

# Measurement Results

No.1-1776/21-04-02\_Annex\_MR

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## Test logging

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Radio Labs

# FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ Generic 2G4

## Test References

TC Start	09.01.2023 15:11:09
Ambit Temp [°C]   Humidity [rel%]	25.4   34
System Version	3.3.3.4
Test Specification	FCC 15.247, ISED RSS247 -
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT - 20DB FHSS - Generic 2G4
Add. Information	

## EUT Common settings 2G4

Hopping supported	Yes
Burst length [ms]	1
Nominal Bandwidth [MHz]	1.5
User Interaction	No

## Test Parameter

Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False   Freq [MHz] 2403
Frequency mid to test	False   Freq [MHz] 2441
Frequency high to test	True   Freq [MHz] 2479
Auto Control enabled Power Supply   Climatic Box	No   No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

## Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI

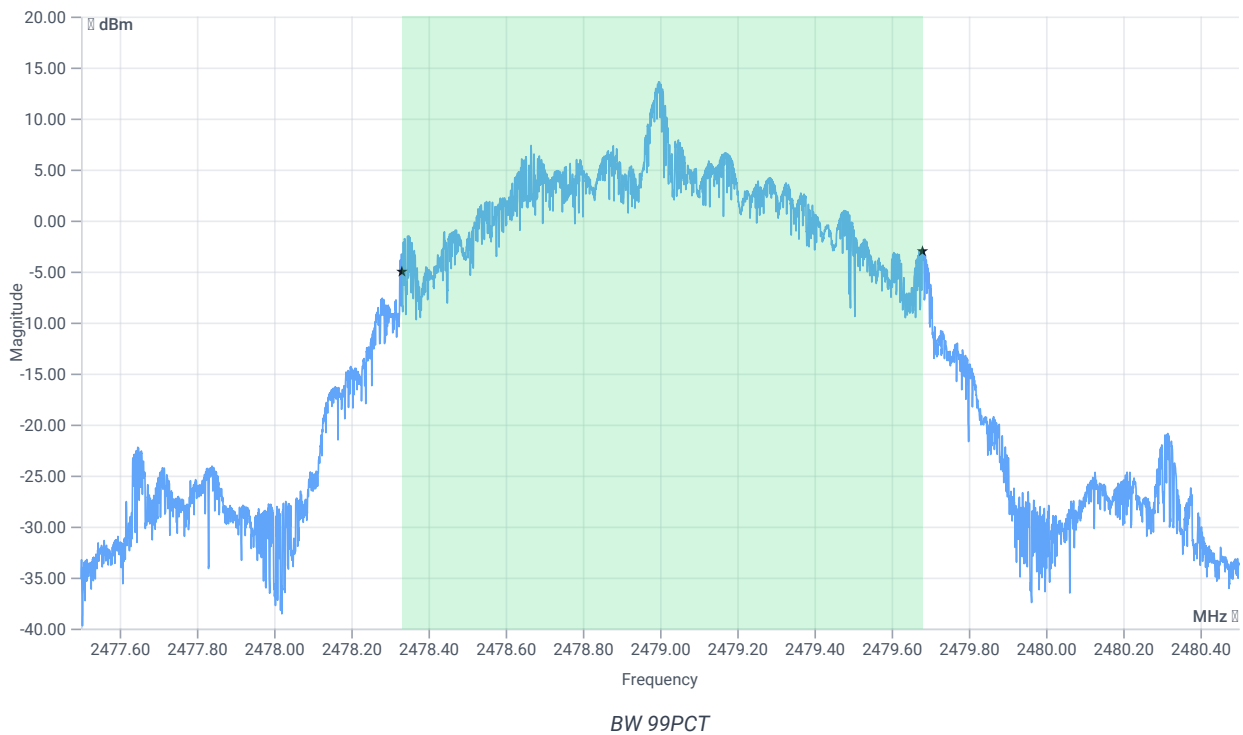
## Test at TX 2479 MHz

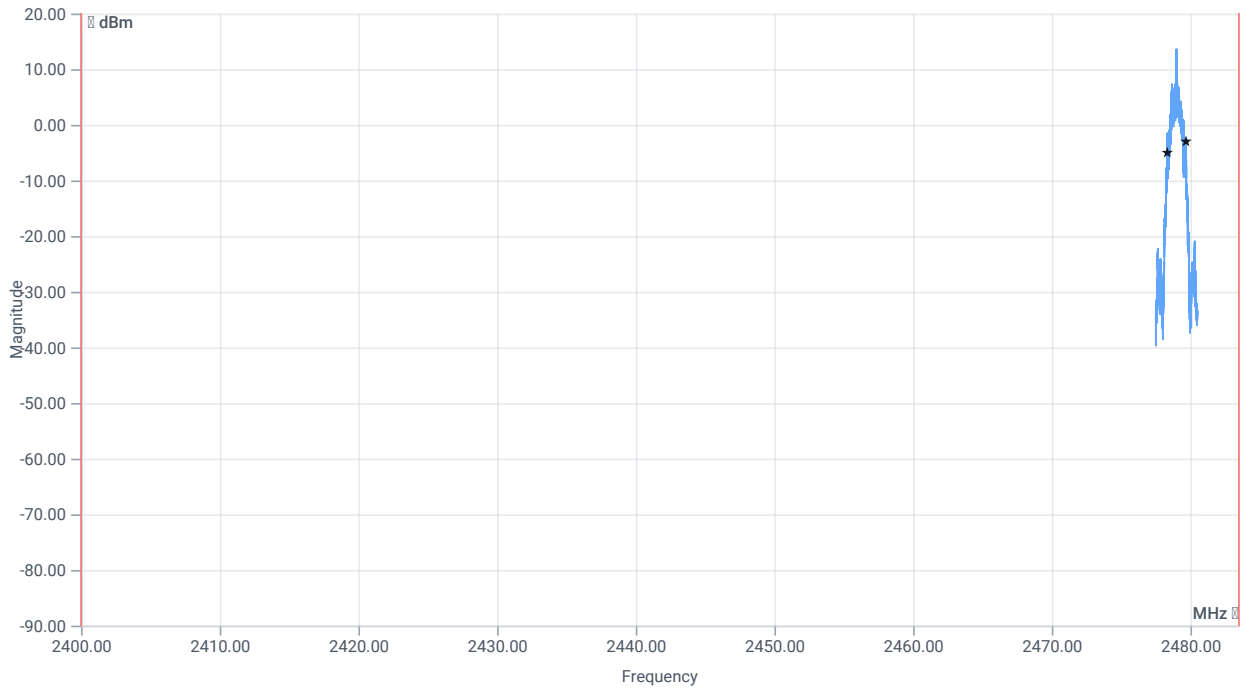
RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	13.54	dBm	INFO
Ref. Frequency	--	--	2478.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	18.54   10.15   25
Start [MHz]   Stop [MHz]	2477.500   2480.500
RBW [MHz]   VBW [MHz]	0.030000   0.100000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	25   400   10001   SWE

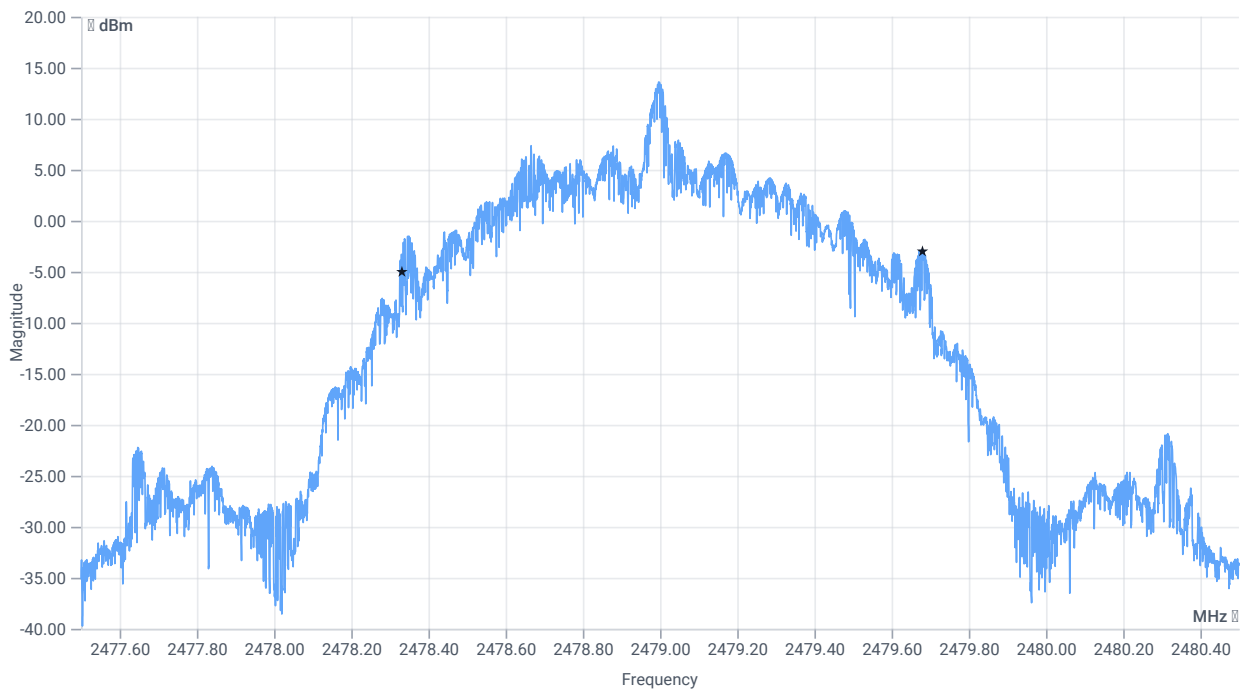




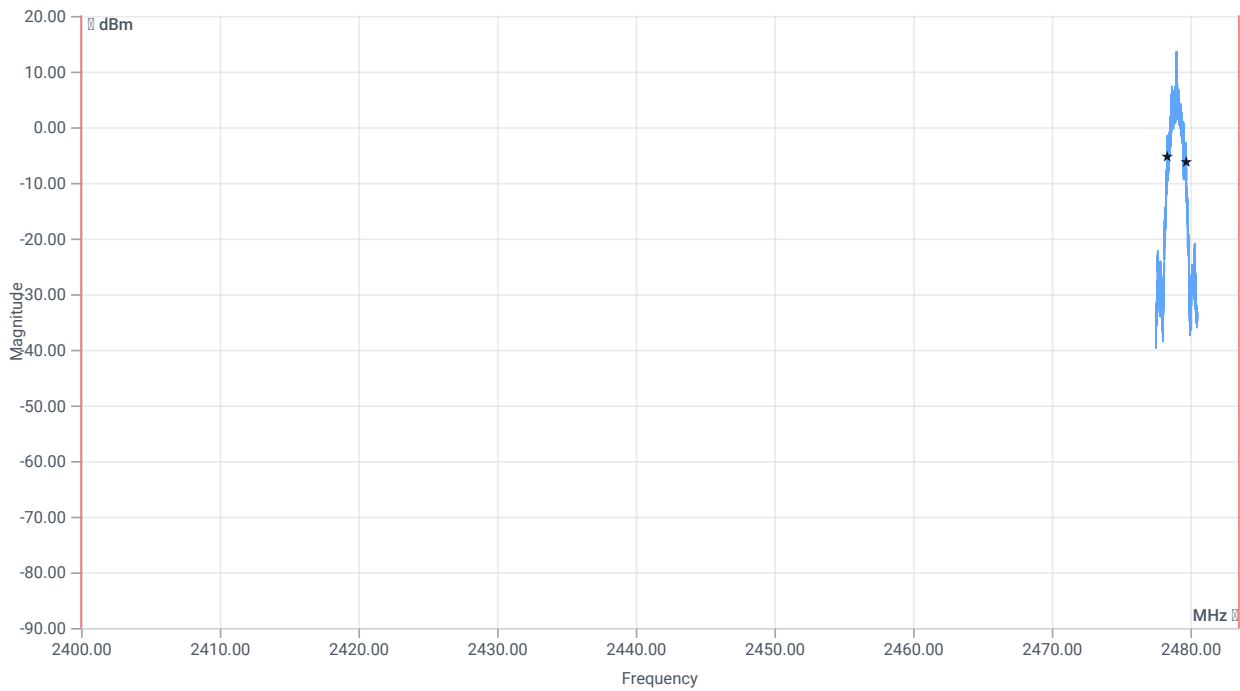
BW within Band 99PCT

## RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	--	--	1349.000	kHz	INFO
T1 99%	2400.000000	--	2478.3314	MHz	PASS
T2 99%	--	2483.500000	2479.6800	MHz	PASS



BW 20dB



BW within Band 20dB

**RESULT**

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	--	--	1375	kHz	INFO
T1 20dB	2400.000000	--	2478.3259	MHz	PASS
T2 20dB	--	2483.500000	2479.7011	MHz	PASS

Verdict

PASS

## FCC 15.247 # TX spurious conducted 20dBc ~ Generic 2G4

### Test References

TC Start	09.01.2023 14:59:42
Ambit Temp [°C]   Humidity [rel%]	25.6   34
System Version	3.3.3.4
Test Specification	FCC 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
TC Version	0.0.1
My Description	FCC 15.247 TX Emissions Conducted FHSS - Generic 2G4
Add. Information	

### EUT Common settings 2G4

Hopping supported	Yes
Burst length [ms]	1
Nominal Bandwidth [MHz]	1.5
User Interaction	No

### Test Parameter

Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False   Freq [MHz] 2403
Frequency mid to test	False   Freq [MHz] 2441
Frequency high to test	True   Freq [MHz] 2479
Auto Control enabled Power Supply   Climatic Box	No   No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

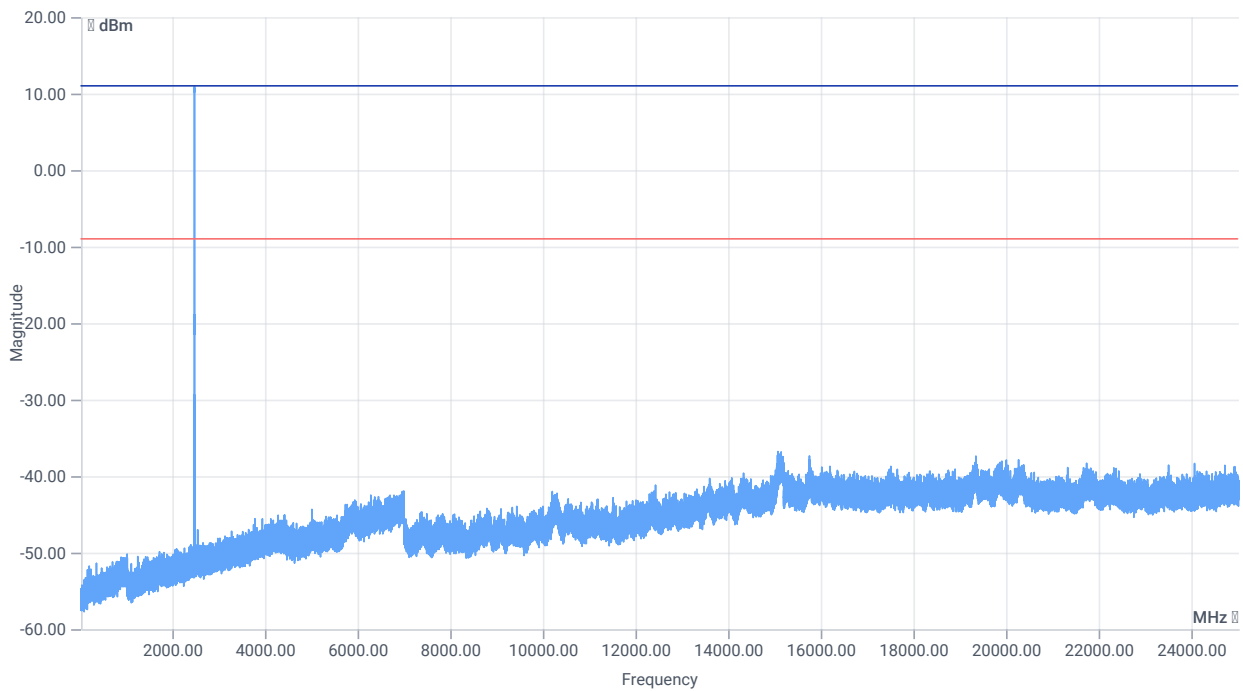
### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI

## Test at TX 2479 MHz

RESULT: Reference Power cond.

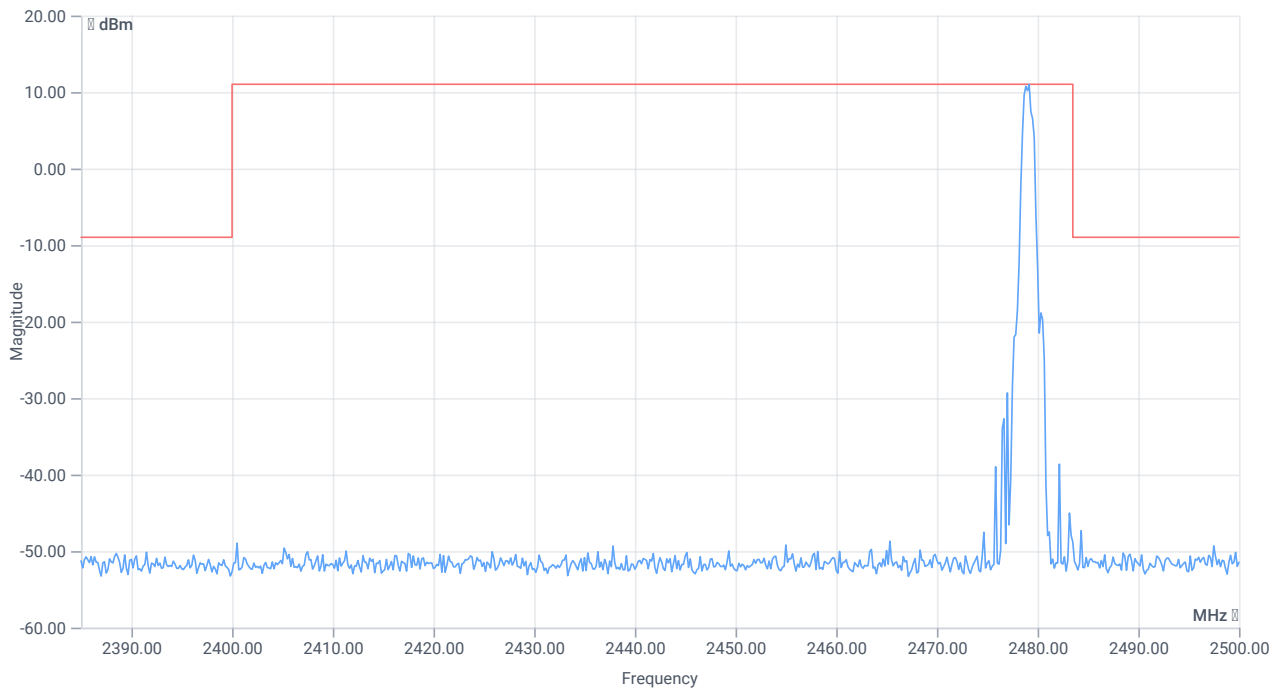
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	13.53	dBm	INFO
Ref. Frequency	--	--	2478.500	MHz	INFO



TX emissions

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	13.53   0   30
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	100   75   3001   SWE



TX emissions band zoomed

## RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2479.17 MHz	--	--	11.02	dBm	INFO
No peaks detected	--	--			PASS
Lowest margin to limit 15078.5 MHz	0	--	27.8	dB	INFO

Verdict

PASS



# FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ Generic 2G4

## Test References

TC Start	09.01.2023 14:11:39
Ambit Temp [°C]   Humidity [rel%]	25.3   34
System Version	3.3.3.4
Test Specification	FCC 15.247, ISED RSS247 -
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT - 20DB FHSS - Generic 2G4
Add. Information	

## EUT Common settings 2G4

Hopping supported	Yes
Burst length [ms]	1
Nominal Bandwidth [MHz]	1.5
User Interaction	No

## Test Parameter

Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False   Freq [MHz] 2403
Frequency mid to test	True   Freq [MHz] 2441
Frequency high to test	False   Freq [MHz] 2479
Auto Control enabled Power Supply   Climatic Box	No   No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

## Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI

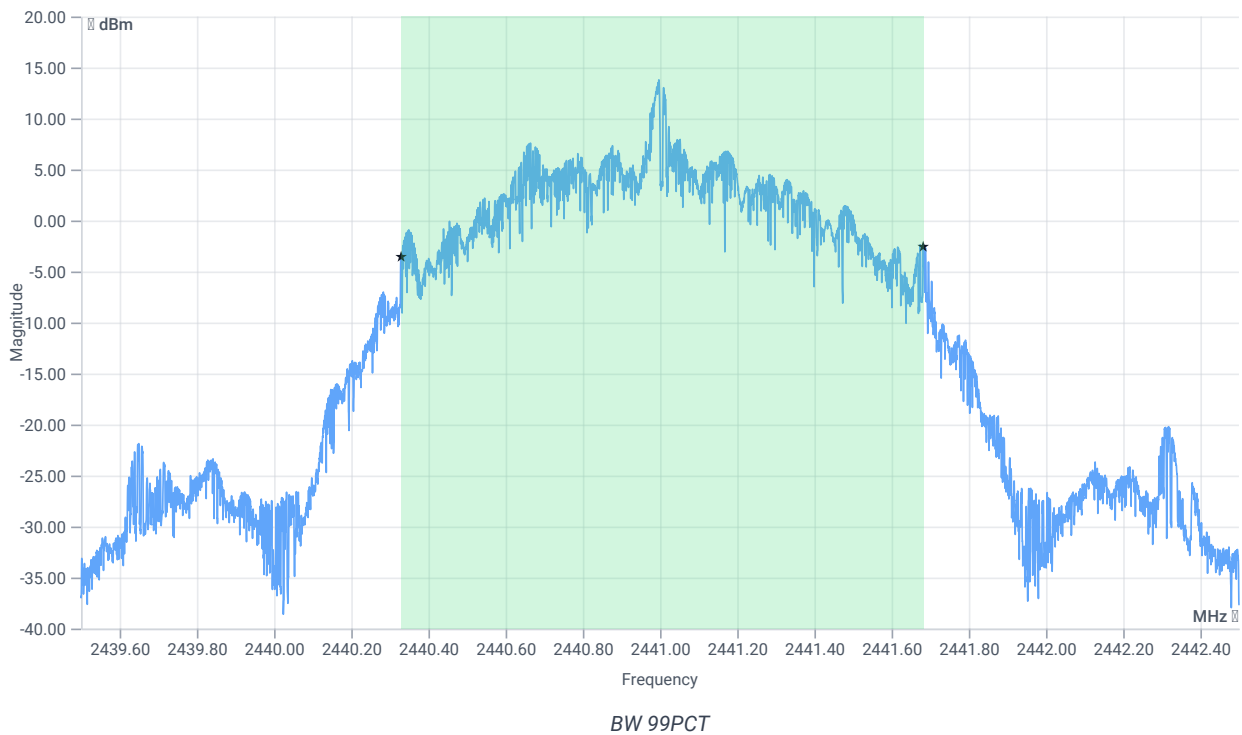
## Test at TX 2441 MHz

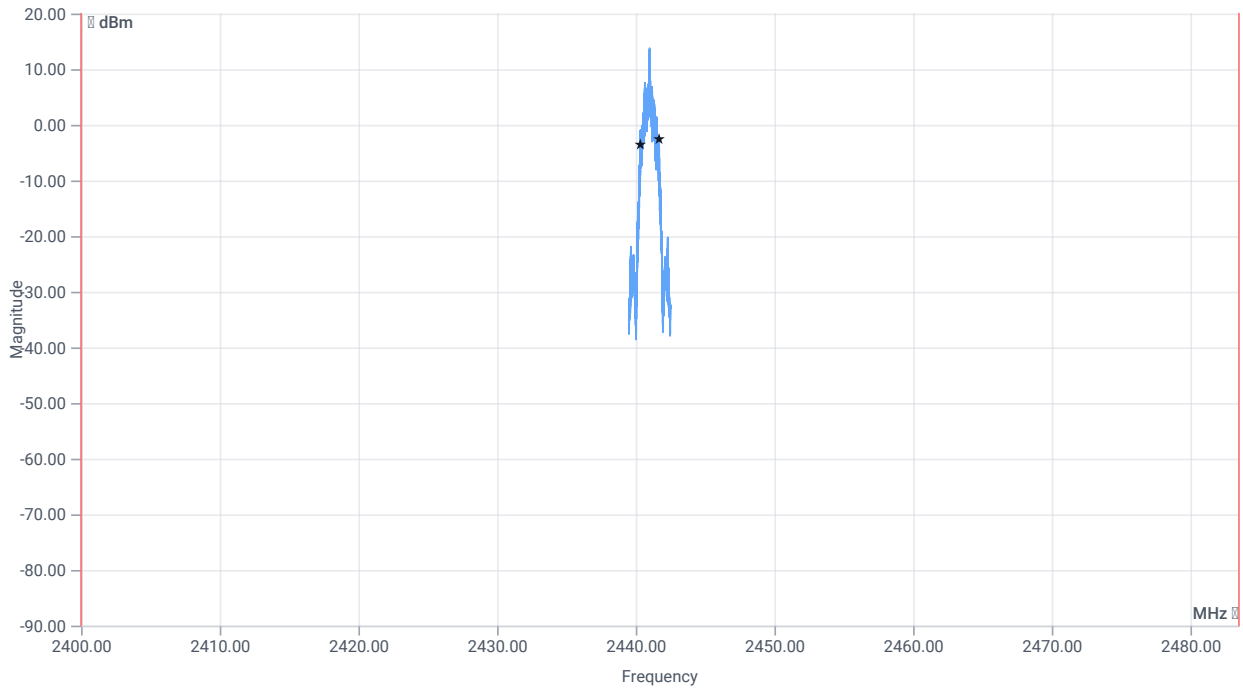
RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	13.85	dBm	INFO
Ref. Frequency	--	--	2440.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	18.85   10.1   25
Start [MHz]   Stop [MHz]	2439.500   2442.500
RBW [MHz]   VBW [MHz]	0.030000   0.100000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	25   400   10001   SWE

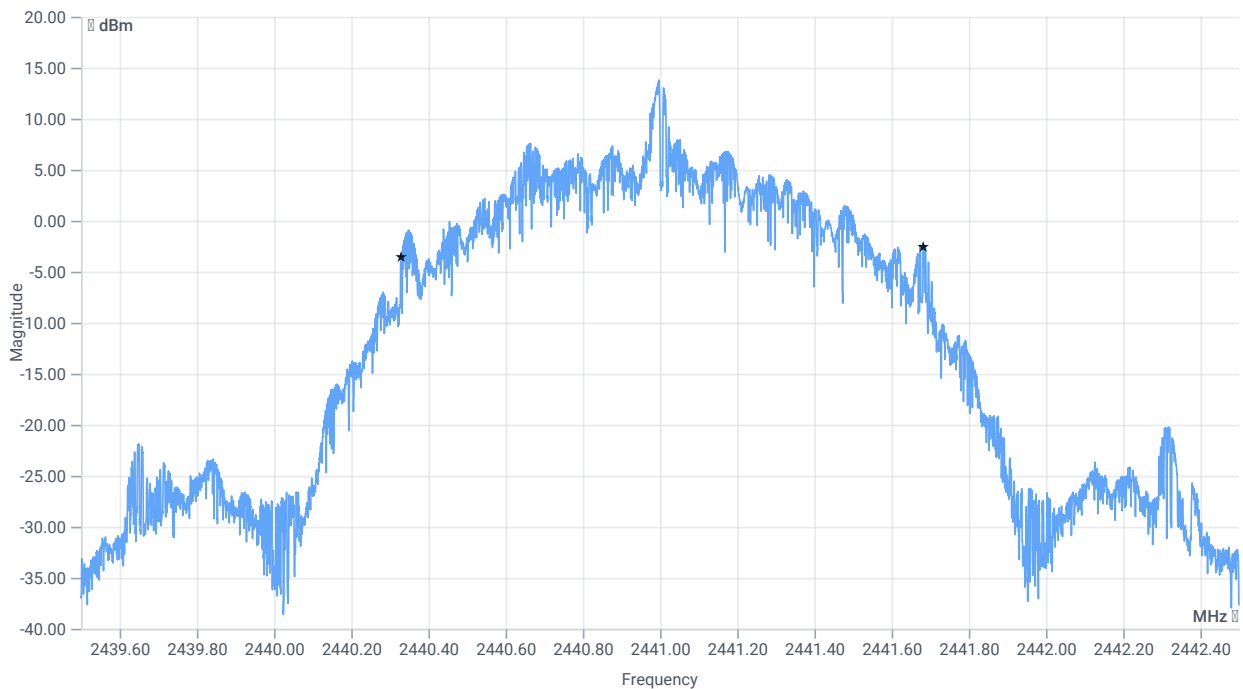




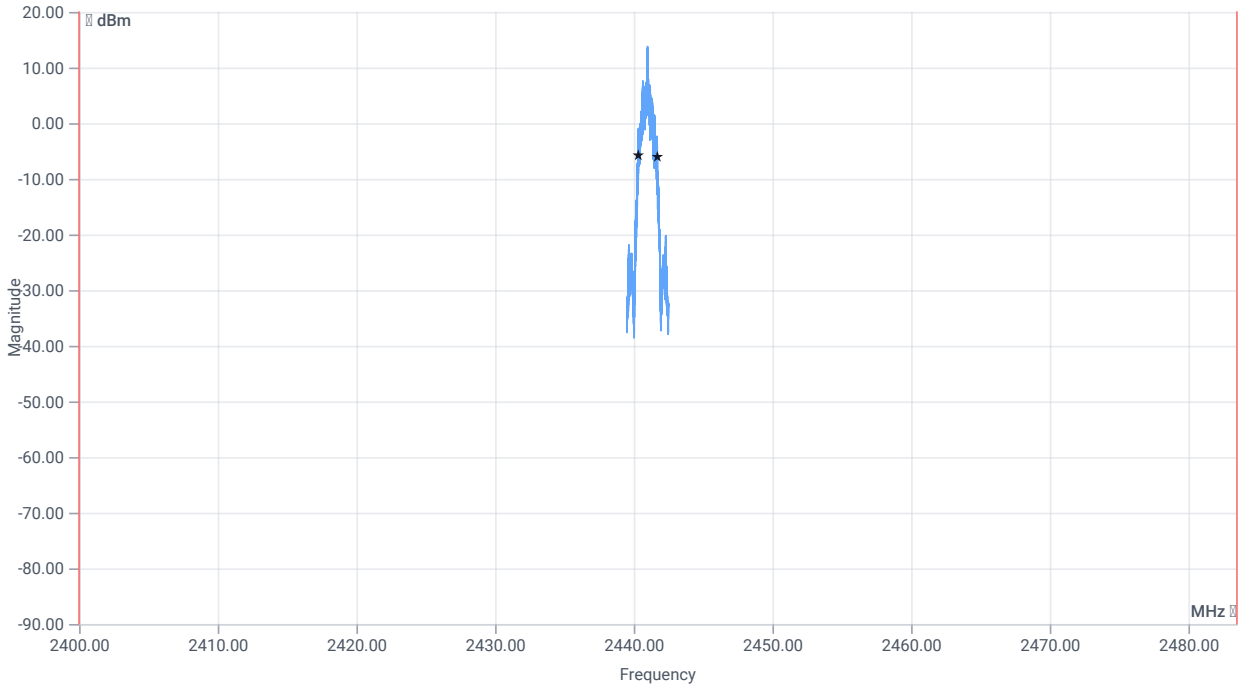
BW within Band 99PCT

## RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	--	--	1353.000	kHz	INFO
T1 99%	2400.000000	--	2440.3293	MHz	PASS
T2 99%	--	2483.500000	2441.6818	MHz	PASS



BW 20dB



BW within Band 20dB

**RESULT**

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	--	--	1376	kHz	INFO
T1 20DB	2400.000000	--	2440.3277	MHz	PASS
T2 20dB	--	2483.500000	2441.7041	MHz	PASS

Verdict

PASS

## FCC 15.247 # TX spurious conducted 20dBc ~ Generic 2G4

### Test References

TC Start	09.01.2023 14:00:12
Ambit Temp [°C]   Humidity [rel%]	25.3   34
System Version	3.3.3.4
Test Specification	FCC 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
TC Version	0.0.1
My Description	FCC 15.247 TX Emissions Conducted FHSS - Generic 2G4
Add. Information	

### EUT Common settings 2G4

Hopping supported	Yes
Burst length [ms]	1
Nominal Bandwidth [MHz]	1.5
User Interaction	No

### Test Parameter

Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False   Freq [MHz] 2403
Frequency mid to test	True   Freq [MHz] 2441
Frequency high to test	False   Freq [MHz] 2479
Auto Control enabled Power Supply   Climatic Box	No   No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

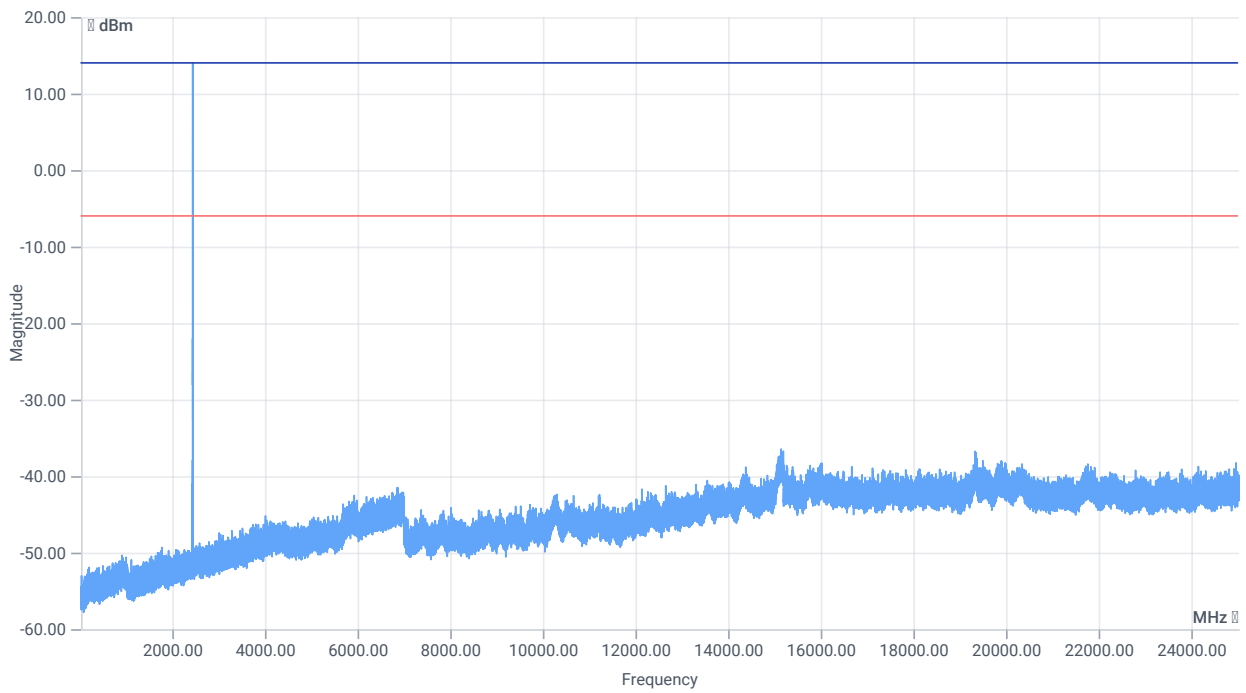
### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI

## Test at TX 2441 MHz

RESULT: Reference Power cond.

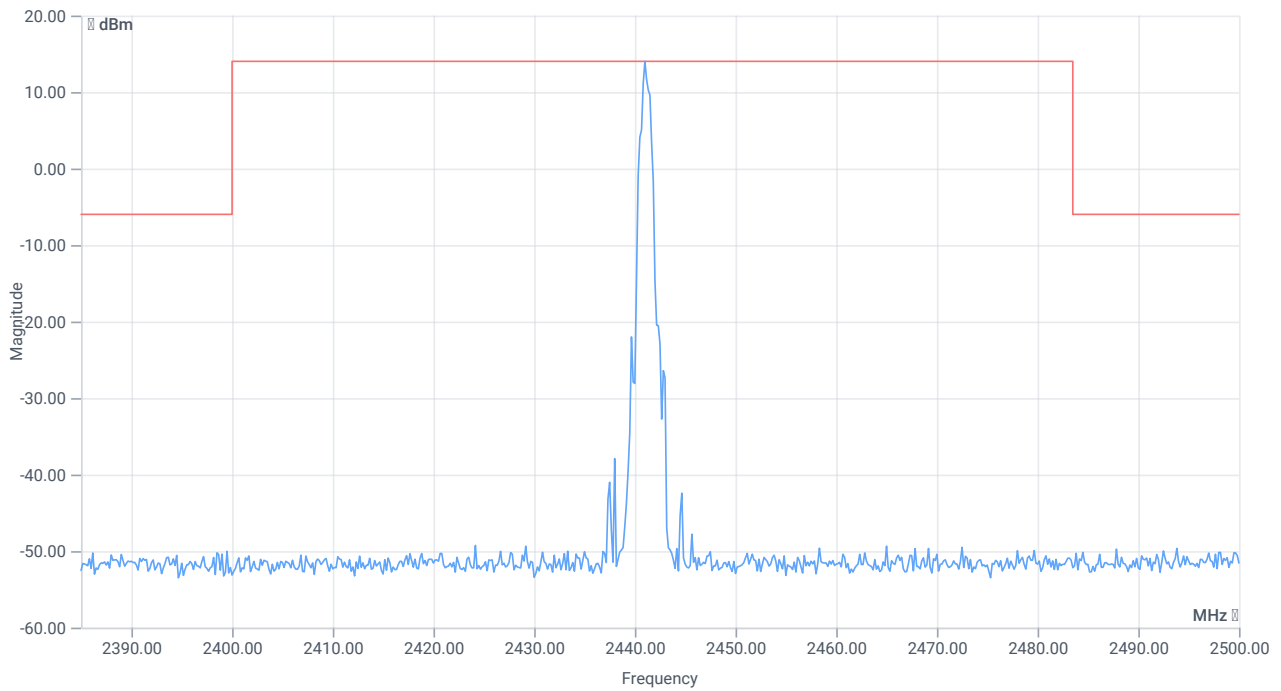
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	13.81	dBm	INFO
Ref. Frequency	--	--	2440.500	MHz	INFO



TX emissions

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	13.81   0   30
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	100   75   3001   SWE



TX emissions band zoomed

## RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2441.00 MHz	--	--	14.01	dBm	INFO
No peaks detected	--	--			PASS
Lowest margin to limit 15145.5 MHz	0	--	30.46	dB	INFO

Verdict

PASS

# FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ Generic 2G4

## Test References

TC Start	09.01.2023 13:50:29
Ambit Temp [°C]   Humidity [rel%]	25.4   34
System Version	3.3.3.4
Test Specification	FCC 15.247, ISED RSS247 -
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT - 20DB FHSS - Generic 2G4
Add. Information	

## EUT Common settings 2G4

Hopping supported	Yes
Burst length [ms]	1
Nominal Bandwidth [MHz]	1.5
User Interaction	No

## Test Parameter

Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2403
Frequency mid to test	False   Freq [MHz] 2441
Frequency high to test	False   Freq [MHz] 2479
Auto Control enabled Power Supply   Climatic Box	No   No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

## Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI



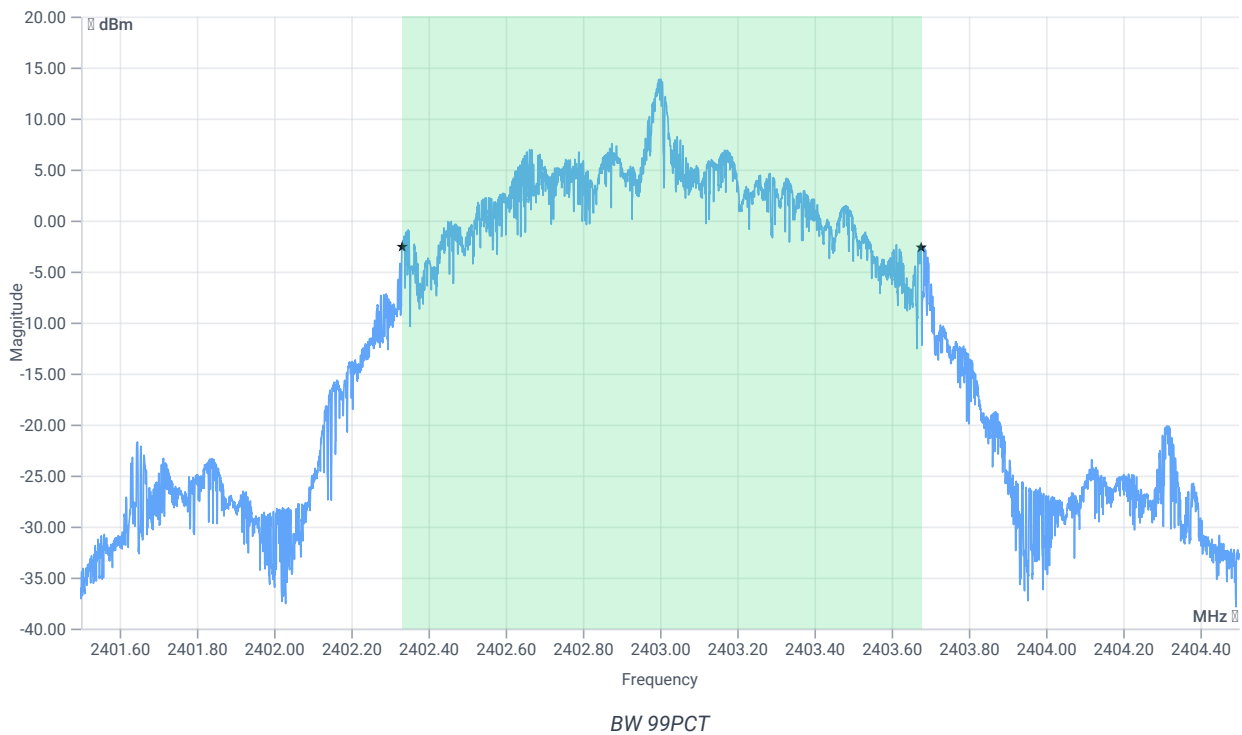
## Test at TX 2403 MHz

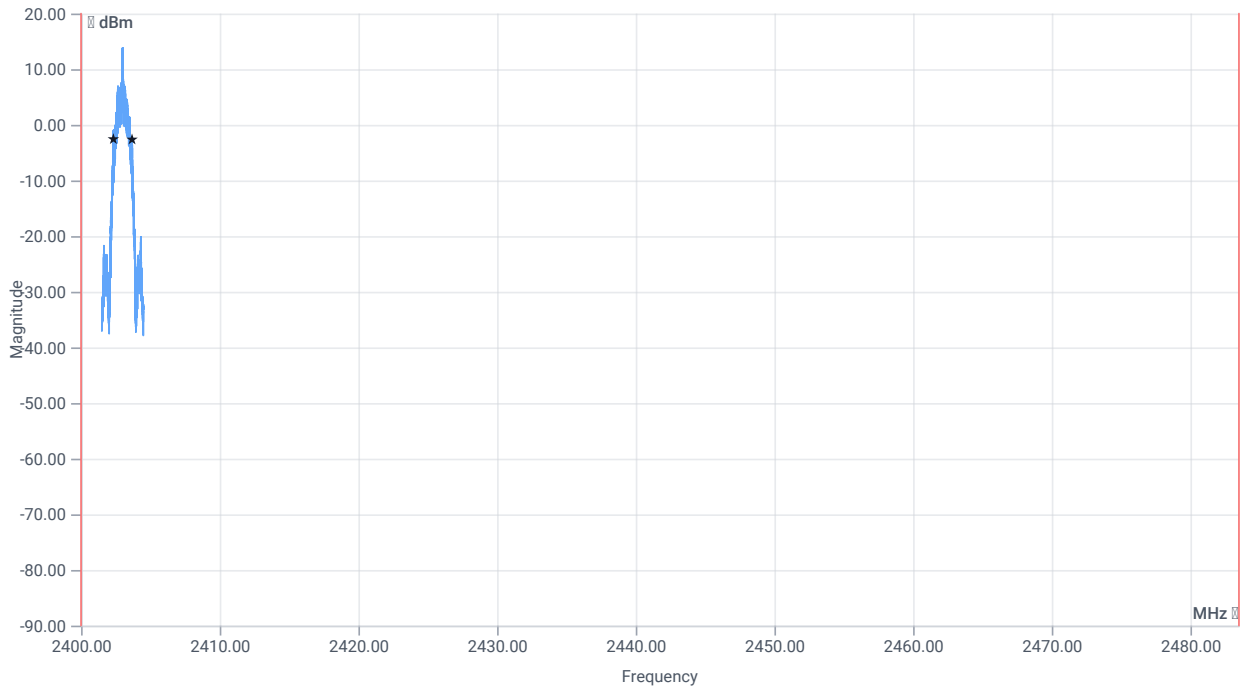
RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	14.02	dBm	INFO
Ref. Frequency	--	--	2402.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	19.02   10.09   25
Start [MHz]   Stop [MHz]	2401.500   2404.500
RBW [MHz]   VBW [MHz]	0.030000   0.100000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	25   400   10001   SWE

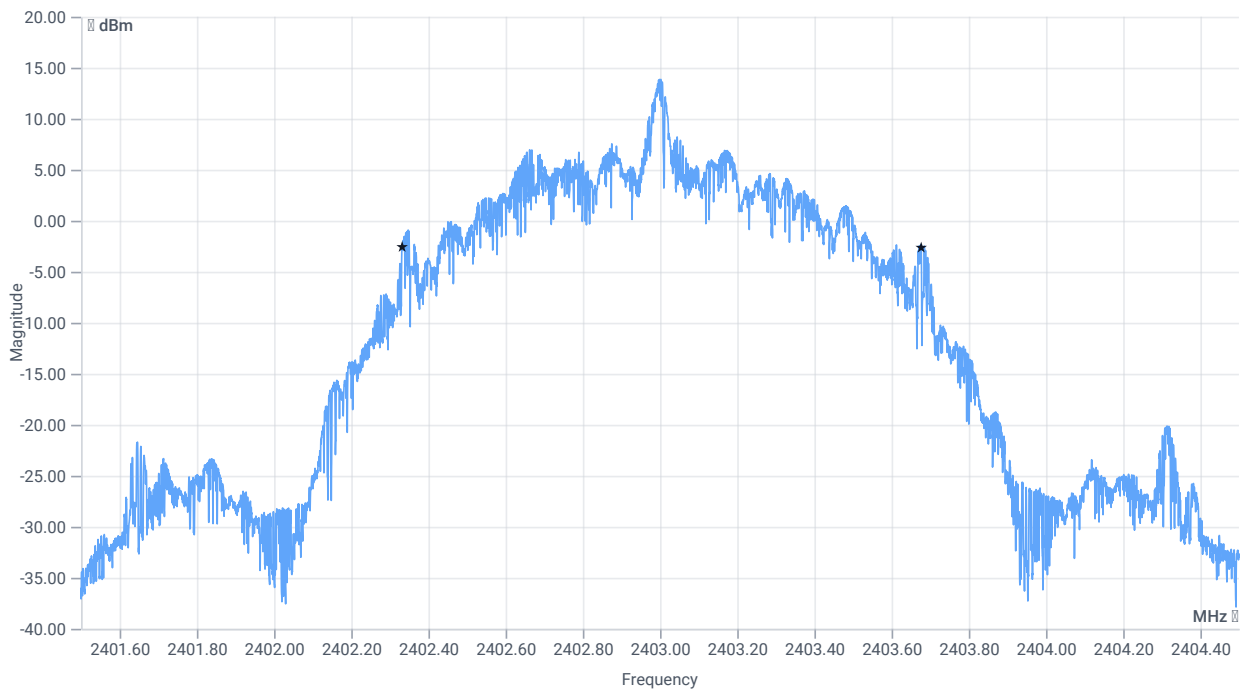




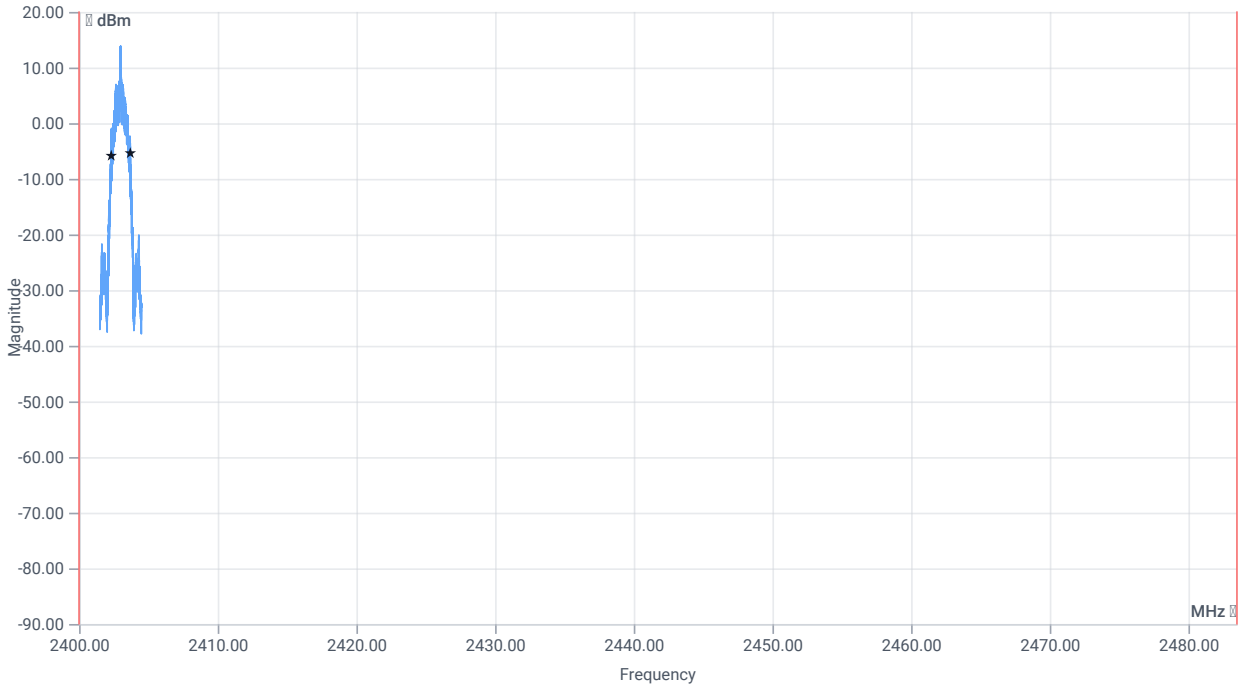
BW within Band 99PCT

## RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	--	--	1345.000	kHz	INFO
T1 99%	2400.000000	--	2402.3320	MHz	PASS
T2 99%	--	2483.500000	2403.6767	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	--	--	1376	kHz	INFO
T1 20dB	2400.000000	--	2402.3208	MHz	PASS
T2 20dB	--	2483.500000	2403.6966	MHz	PASS

Verdict

PASS

## FCC 15.247 # TX spurious conducted 20dBc ~ Generic 2G4

### Test References

TC Start	09.01.2023 13:39:03
Ambit Temp [°C]   Humidity [rel%]	25.4   34
System Version	3.3.3.4
Test Specification	FCC 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
TC Version	0.0.1
My Description	FCC 15.247 TX Emissions Conducted FHSS - Generic 2G4
Add. Information	

### EUT Common settings 2G4

Hopping supported	Yes
Burst length [ms]	1
Nominal Bandwidth [MHz]	1.5
User Interaction	No

### Test Parameter

Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2403
Frequency mid to test	False   Freq [MHz] 2441
Frequency high to test	False   Freq [MHz] 2479
Auto Control enabled Power Supply   Climatic Box	No   No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

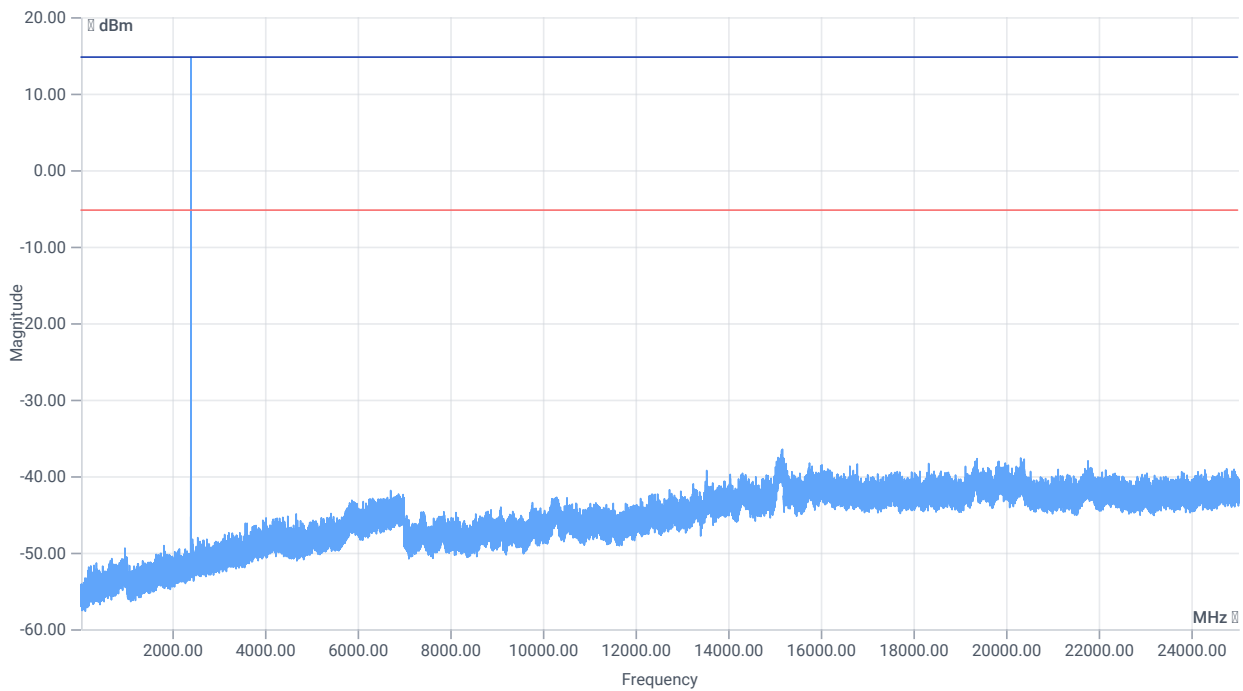
### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI

## Test at TX 2403 MHz

RESULT: Reference Power cond.

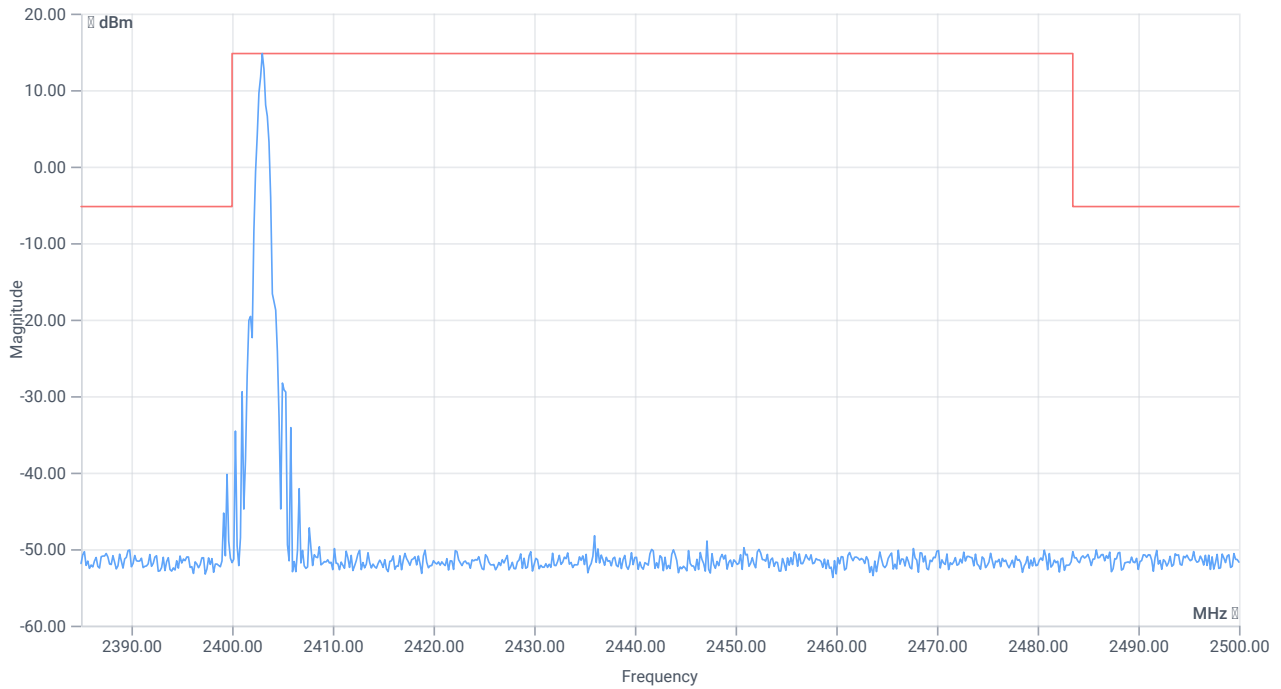
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	14.05	dBm	INFO
Ref. Frequency	--	--	2402.500	MHz	INFO



TX emissions

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	14.05   0   30
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	100   75   3001   SWE



TX emissions band zoomed

## RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2403.00 MHz	--	--	14.77	dBm	INFO
No peaks detected	--	--			PASS
Lowest margin to limit 15173.333 MHz	0	--	31.25	dB	INFO

## Verdict

PASS

## FCC 15.247 # Maximum peak conducted output power FHSS ~ Generic 2G4

### Test References

TC Start	09.01.2023 13:35:08
Ambit Temp [°C]   Humidity [rel%]	25.5   35
System Version	3.3.3.4
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Conducted FHSS - Generic 2G4
Add. Information	

### EUT Common settings 2G4

Hopping supported	Yes
Burst length [ms]	1
Nominal Bandwidth [MHz]	1.5
User Interaction	No

### Test Parameter

Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2403
Frequency mid to test	False   Freq [MHz] 2441
Frequency high to test	False   Freq [MHz] 2479
Auto Control enabled Power Supply   Climatic Box	No   No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70  
 Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI

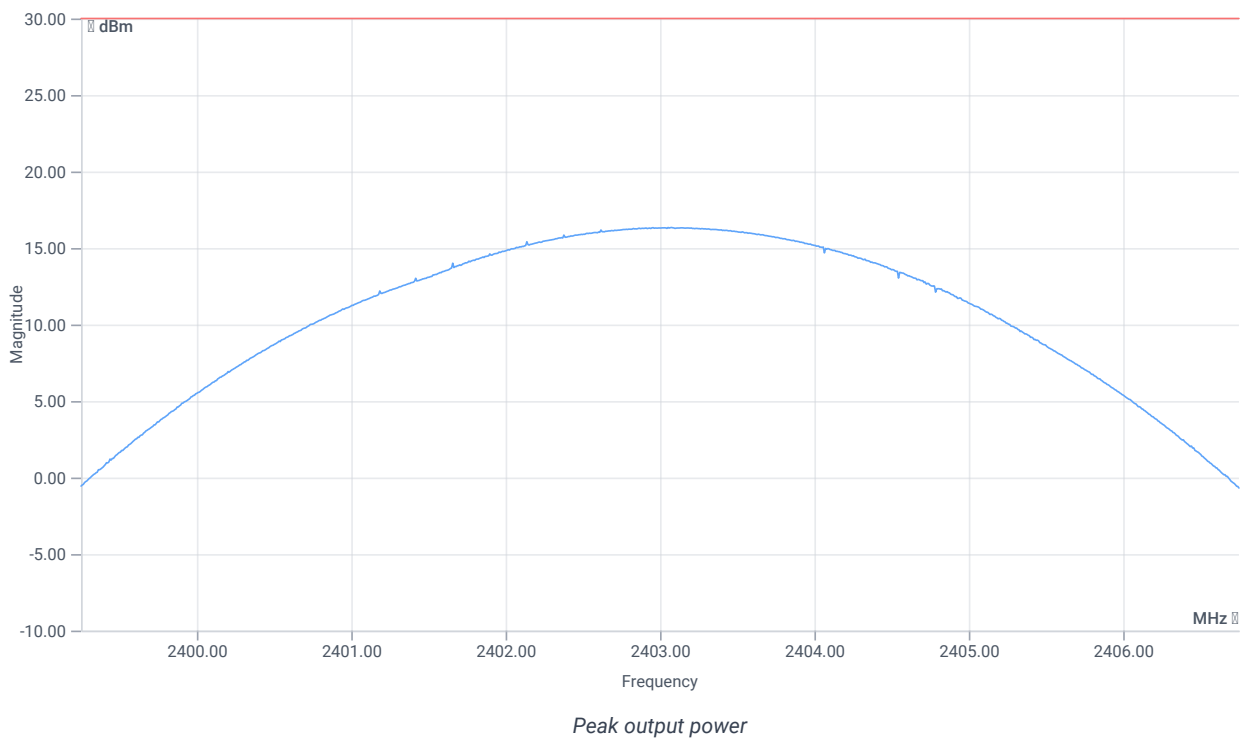
## Test at TX 2403 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	14.06	dBm	INFO
Ref. Frequency	--	--	2402.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	24.06   10.09   30
Start [MHz]   Stop [MHz]	2399.250   2406.750
RBW [MHz]   VBW [MHz]	3.000000   10.000000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	500   30   1001   SWE



### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	--	30.00	16.34	dBm	PASS
Peak Power	--	1000	43.052661	mW	PASS
Frequency at Peak	--	--	2403.052	MHz	INFO



Verdict

PASS

## FCC 15.247 # Maximum peak conducted output power FHSS ~ Generic 2G4

### Test References

TC Start	09.01.2023 13:33:58
Ambit Temp [°C]   Humidity [rel%]	25.4   35
System Version	3.3.3.4
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Conducted FHSS - Generic 2G4
Add. Information	

### EUT Common settings 2G4

Hopping supported	Yes
Burst length [ms]	1
Nominal Bandwidth [MHz]	1.5
User Interaction	No

### Test Parameter

Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False   Freq [MHz] 2403
Frequency mid to test	True   Freq [MHz] 2441
Frequency high to test	False   Freq [MHz] 2479
Auto Control enabled Power Supply   Climatic Box	No   No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70  
 Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI

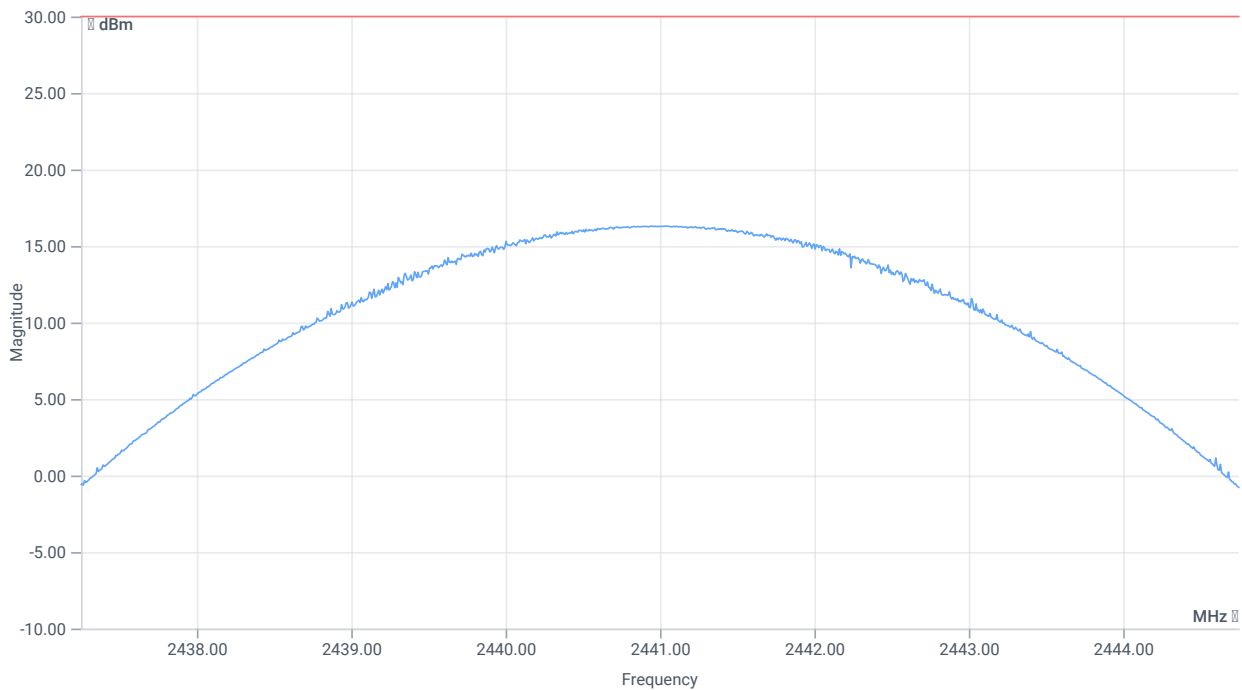
## Test at TX 2441 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	13.84	dBm	INFO
Ref. Frequency	--	--	2440.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	23.84   10.1   30
Start [MHz]   Stop [MHz]	2437.250   2444.750
RBW [MHz]   VBW [MHz]	3.000000   10.000000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	500   30   1001   SWE



### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	--	30.00	16.3	dBm	PASS
Peak Power	--	1000	42.657952	mW	PASS
Frequency at Peak	--	--	2441.038	MHz	INFO

Verdict

PASS

## FCC 15.247 # Maximum peak conducted output power FHSS ~ Generic 2G4

### Test References

TC Start	09.01.2023 13:33:03
Ambit Temp [°C]   Humidity [rel%]	25.4   35
System Version	3.3.3.4
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Conducted FHSS - Generic 2G4
Add. Information	

### EUT Common settings 2G4

Hopping supported	Yes
Burst length [ms]	1
Nominal Bandwidth [MHz]	1.5
User Interaction	No

### Test Parameter

Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False   Freq [MHz] 2403
Frequency mid to test	False   Freq [MHz] 2441
Frequency high to test	True   Freq [MHz] 2479
Auto Control enabled Power Supply   Climatic Box	No   No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI

## Test at TX 2479 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	13.55	dBm	INFO
Ref. Frequency	--	--	2478.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	23.55   10.15   30
Start [MHz]   Stop [MHz]	2475.250   2482.750
RBW [MHz]   VBW [MHz]	3.000000   10.000000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	500   30   1001   SWE



### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	--	30.00	15.8	dBm	PASS
Peak Power	--	1000	38.01894	mW	PASS
Frequency at Peak	--	--	2478.91	MHz	INFO

Verdict

PASS

## FCC 15.247 # Maximum peak conducted output power FHSS ~ Generic 2G4

### Test References

TC Start	09.01.2023 13:31:43
Ambit Temp [°C]   Humidity [rel%]	25.4   35
System Version	3.3.3.4
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Conducted FHSS - Generic 2G4
Add. Information	

### EUT Common settings 2G4

Hopping supported	Yes
Burst length [ms]	1
Nominal Bandwidth [MHz]	1.5
User Interaction	No

### Test Parameter

Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False   Freq [MHz] 2403
Frequency mid to test	False   Freq [MHz] 2441
Frequency high to test	True   Freq [MHz] 2479
Auto Control enabled Power Supply   Climatic Box	No   No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI



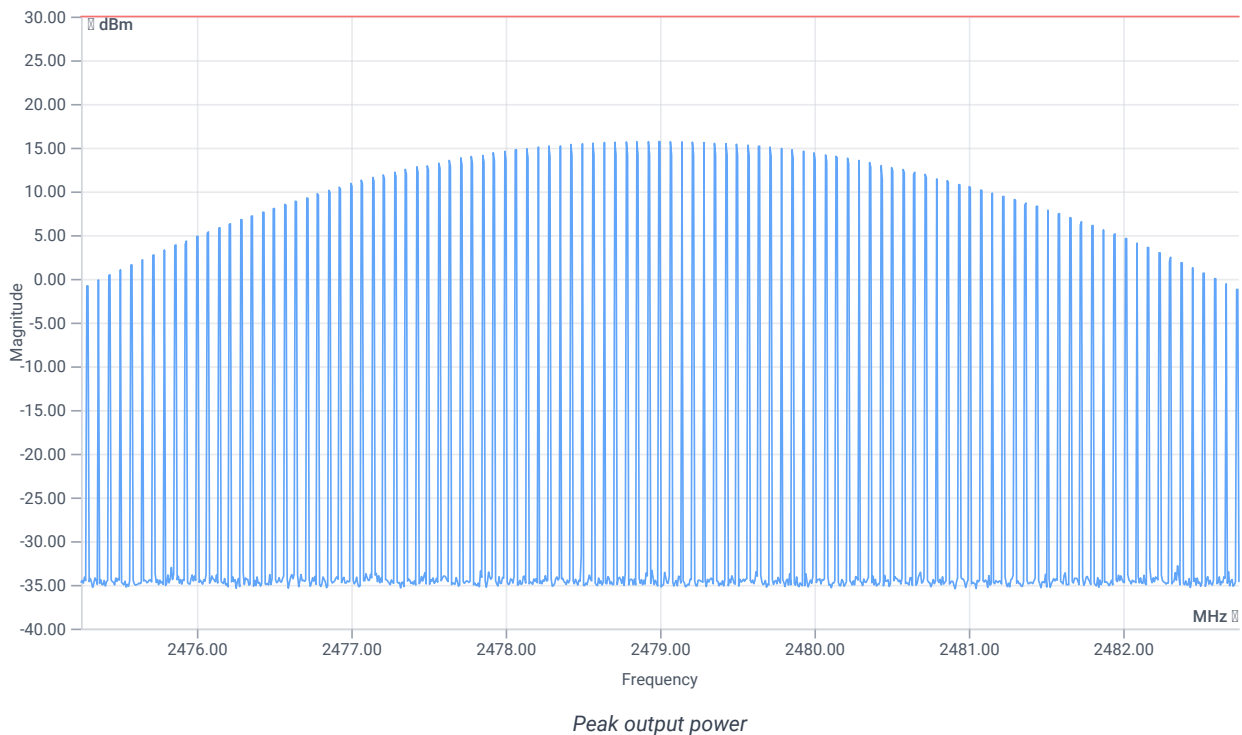
## Test at TX 2479 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	13.39	dBm	INFO
Ref. Frequency	---	---	2479.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	23.39   10.15   30
Start [MHz]   Stop [MHz]	2475.250   2482.750
RBW [MHz]   VBW [MHz]	3.000000   10.000000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	500   30   1001   SWE



### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	15.7	dBm	PASS
Peak Power	---	1000	37.153523	mW	PASS
Frequency at Peak	---	---	2478.992	MHz	INFO

Verdict

PASS

## FCC 15.247 # Maximum peak conducted output power FHSS ~ Generic 2G4

### Test References

TC Start	09.01.2023 13:30:40
Ambit Temp [°C]   Humidity [rel%]	25.4   35
System Version	3.3.3.4
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Conducted FHSS - Generic 2G4
Add. Information	

### EUT Common settings 2G4

Hopping supported	Yes
Burst length [ms]	1
Nominal Bandwidth [MHz]	1.5
User Interaction	No

### Test Parameter

Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False   Freq [MHz] 2403
Frequency mid to test	True   Freq [MHz] 2441
Frequency high to test	False   Freq [MHz] 2479
Auto Control enabled Power Supply   Climatic Box	No   No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70  
 Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI

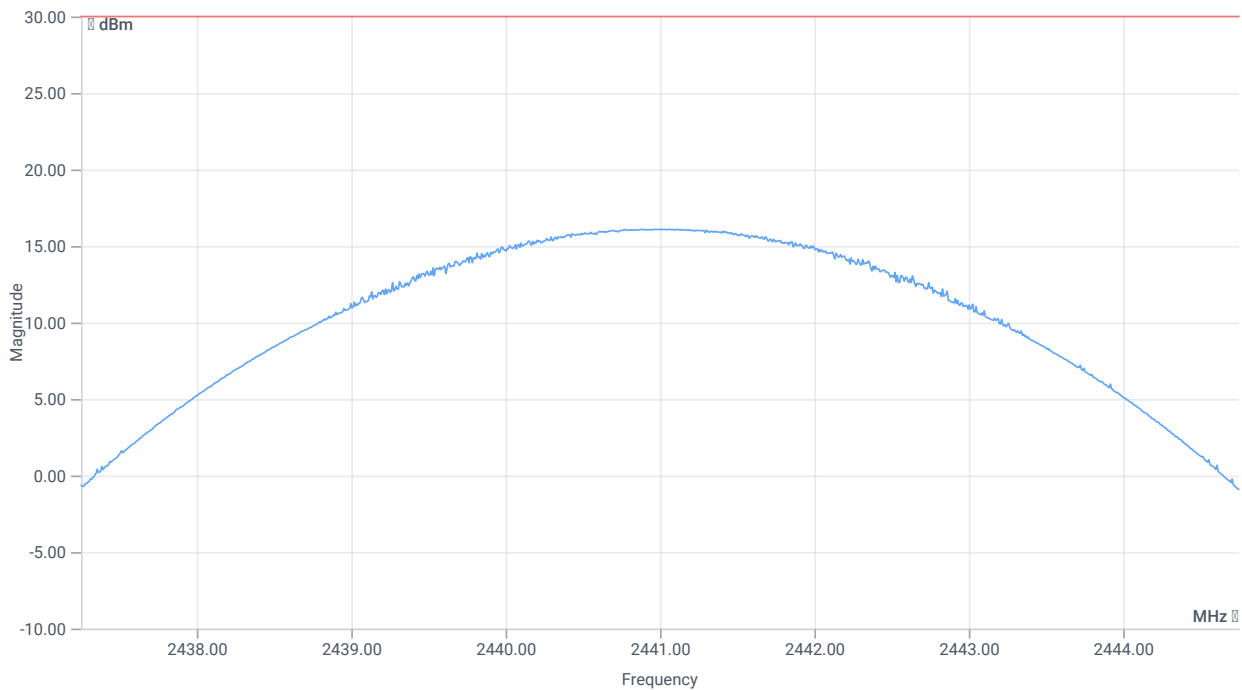
## Test at TX 2441 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	13.81	dBm	INFO
Ref. Frequency	--	--	2440.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	23.81   10.1   30
Start [MHz]   Stop [MHz]	2437.250   2444.750
RBW [MHz]   VBW [MHz]	3.000000   10.000000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	500   30   1001   SWE



### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	--	30.00	16.1	dBm	PASS
Peak Power	--	1000	40.738028	mW	PASS
Frequency at Peak	--	--	2441.067	MHz	INFO

Verdict

PASS

## FCC 15.247 # Maximum peak conducted output power FHSS ~ Generic 2G4

### Test References

TC Start	09.01.2023 13:28:59
Ambit Temp [°C]   Humidity [rel%]	25.4   34
System Version	3.3.3.4
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Conducted FHSS - Generic 2G4
Add. Information	

### EUT Common settings 2G4

Hopping supported	Yes
Burst length [ms]	1
Nominal Bandwidth [MHz]	1.5
User Interaction	No

### Test Parameter

Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2403
Frequency mid to test	False   Freq [MHz] 2441
Frequency high to test	False   Freq [MHz] 2479
Auto Control enabled Power Supply   Climatic Box	No   No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70  
 Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI

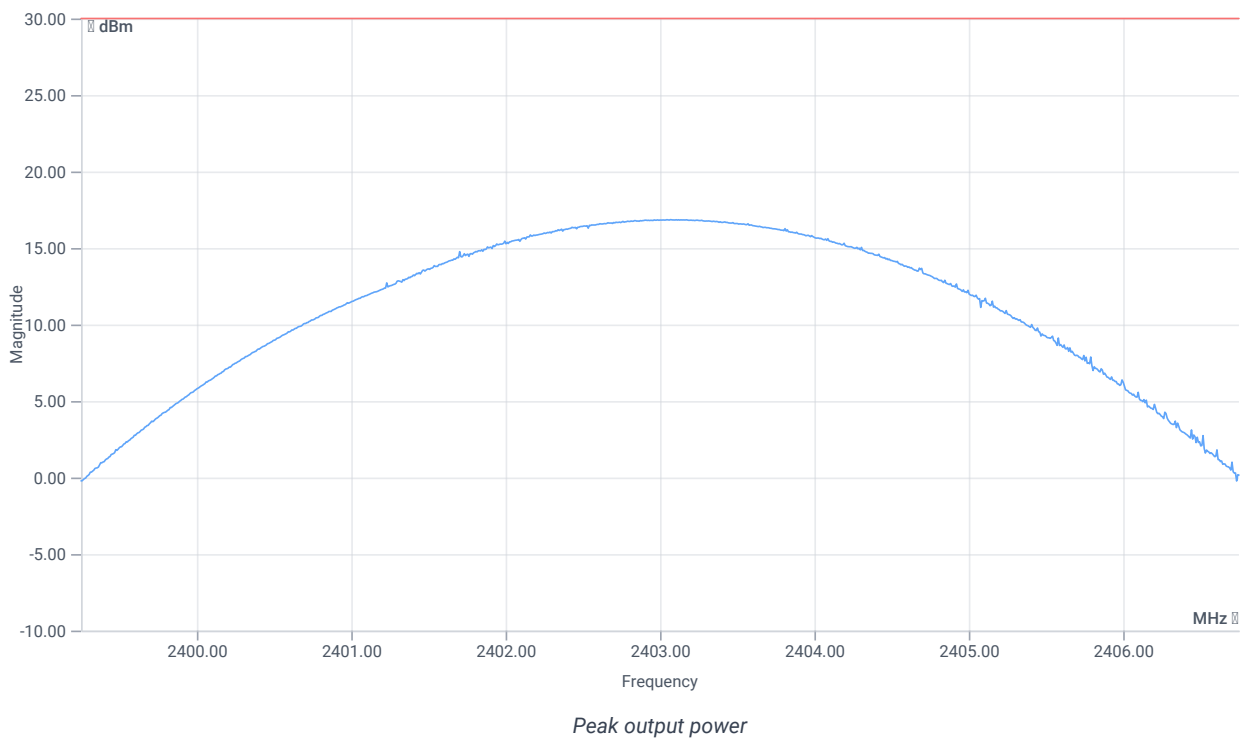
## Test at TX 2403 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	14.31	dBm	INFO
Ref. Frequency	--	--	2402.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	24.31   10.09   30
Start [MHz]   Stop [MHz]	2399.250   2406.750
RBW [MHz]   VBW [MHz]	3.000000   10.000000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	500   30   1001   SWE



### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	--	30.00	16.85	dBm	PASS
Peak Power	--	1000	48.417237	mW	PASS
Frequency at Peak	--	--	2403.067	MHz	INFO

Verdict

PASS



## # Hardcopy SA ~

### Test References

TC Start	16.01.2023 13:56:12
Ambit Temp [°C]   Humidity [rel%]	25.1   30
System Version	3.3.3.4
Test Specification	-
Test Method	
TC Version	0.0.1
My Description	Hardcopy Spectrum Analyzer
Add. Information	

### Test Parameter

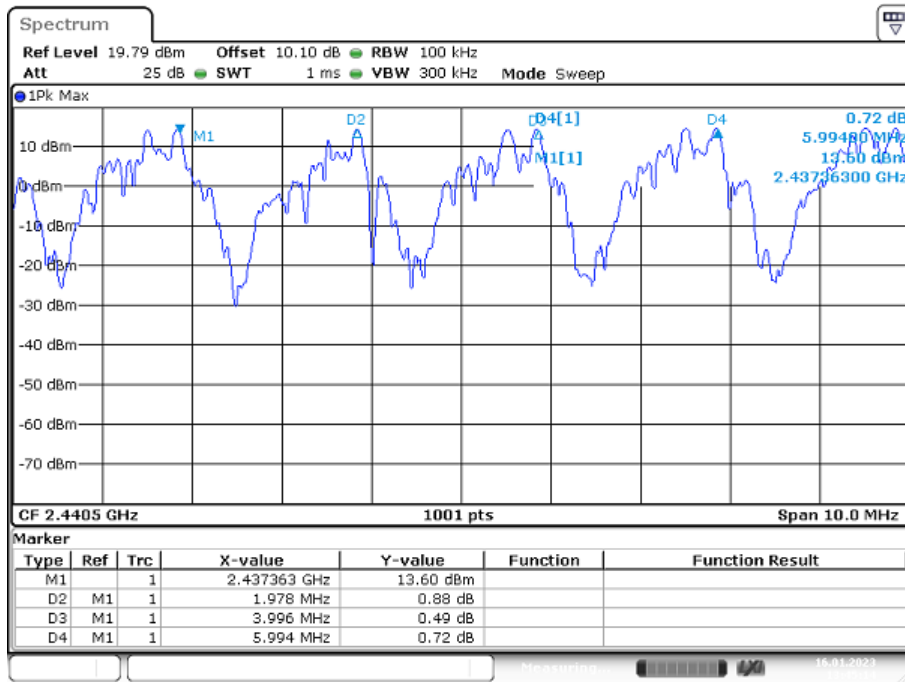
Technology to test	
Switched Path	None

### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
---

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	19.79   10.1   25
Start [MHz]   Stop [MHz]	2435.500   2445.500
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	1   0   1001   SWE



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# Hardcopy SA ~

## RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Marker Readout					
Marker 1 Freq.	---	---	2437.363000	MHz	INFO

## RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Delta Marker Readout					
Delta Marker 2 Freq.	---	---	1.978000	MHz	INFO
Delta Marker 2 Level	---	---	0.883	dB	INFO
Delta Marker 3 Freq.	---	---	3.996000	MHz	INFO
Delta Marker 3 Level	---	---	0.491	dB	INFO
Delta Marker 4 Freq.	---	---	5.994000	MHz	INFO
Delta Marker 4 Level	---	---	0.718	dB	INFO

Verdict

INFO

## # Hardcopy SA ~

### Test References

TC Start	16.01.2023 13:57:27
Ambit Temp [°C]   Humidity [rel%]	25.1   30
System Version	3.3.3.4
Test Specification	-
Test Method	
TC Version	0.0.1
My Description	Hardcopy Spectrum Analyzer
Add. Information	

### Test Parameter

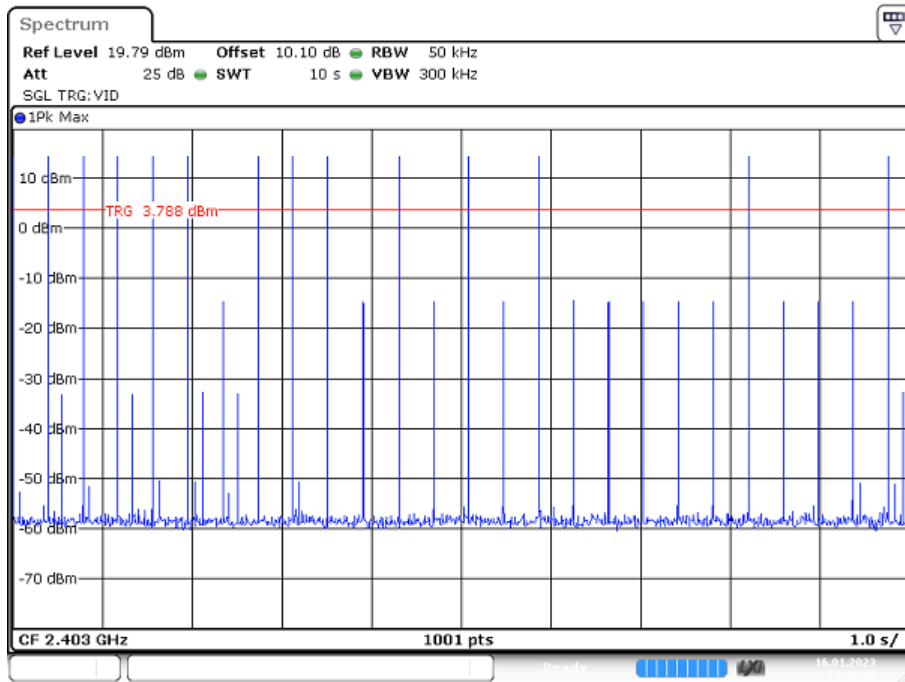
Technology to test	
Switched Path	None

### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
---

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	19.79   10.1   25
Start [MHz]   Stop [MHz]	2403.000   2403.000
RBW [MHz]   VBW [MHz]	0.050000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	10000   0   1001   SWE



Date: 16.JAN.2023 13:46:29

# Hardcopy SA ~

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Marker Readout					

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Delta Marker Readout					

Verdict

INFO

## # Hardcopy SA ~

### Test References

TC Start	16.01.2023 13:58:01
Ambit Temp [°C]   Humidity [rel%]	25.1   30
System Version	3.3.3.4
Test Specification	-
Test Method	
TC Version	0.0.1
My Description	Hardcopy Spectrum Analyzer
Add. Information	

### Test Parameter

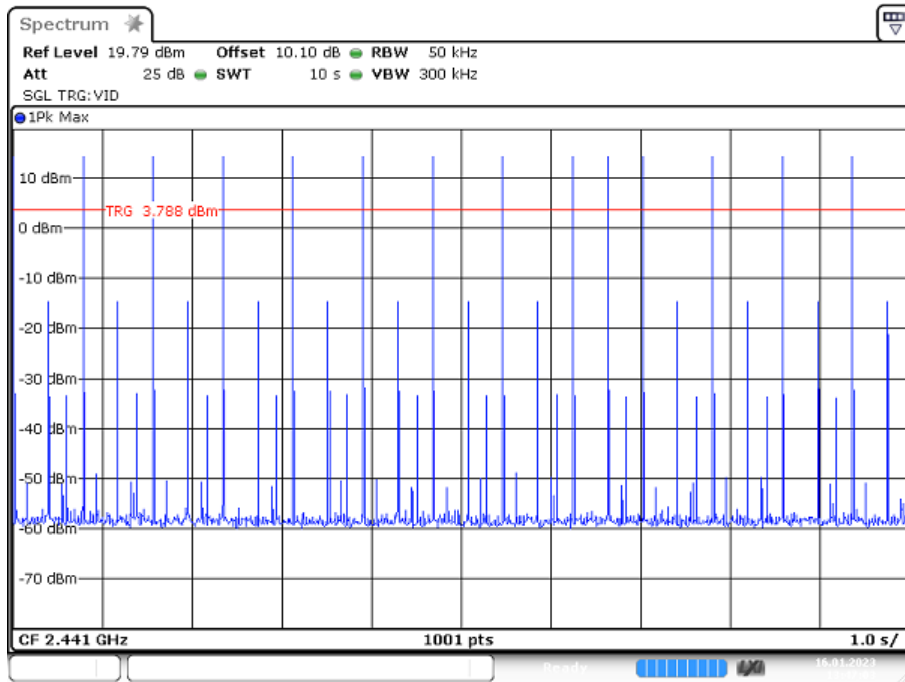
Technology to test	
Switched Path	None

### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
---

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	19.79   10.1   25
Start [MHz]   Stop [MHz]	2441.000   2441.000
RBW [MHz]   VBW [MHz]	0.050000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	10000   0   1001   SWE



Date: 16.JAN.2023 13:47:03

# Hardcopy SA ~

**RESULT**

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Marker Readout					

**RESULT**

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Delta Marker Readout					

Verdict	INFO
---------	------

## # Hardcopy SA ~

### Test References

TC Start	16.01.2023 13:58:43
Ambit Temp [°C]   Humidity [rel%]	25.1   30
System Version	3.3.3.4
Test Specification	-
Test Method	
TC Version	0.0.1
My Description	Hardcopy Spectrum Analyzer
Add. Information	

### Test Parameter

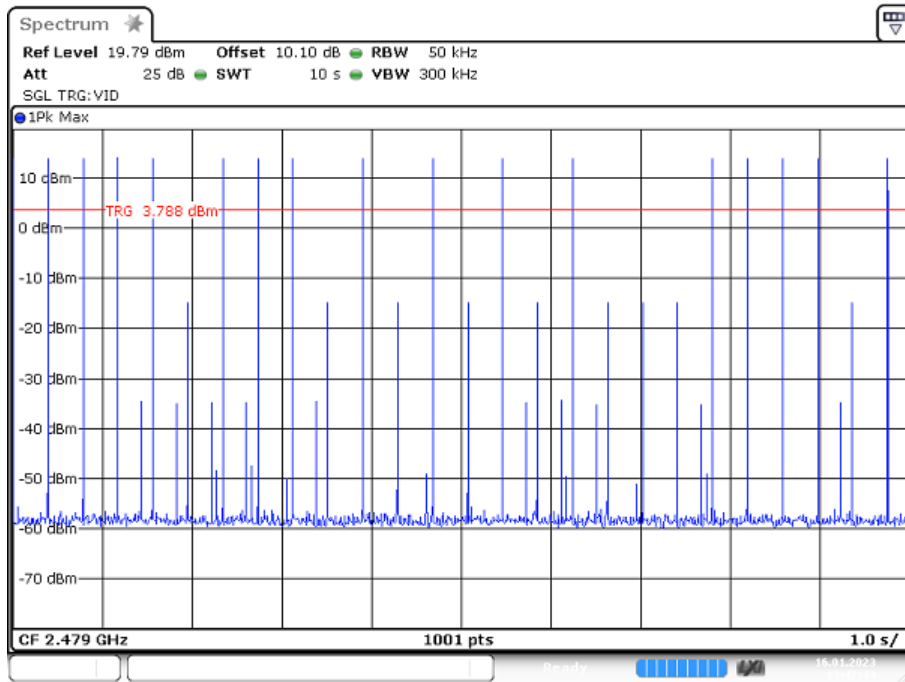
Technology to test	
Switched Path	None

### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
---

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	19.79   10.1   25
Start [MHz]   Stop [MHz]	2479.000   2479.000
RBW [MHz]   VBW [MHz]	0.050000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	10000   0   1001   SWE



Date: 16.JAN.2023 13:47:44

# Hardcopy SA ~

**RESULT**

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Marker Readout					

**RESULT**

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Delta Marker Readout					

Verdict	INFO
---------	------



## # Hardcopy SA ~

### Test References

TC Start	16.01.2023 13:59:45
Ambit Temp [°C]   Humidity [rel%]	25.2   30
System Version	3.3.3.4
Test Specification	-
Test Method	
TC Version	0.0.1
My Description	Hardcopy Spectrum Analyzer
Add. Information	

### Test Parameter

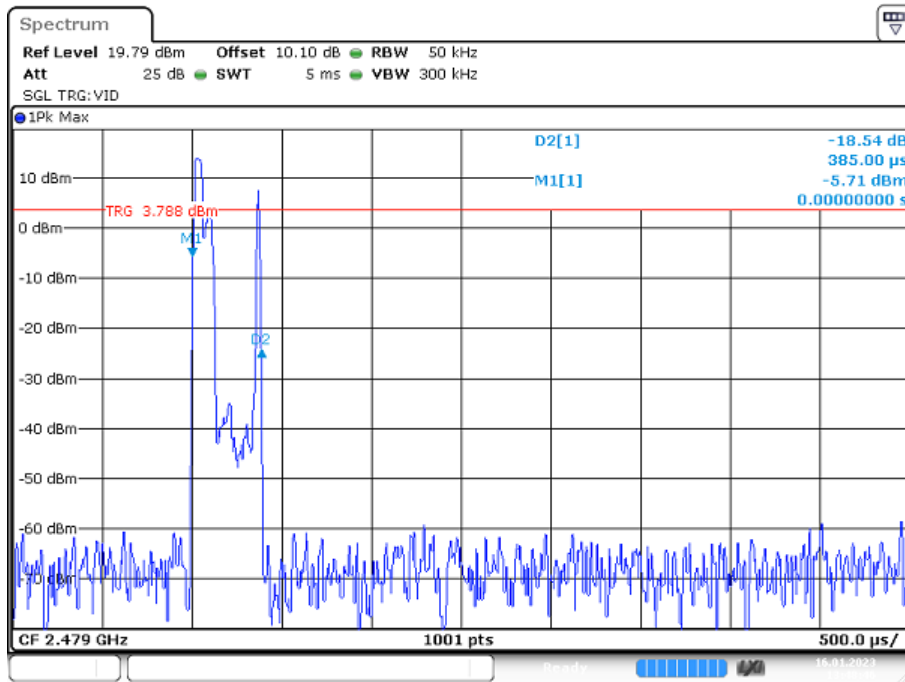
Technology to test	
Switched Path	None

### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
---

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	19.79   10.1   25
Start [MHz]   Stop [MHz]	2479.000   2479.000
RBW [MHz]   VBW [MHz]	0.050000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	5   0   1001   SWE



Date: 16.JAN.2023 13:48:47

# Hardcopy SA ~

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Marker Readout					
Marker 1 Time	---	---	0.000	ms	INFO

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Delta Marker Readout					
Delta Marker 2 Time	---	---	0.385	ms	INFO
Delta Marker 2 Level	---	---	-18.544	dB	INFO

Verdict

INFO

## # Hardcopy SA ~

### Test References

TC Start	16.01.2023 14:00:09
Ambit Temp [°C]   Humidity [rel%]	25.1   30
System Version	3.3.3.4
Test Specification	-
Test Method	
TC Version	0.0.1
My Description	Hardcopy Spectrum Analyzer
Add. Information	

### Test Parameter

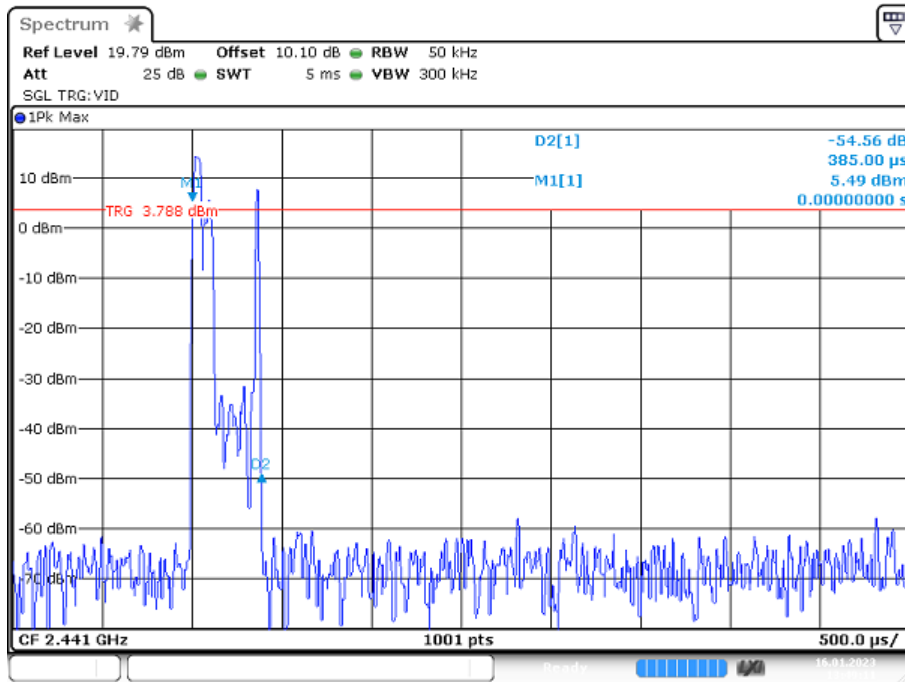
Technology to test	
Switched Path	None

### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
---

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	19.79   10.1   25
Start [MHz]   Stop [MHz]	2441.000   2441.000
RBW [MHz]   VBW [MHz]	0.050000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	5   0   1001   SWE



Date: 16.JAN.2023 13:49:11

# Hardcopy SA ~

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Marker Readout					
Marker 1 Time	---	---	0.000	ms	INFO

### RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Delta Marker Readout					
Delta Marker 2 Time	---	---	0.385	ms	INFO
Delta Marker 2 Level	---	---	-54.557	dB	INFO

Verdict

INFO

## # Hardcopy SA ~

### Test References

TC Start	16.01.2023 14:00:41
Ambit Temp [°C]   Humidity [rel%]	25.2   30
System Version	3.3.3.4
Test Specification	-
Test Method	
TC Version	0.0.1
My Description	Hardcopy Spectrum Analyzer
Add. Information	

### Test Parameter

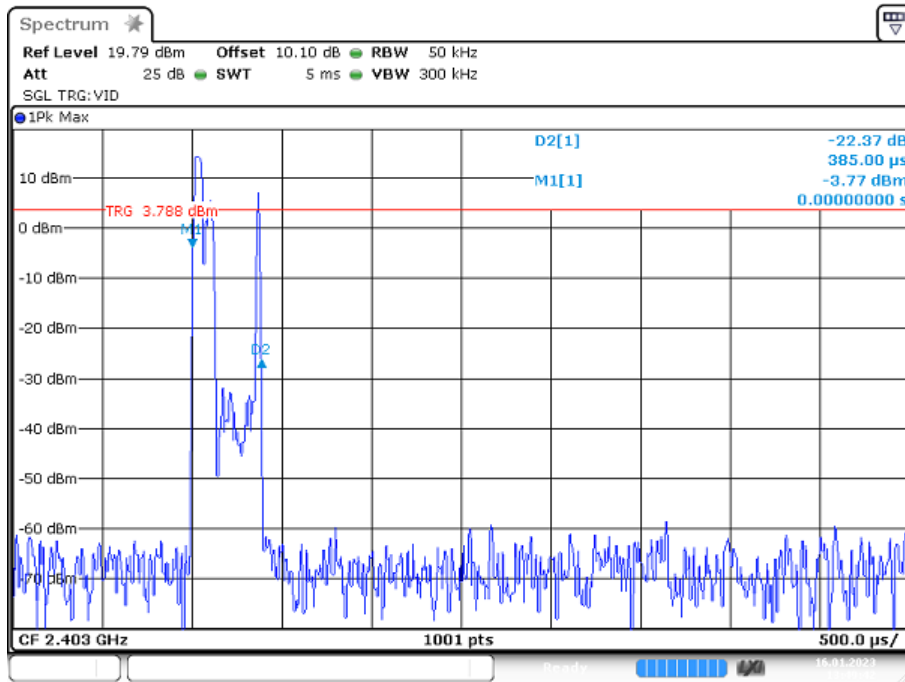
Technology to test	
Switched Path	None

### Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
---

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	19.79   10.1   25
Start [MHz]   Stop [MHz]	2403.000   2403.000
RBW [MHz]   VBW [MHz]	0.050000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: Time [ms]   Count   Points per Section   Type	5   0   1001   SWE



Date: 16.JAN.2023 13:49:43

# Hardcopy SA ~

**RESULT**

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Marker Readout					
Marker 1 Time	---	---	0.000	ms	INFO

**RESULT**

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Delta Marker Readout					
Delta Marker 2 Time	---	---	0.385	ms	INFO
Delta Marker 2 Level	---	---	-22.371	dB	INFO

Verdict

INFO

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