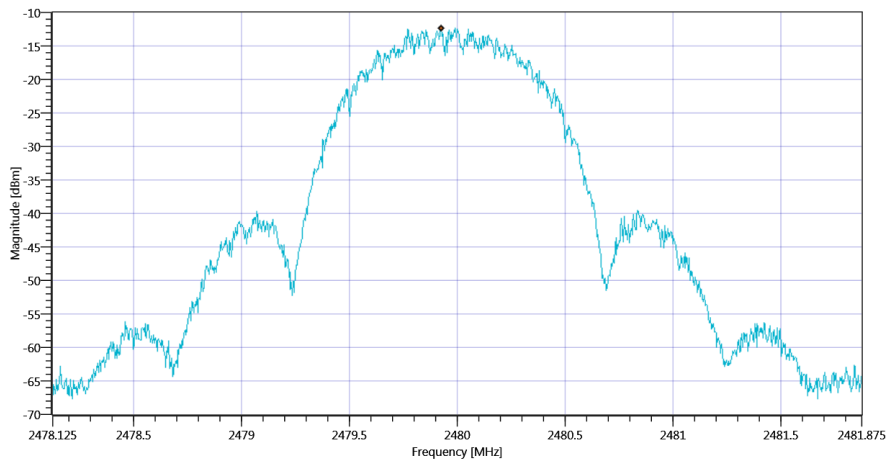
## Test at TX 2480 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	9.67   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	-12.4	dBm/3KHz	PASS



Plot\_FCC Part 15.247 Peak Power Spectral Density DTS ~ Generic 2G4\_09122020\_163639.png

### TEST FINISHED

General Verdict	09.12.2020 16:36:39 / 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 16:18:28
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

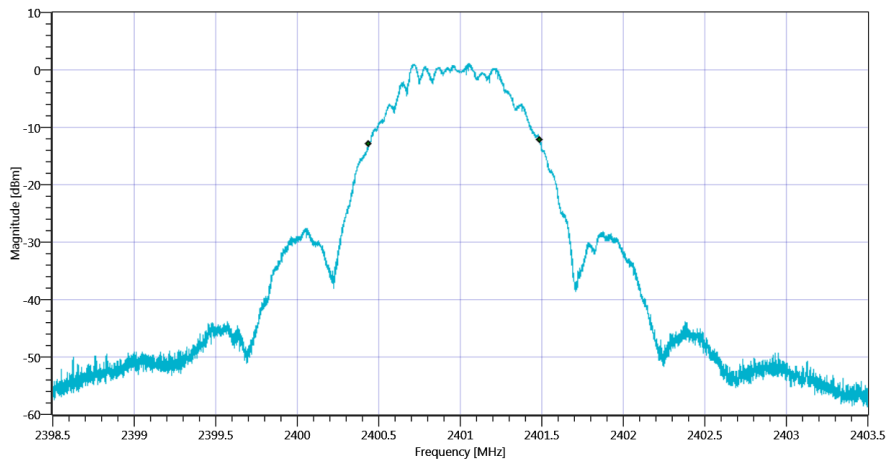
## Test at TX 2401 MHz

### READ SA SETTINGS:

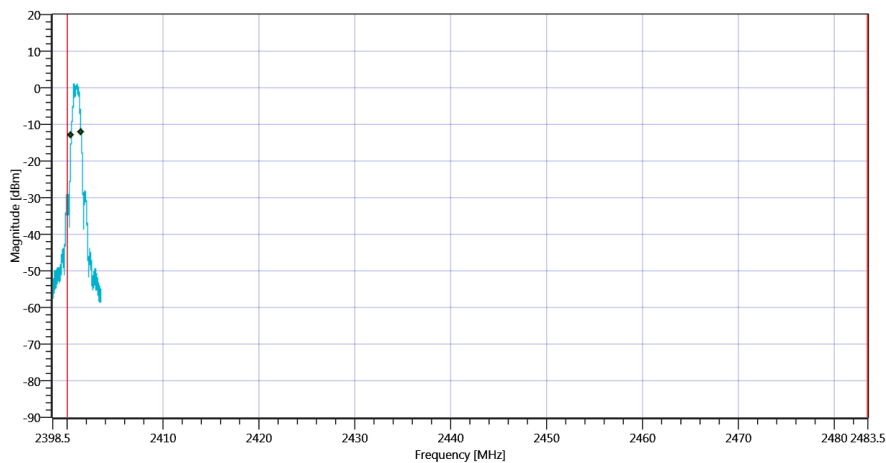
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	9.25   16.26   10
Start [MHz]   Stop [MHz]	2398.500   2403.500
RBW [MHz]   VBW [MHz]	0.050000   0.200000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	50   200   10001   SWE

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1047	kHz	INFO
T1 99%	2400.000000	---	2400.4406	MHz	PASS
T2 99%	---	2483.500000	2401.4880	MHz	PASS



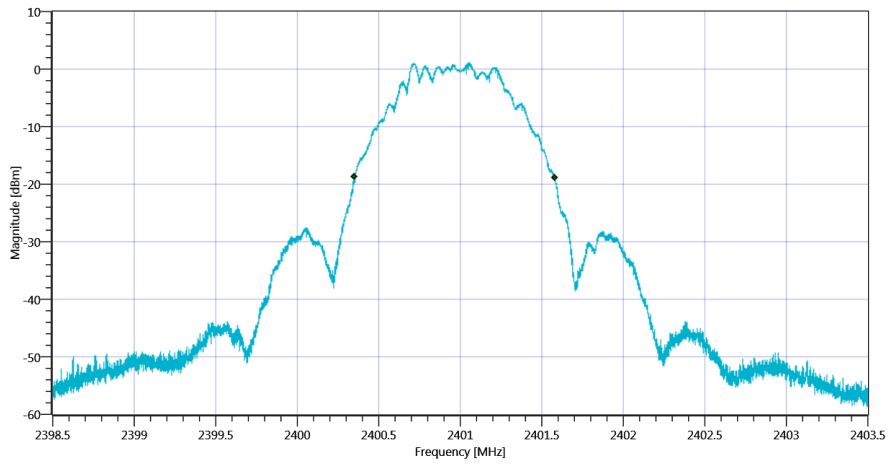
Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 99PCT\_09122020\_161856.png



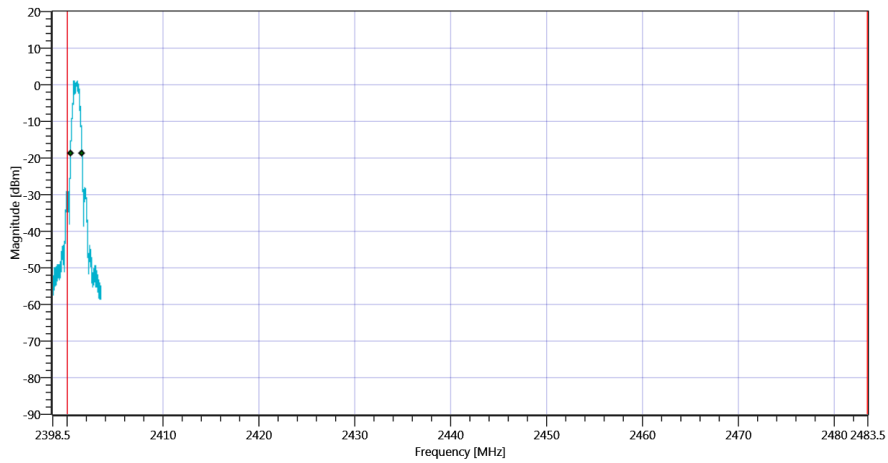
Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4\_09122020\_161900.png

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1227	kHz	INFO
T1 20DB	2400.000000	---	2400.3520	MHz	PASS
T2 20dB	---	2483.500000	2401.5785	MHz	PASS



Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 20dB\_09122020\_161905.png



Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4\_09122020\_161908.png

TEST FINISHED

General Verdict

09.12.2020 16:19:09 / RT: 40 s

PASS

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

Test References	
TC Start	09.12.2020 16:27:53
Ambit Temp [°C]   Humidity [rel%]	24.3   22
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

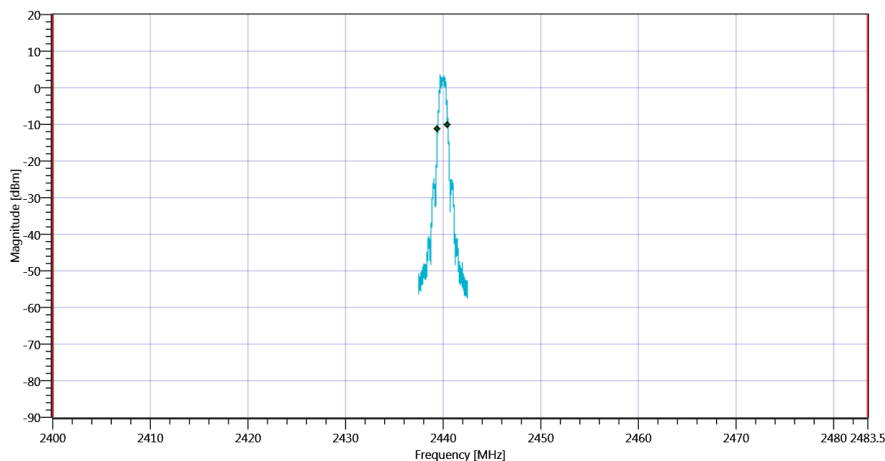
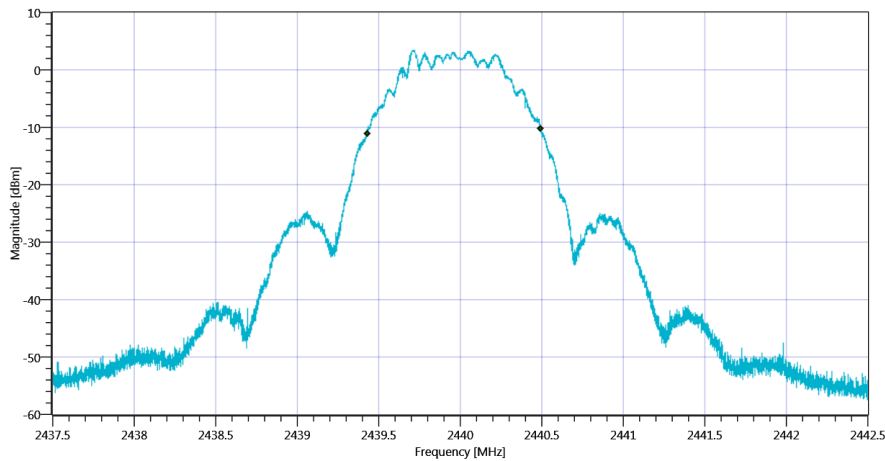
## Test at TX 2440 MHz

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	11.72   16.18   15
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

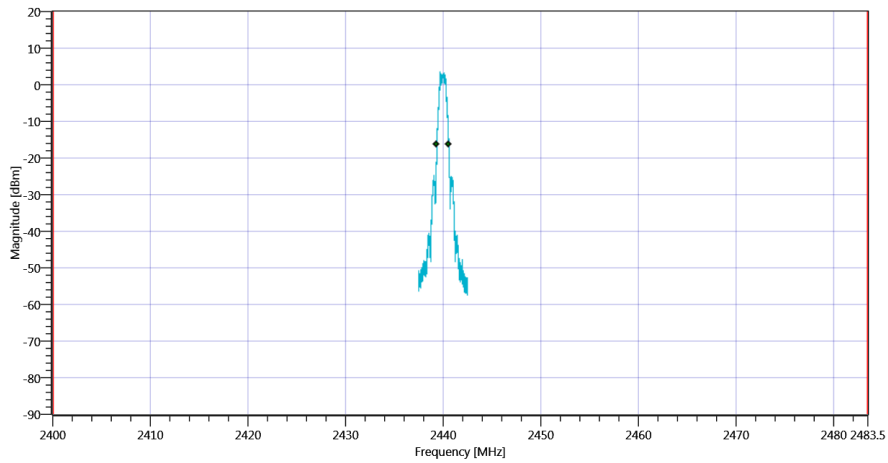
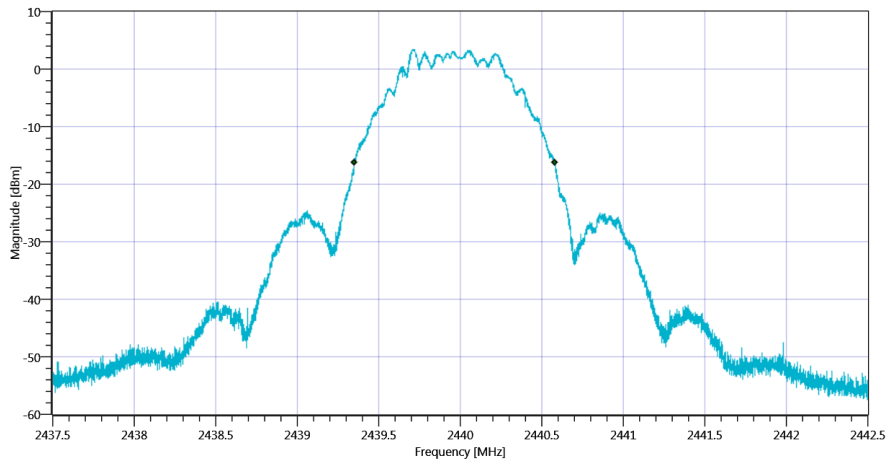
### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1058	kHz	INFO
T1 99%	2400.000000	---	2439.4346	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	---	2439.3505	MHz	PASS
T2 20dB	---	2483.500000	2440.5805	MHz	PASS



TEST FINISHED

General Verdict

09.12.2020 16:28:35 / RT: 41 s

PASS

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

Test References	
TC Start	09.12.2020 16:36:43
Ambit Temp [°C]   Humidity [rel%]	24.3   22
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

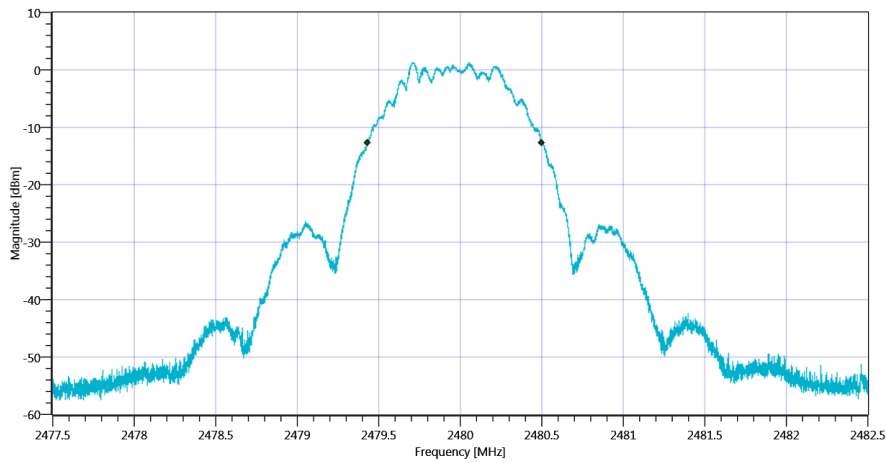
## Test at TX 2480 MHz

### READ SA SETTINGS:

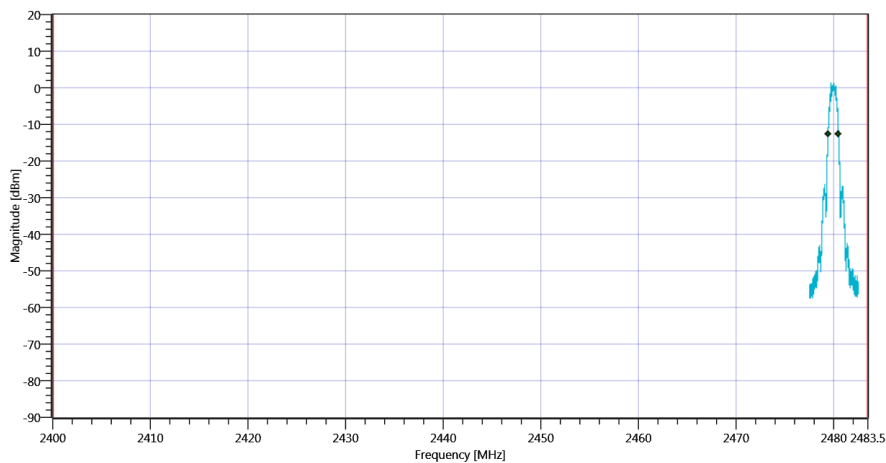
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	9.61   16.11   10
Start [MHz]   Stop [MHz]	2477.500   2482.500
RBW [MHz]   VBW [MHz]	0.050000   0.200000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	50   200   10001   SWE

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1065	kHz	INFO
T1 99%	2400.000000	---	2479.4321	MHz	PASS
T2 99%	---	2483.500000	2480.4975	MHz	PASS



Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 99PCT\_09122020\_163712.png

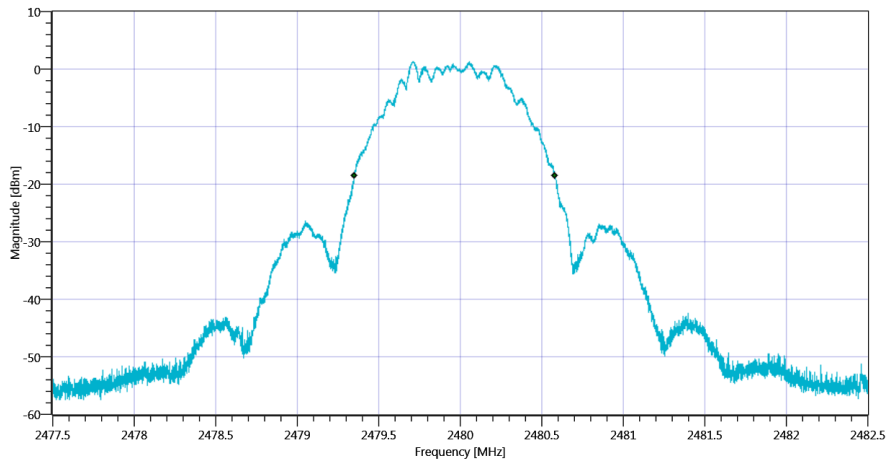


Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4\_09122020\_163716.png

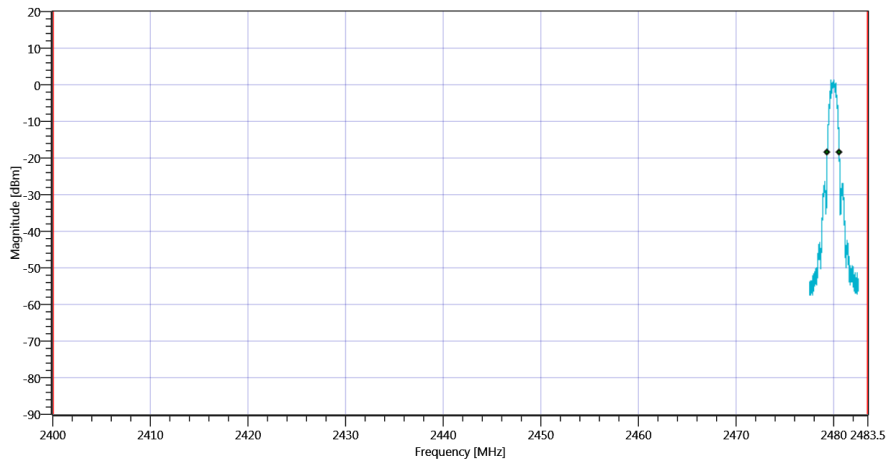
### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1233	kHz	INFO
T1 20dB	2400.000000	---	2479.3500	MHz	PASS
T2 20dB	---	2483.500000	2480.5830	MHz	PASS





Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 20dB\_09122020\_163721.png



Plot\_FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4\_09122020\_163725.png

TEST FINISHED

General Verdict

09.12.2020 16:37:25 / RT: 41 s

PASS

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

Test References	
TC Start	09.12.2020 16:19:13
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

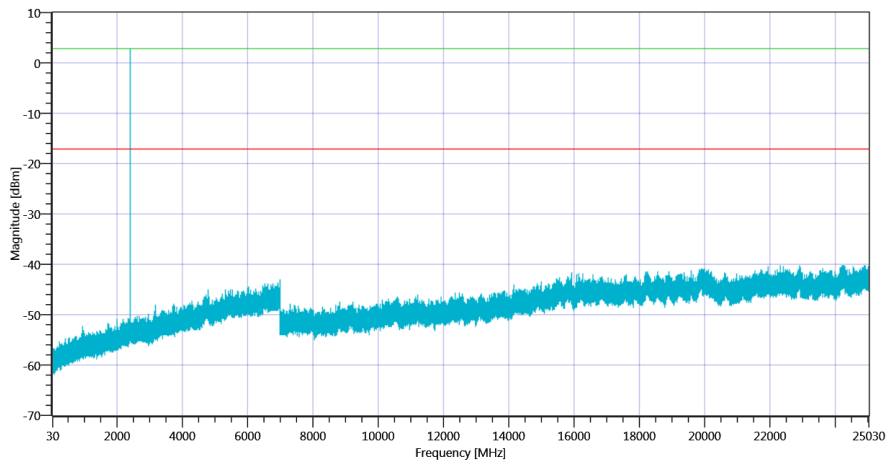
## Test at TX 2401 MHz

### READ SA SETTINGS:

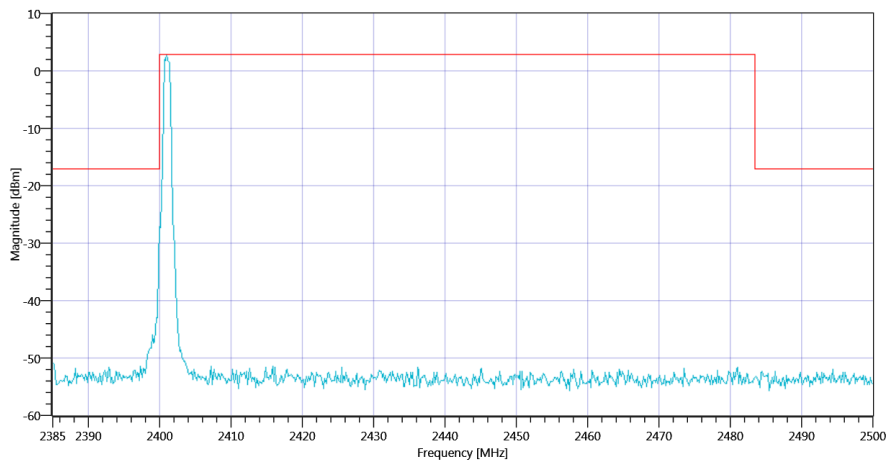
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	4.26   0   20
Start [MHz]   Stop [MHz]	24530.000   25030.000
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	500   8   3001   SWE

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2401.00 MHz	---	---	2.88	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 2399.833 MHz	0	---	15.84	dB	INFO



Plot\_FCC Part 15.247 TX Spurious Conducted ~ Generic 2G4 2401\_09122020\_162401.png



Plot\_FCC Part 15.247 TX Spurious Conducted ~ Generic 2G4 2401\_09122020\_162404.png

### TEST FINISHED

General Verdict

09.12.2020 16:24:06 / RT: 292 s

PASS

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

Test References	
TC Start	09.12.2020 16:28:39
Ambit Temp [°C]   Humidity [rel%]	24.3   22
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

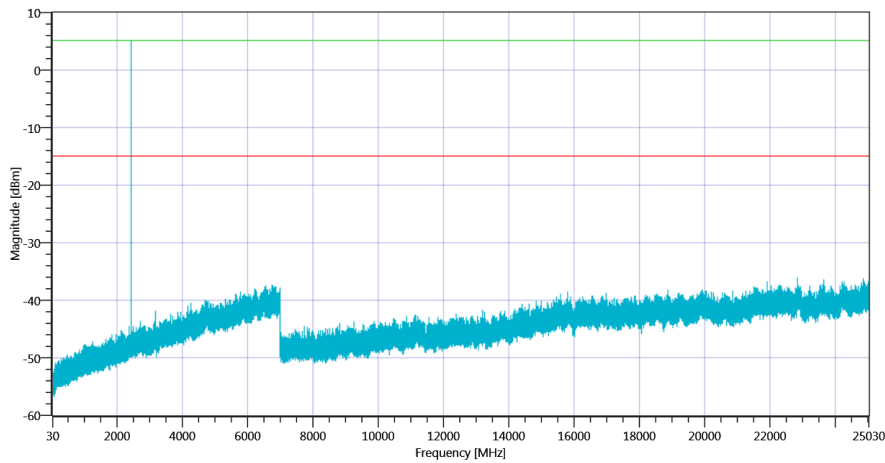
## Test at TX 2440 MHz

### READ SA SETTINGS:

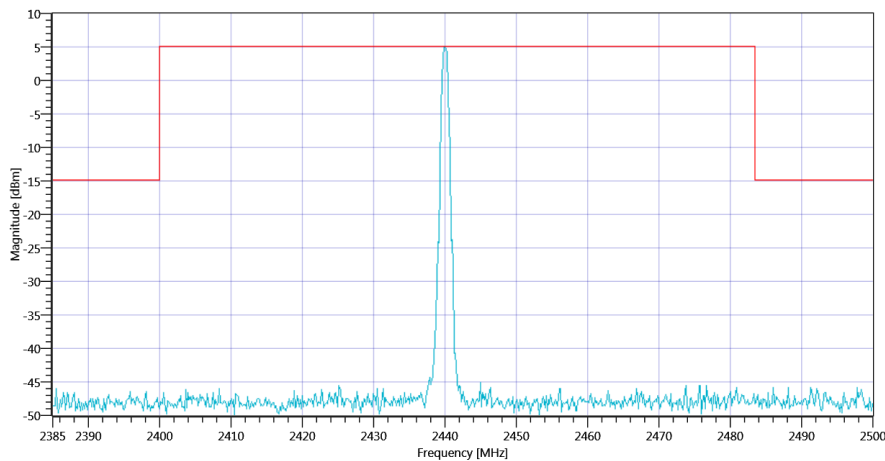
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	6.68   0   25
Start [MHz]   Stop [MHz]	24530.000   25030.000
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	500   8   3001   SWE

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2440.00 MHz	---	---	5.07	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 30 MHz	0	---	-145.56	dB	INFO



Plot\_FCC Part 15.247 TX Spurious Conducted ~ Generic 2G4 2440\_09122020\_163327.png



Plot\_FCC Part 15.247 TX Spurious Conducted ~ Generic 2G4 2440\_09122020\_163330.png

### TEST FINISHED

General Verdict

09.12.2020 16:33:31 / RT: 292 s

PASS

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

Test References	
TC Start	09.12.2020 16:37:30
Ambit Temp [°C]   Humidity [rel%]	24.3   22
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

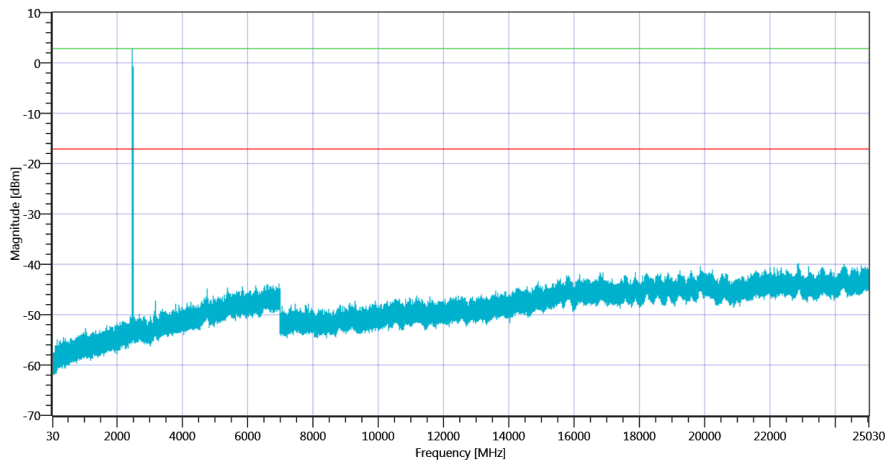
## Test at TX 2480 MHz

### READ SA SETTINGS:

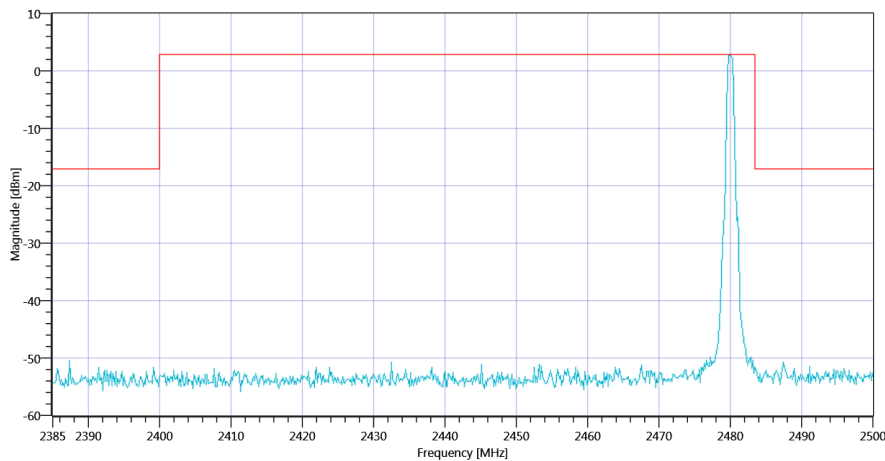
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	4.58   0   20
Start [MHz]   Stop [MHz]	24530.000   25030.000
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	500   8   3001   SWE

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2479.83 MHz	---	---	2.90	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 22887.333 MHz	0	---	22.7	dB	INFO



Plot\_FCC Part 15.247 TX Spurious Conducted ~ Generic 2G4 2480\_09122020\_164218.png



Plot\_FCC Part 15.247 TX Spurious Conducted ~ Generic 2G4 2480\_09122020\_164221.png

### TEST FINISHED

General Verdict

09.12.2020 16:42:22 / RT: 292 s

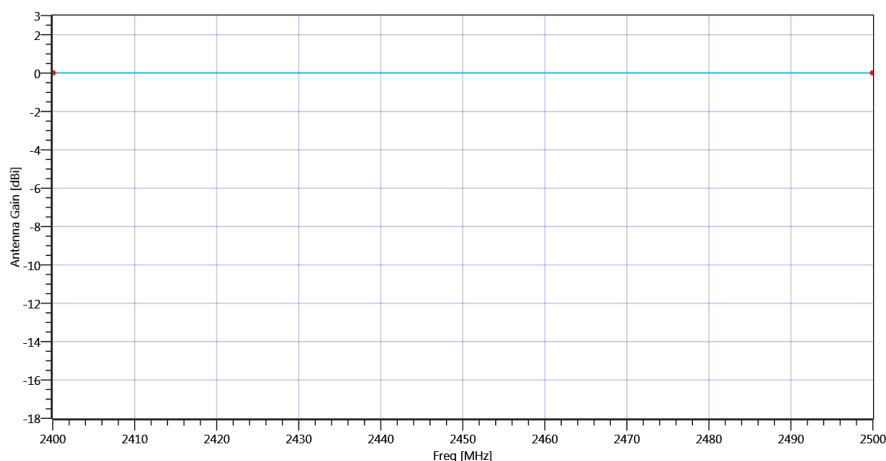
PASS

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

Test References	
TC Start	09.12.2020 16:24:10
Ambit Temp [°C]   Humidity [rel%]	24.3   22
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	0
2500	0

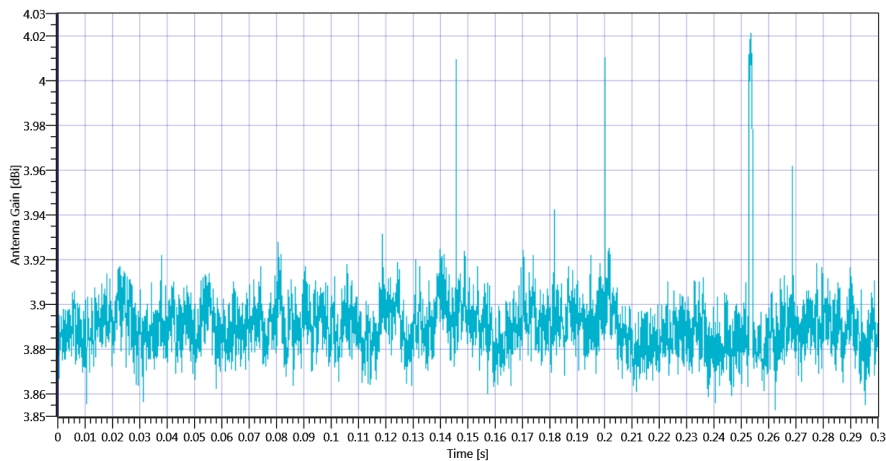


Plot\_GainTable\_09122020\_162415.png



## 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

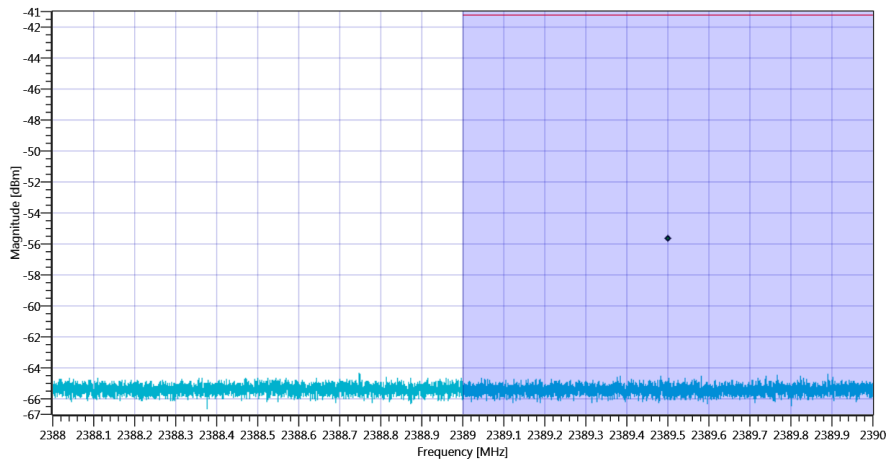


Plot\_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS (eirp) ~ Generic 2G4 2401 MHz - DutyCycle\_09122020\_162430.png

READ SA SETTINGS:	
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	14.18   16.26   15
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]:	0 @ 2389.5MHz

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Duty Cycle worst case	---	---	0	dB	INFO
Band Power Avg	---	---	-55.69	dBm	INFO
Band Power Avg DC corrected	---	---	-55.69	dBm	PASS



Plot\_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS (eirp) ~ Generic 2G4\_09122020\_162453.png

TEST FINISHED

General Verdict

09.12.2020 16:24:53 / RT: 43 s

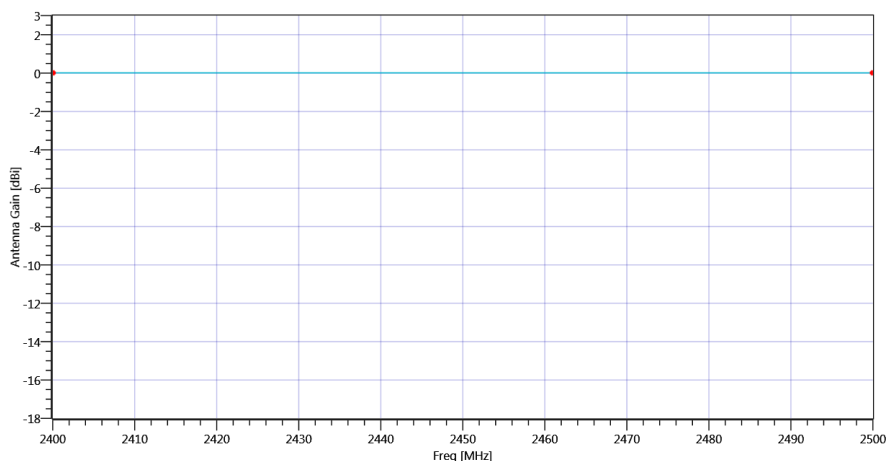
PASS

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

Test References	
TC Start	09.12.2020 16:42:26
Ambit Temp [°C]   Humidity [rel%]	24.4   22
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

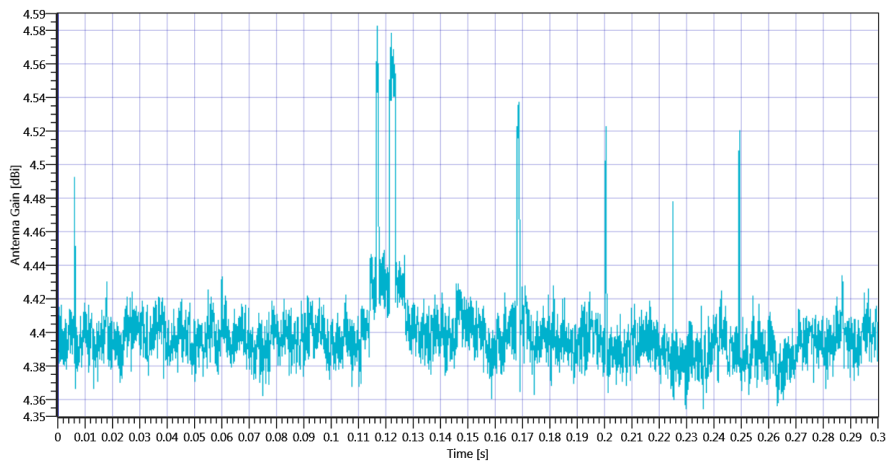
Antenna Gain Table	
Freq [MHz]	Gain [dBi]
2400	0
2500	0



Plot\_GainTable\_09122020\_164231.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

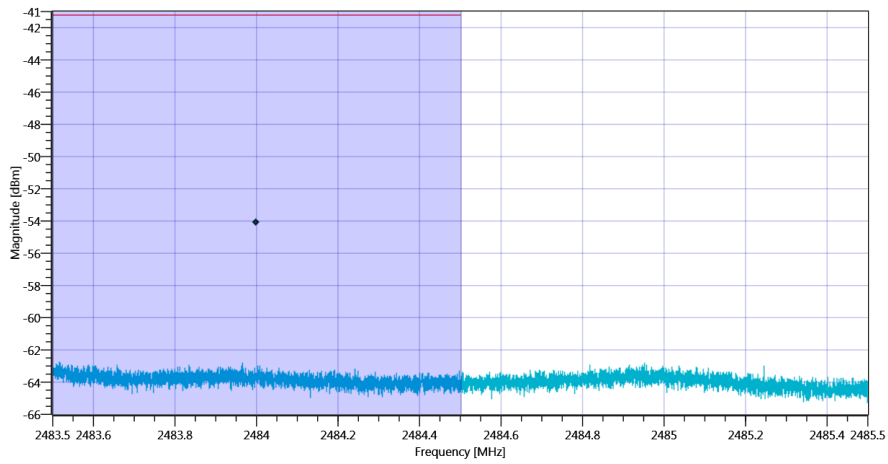


Plot\_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS (eirp) ~ Generic 2G4 2480 MHz - DutyCycle\_09122020\_164247.png

READ SA SETTINGS:	
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	14.60   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]:	0 @ 2484MHz

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Duty Cycle worst case	---	---	0	dB	INFO
Band Power Avg	---	---	-54.11	dBm	INFO
Band Power Avg DC corrected	---	---	-54.11	dBm	PASS



Plot\_FCC Part 15.247 Restricted Band Edge Conducted Avg DC corrected DTS (eirp) ~ Generic 2G4\_09122020\_164310.png

TEST FINISHED

General Verdict

09.12.2020 16:43:11 / RT: 44 s

PASS

- END OF DOCUMENT -