

# Conducted test results

No.1-5658/23-02-08\_TR1-A201-R1

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November 29, 2023

Test Standard(s)	NA - NI FCC 15.247 - NI FCC 15.247, ISED RSS247 - NI
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Testing Manager  
Radio Labs

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## NA # Peak output power 3MHz/3MHz ~ BT LE 1 Msps

### References

TC start	15.11.2023 09:58:58
Ambit temp [°C]   humidity [rel%]	0.0   0
System version	4.7.1.2
Standard   Version	NA   NI
Method	
Description	Peak OP 3MHz/3MHz - BT LE 1 Msps
Information	

### EUT Common Settings BT Low Energy

Intermodulation Value N	3
Image Freq. Low   Mid   High [MHz]	0   0   0
Power Class	2
1 Mbps supported	True   TXpayload 255   RXpayload 255
2 Mbps supported	True   TXpayload 255   RXpayload 255
Longrange S8 supported	False   TXpayload 255   RXpayload 255
Longrange S2 supported	False   TXpayload 255   RXpayload 255
Signaling Settings	USB_RS232   HCI   3   9600   None   S1   None   On
Signaling RF Settings	RF1com   0   0   On
User Interaction	No
Switch Matrix & Pathcompensation enabled	Yes

### Test Parameter

Technology to test	BT LE 1 Msps
Antenna port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2402
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2480
Auto control enabled power supply   Climatic Box	No   No
Additional path loss [dB]	0.7
Full path name   type	EUT - SignalingUnit - SpectrumAnalyzer

### Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.190

## Equipment

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Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI

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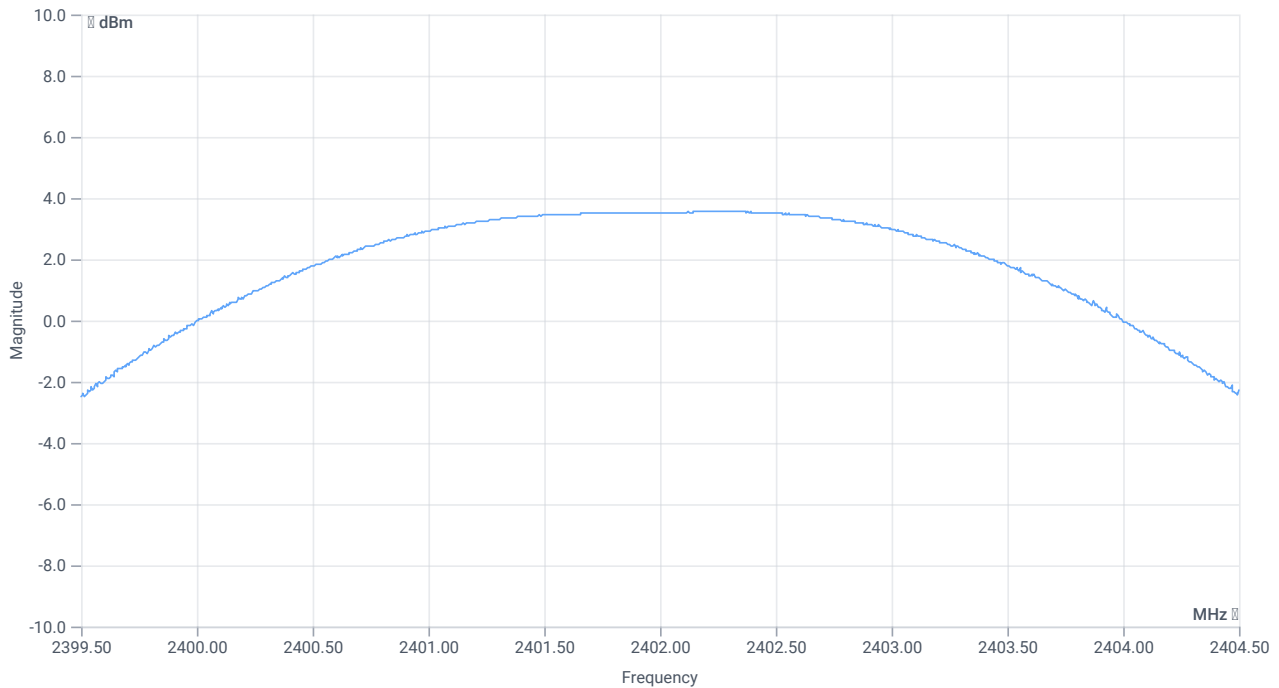
## Test at TX 2402 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	3.60	dBm	INFO
Ref. Frequency	--	--	2402.200	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	13.60   11.29   20
Start [MHz]   Stop [MHz]	2399.500   2404.500
RBW [MHz]   VBW [MHz]	3.000000   3.000000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	1000   10   1001   SWE



Peak output power

### RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak Power	--	--	3.56	dBm	INFO
Peak Power	--	--	2.269865	mW	INFO
Frequency at Peak	--	--	2402.38	MHz	INFO

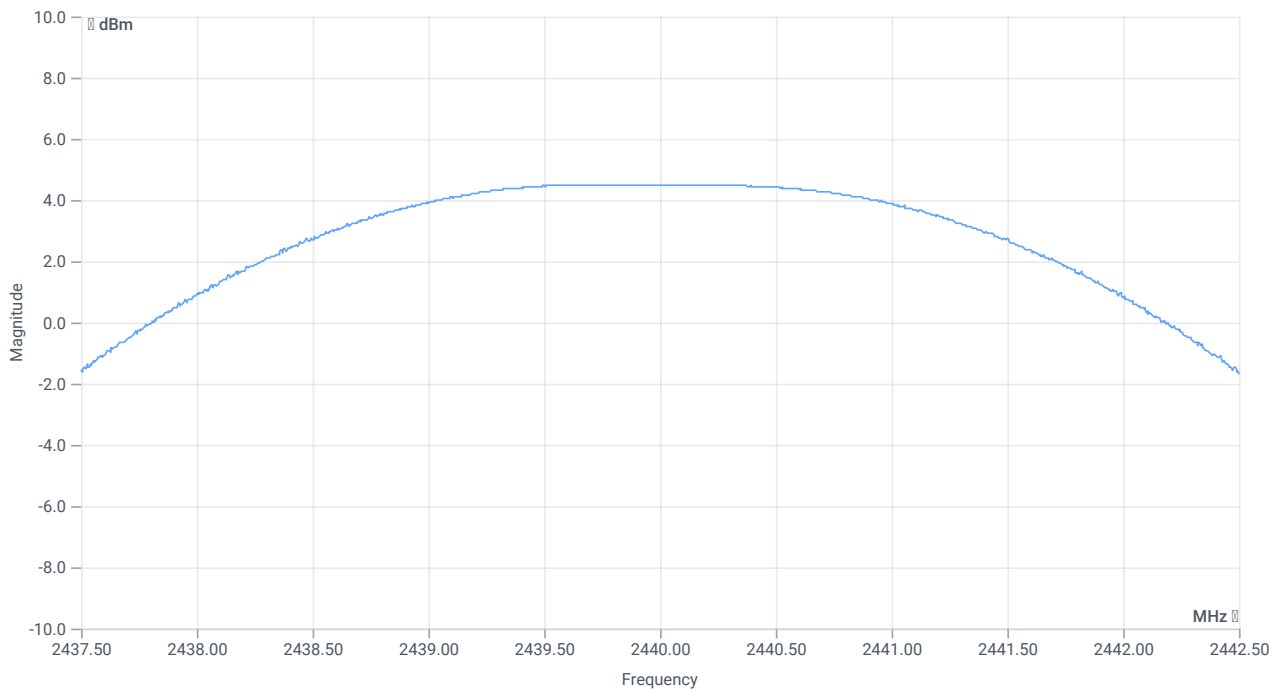
## Test at TX 2440 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	4.48	dBm	INFO
Ref. Frequency	--	--	2440.200	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	14.48   11.36   20
Start [MHz]   Stop [MHz]	2437.500   2442.500
RBW [MHz]   VBW [MHz]	3.000000   3.000000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	1000   10   1001   SWE



Peak output power

### RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak Power	--	--	4.51	dBm	INFO
Peak Power	--	--	2.82488	mW	INFO
Frequency at Peak	--	--	2439.765	MHz	INFO

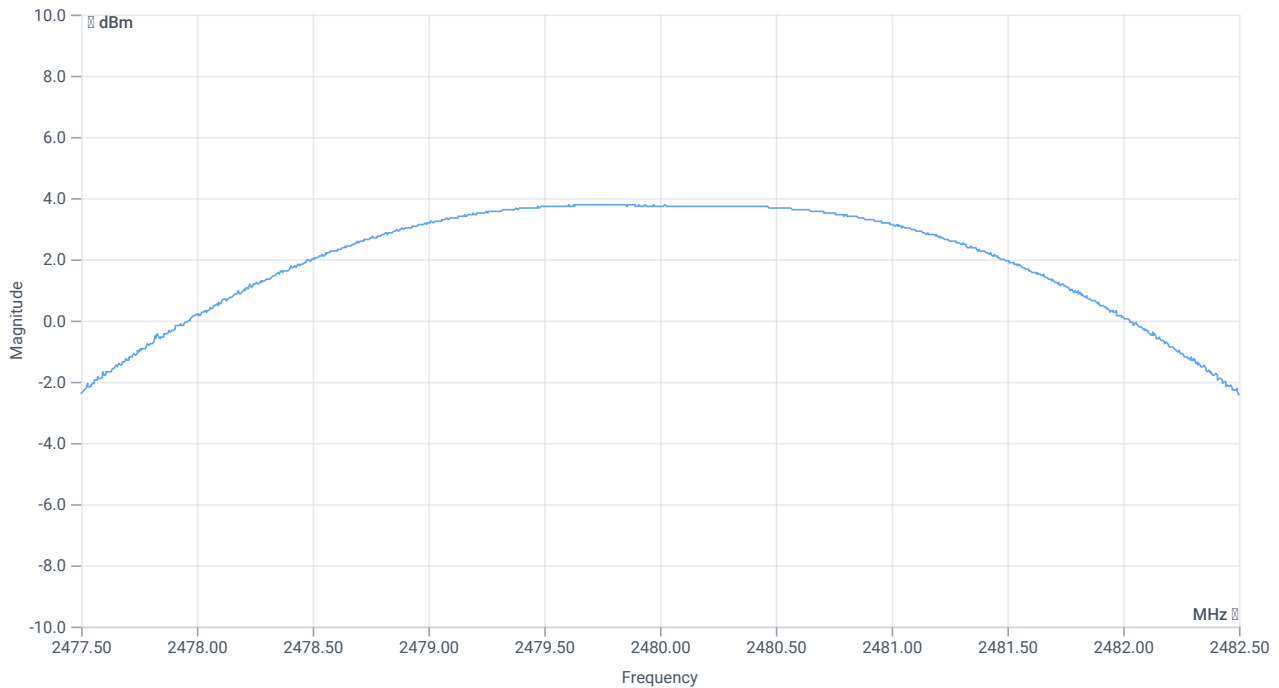
## Test at TX 2480 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	3.79	dBm	INFO
Ref. Frequency	--	--	2480.300	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	13.79   11.41   20
Start [MHz]   Stop [MHz]	2477.500   2482.500
RBW [MHz]   VBW [MHz]	3.000000   3.000000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	1000   10   1001   SWE



Peak output power

### RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak Power	--	--	3.77	dBm	INFO
Peak Power	--	--	2.382319	mW	INFO
Frequency at Peak	--	--	2479.625	MHz	INFO

Verdict

PASS



# FCC 15.247 # Maximum peak conducted output power DTS ~ BT LE 1 Msps

## References

TC start	15.11.2023 12:01:19
Ambit temp [°C]   humidity [rel%]	0.0   0
System version	4.7.1.2
Standard   Version	FCC 15.247   NI
Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.1 RBW ≥ DTS Bandwidth
Description	FCC 15.247 Maximum Peak Output Power Conducted DTS - BT LE 1 Msps
Information	

## EUT Common Settings BT Low Energy

Intermodulation Value N	3
Image Freq. Low   Mid   High [MHz]	0   0   0
Power Class	2
1 Mbps supported	True   TXpayload 255   RXpayload 255
2 Mbps supported	True   TXpayload 255   RXpayload 255
Longrange S8 supported	False   TXpayload 255   RXpayload 255
Longrange S2 supported	False   TXpayload 255   RXpayload 255
Signaling Settings	USB_RS232   HCI   3   9600   None   S1   None   On
Signaling RF Settings	RF1com   0   0   On
User Interaction	No
Switch Matrix & Pathcompensation enabled	Yes

## Test Parameter

Technology to test	BT LE 1 Msps
Antenna port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2402
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2480
Auto control enabled power supply   Climatic Box	No   No
Additional path loss [dB]	0.7
Full path name   type	EUT - SignalingUnit - SpectrumAnalyzer

## Equipment

## Equipment

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Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60

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Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.190

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Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI

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## Test at TX 2402 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	3.71	dBm	INFO
Ref. Frequency	--	--	2402.300	MHz	INFO

### READ SA SETTINGS:

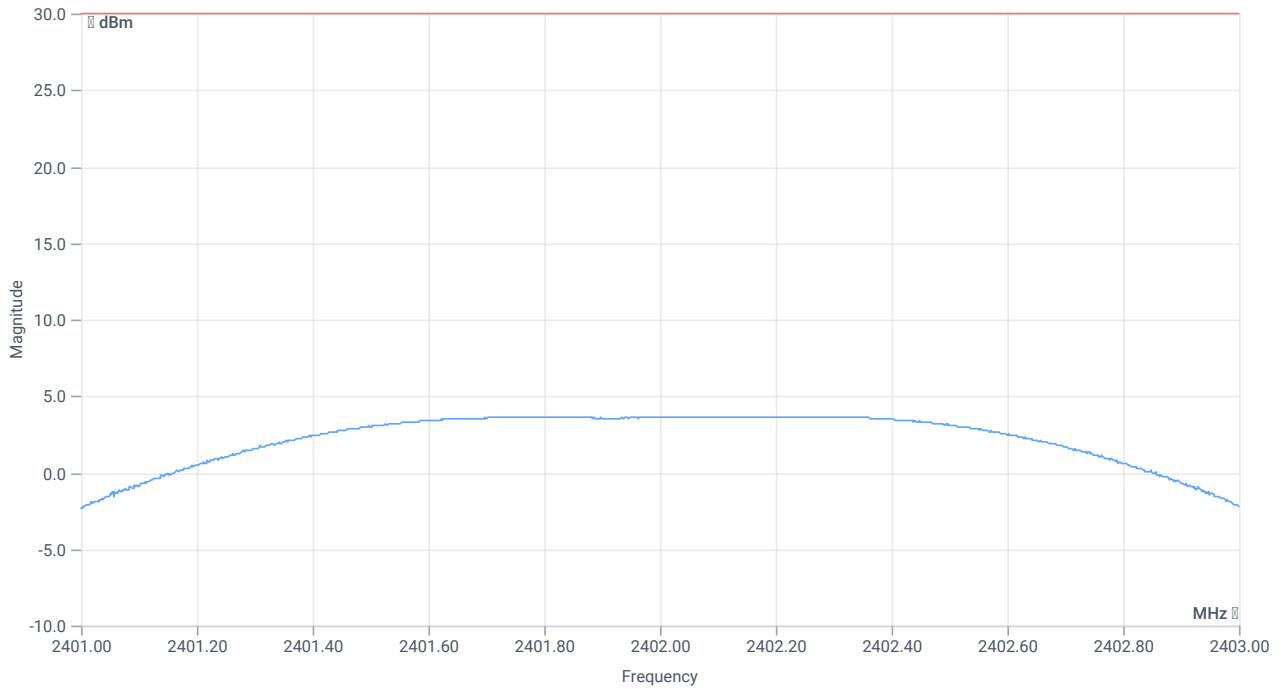
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	8.71   11.29   15
Start [MHz]   Stop [MHz]	2401.000   2403.000
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE

### DTS Bandwidth

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
DTS Bandwidth (6dB)	--	--	651	kHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	13.71   11.29   20
Start [MHz]   Stop [MHz]	2401.000   2403.000
RBW [MHz]   VBW [MHz]	1.000000   3.000000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   1001   SWE



Peak output power

## RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak Power	--	30.00	3.64	dBm	PASS
Peak Power	--	1000	2.312065	mW	PASS
Frequency at Peak	--	--	2402.256	MHz	INFO

## Test at TX 2440 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	4.61	dBm	INFO
Ref. Frequency	--	--	2440.200	MHz	INFO

### READ SA SETTINGS:

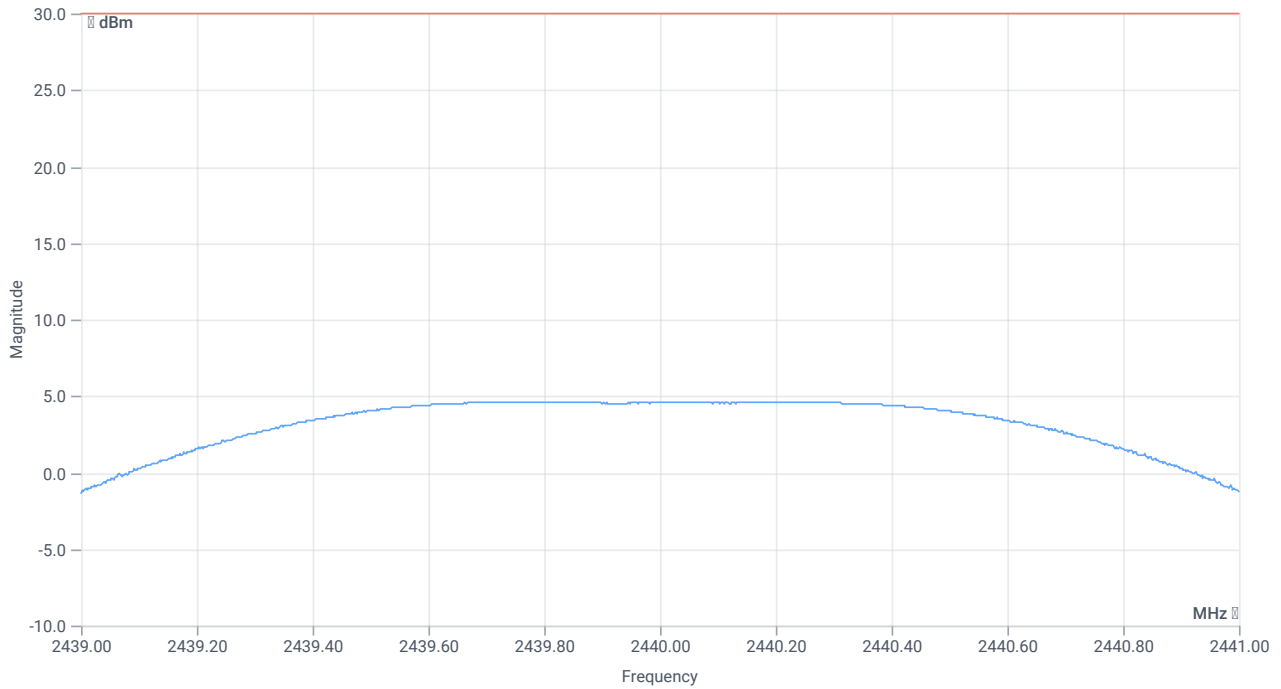
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	9.61   11.36   15
Start [MHz]   Stop [MHz]	2439.000   2441.000
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE

### DTS Bandwidth

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
DTS Bandwidth (6dB)	--	--	651	kHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	14.61   11.36   20
Start [MHz]   Stop [MHz]	2439.000   2441.000
RBW [MHz]   VBW [MHz]	1.000000   3.000000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   1001   SWE



Peak output power

## RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak Power	--	30.00	4.59	dBm	PASS
Peak Power	--	1000	2.877398	mW	PASS
Frequency at Peak	--	--	2439.748	MHz	INFO

## Test at TX 2480 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	3.92	dBm	INFO
Ref. Frequency	--	--	2480.300	MHz	INFO

### READ SA SETTINGS:

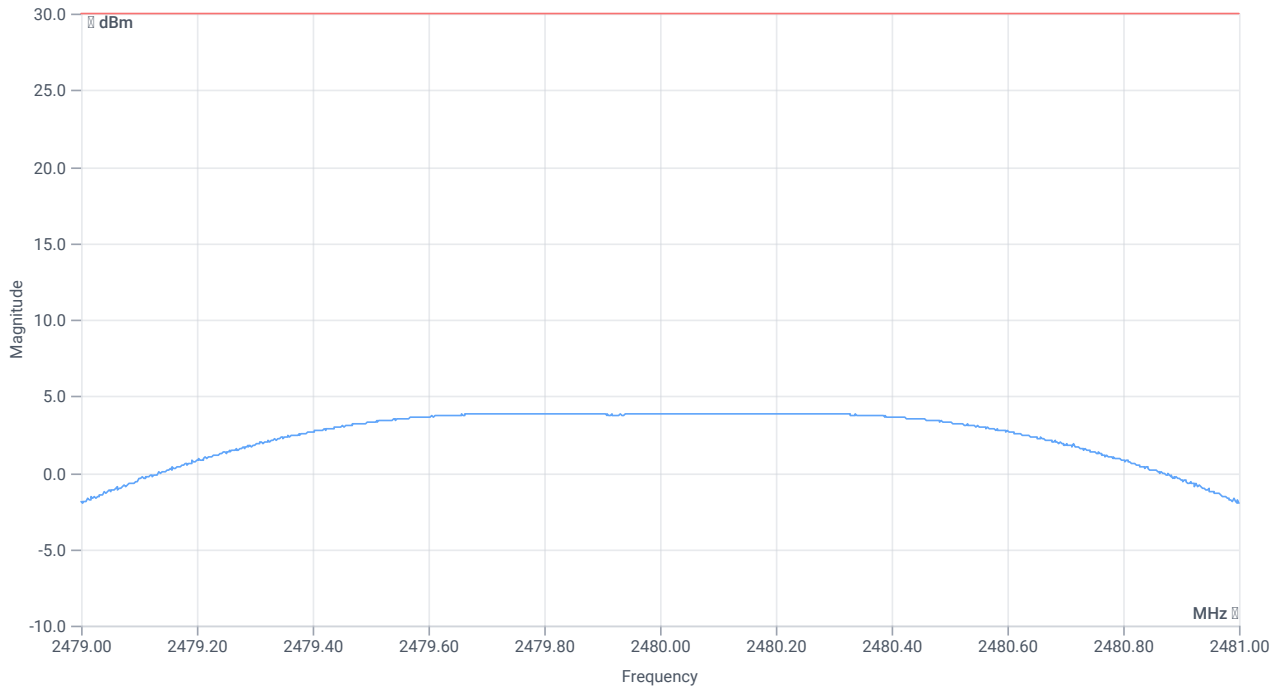
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	8.92   11.41   15
Start [MHz]   Stop [MHz]	2479.000   2481.000
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE

### DTS Bandwidth

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
DTS Bandwidth (6dB)	--	--	654	kHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	13.92   11.41   20
Start [MHz]   Stop [MHz]	2479.000   2481.000
RBW [MHz]   VBW [MHz]	1.000000   3.000000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   1001   SWE



Peak output power

## RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak Power	--	30.00	3.85	dBm	PASS
Peak Power	--	1000	2.42661	mW	PASS
Frequency at Peak	--	--	2479.764	MHz	INFO

Verdict

PASS



## FCC 15.247 # Bandwidth 6dB DTS ~ BT LE 1 Msp

### References

TC start	15.11.2023 12:03:21
Ambit temp [°C]   humidity [rel%]	0.0   0
System version	4.7.1.2
Standard   Version	FCC 15.247   NI
Method	
Description	FCC 15.247 Bandwidth 6dB DTS - BT LE 1 Msp
Information	

### EUT Common Settings BT Low Energy

Intermodulation Value N	3
Image Freq. Low   Mid   High [MHz]	0   0   0
Power Class	2
1 Mbps supported	True   TXpayload 255   RXpayload 255
2 Mbps supported	True   TXpayload 255   RXpayload 255
Longrange S8 supported	False   TXpayload 255   RXpayload 255
Longrange S2 supported	False   TXpayload 255   RXpayload 255
Signaling Settings	USB_RS232   HCI   3   9600   None   S1   None   On
Signaling RF Settings	RF1com   0   0   On
User Interaction	No
Switch Matrix & Pathcompensation enabled	Yes

### Test Parameter

Technology to test	BT LE 1 Msp
Antenna port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2402
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2480
Auto control enabled power supply   Climatic Box	No   No
Additional path loss [dB]	0.7
Full path name   type	EUT - SignalingUnit - SpectrumAnalyzer

### Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.190

## Equipment

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Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI

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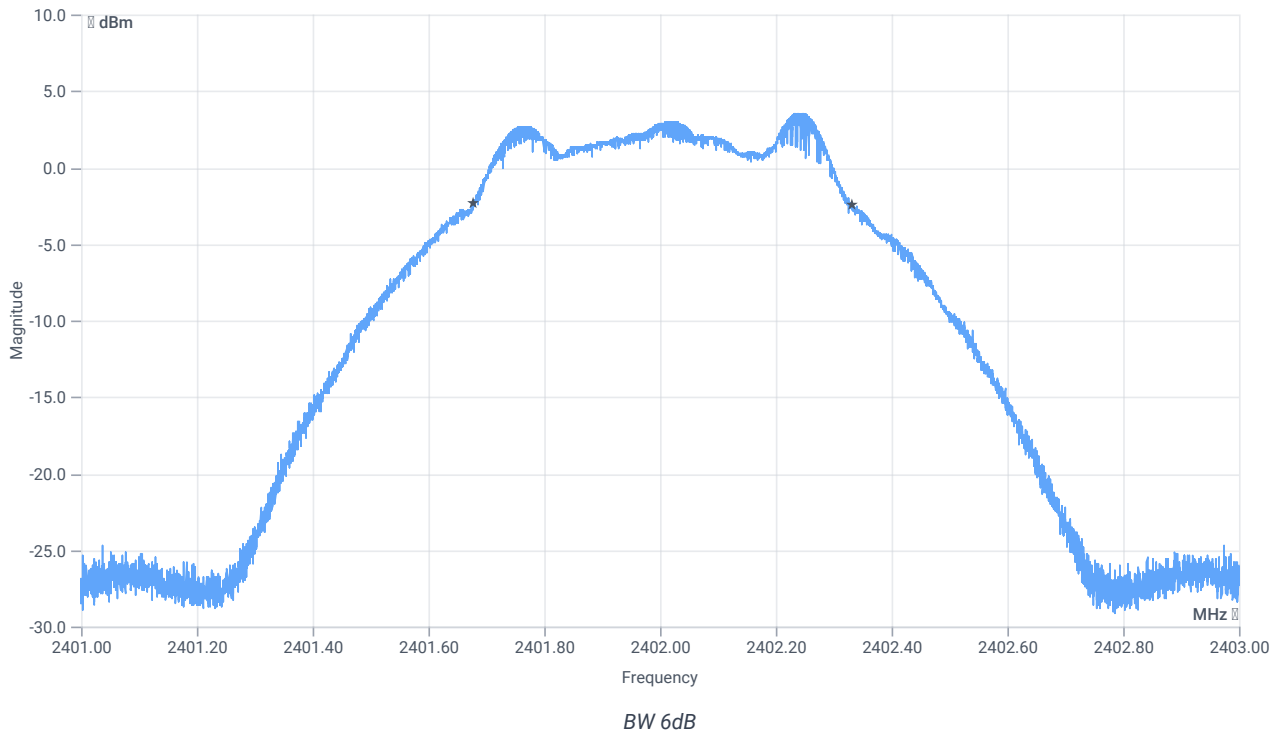
## Test at TX 2402 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	3.78	dBm	INFO
Ref. Frequency	--	--	2402.200	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	8.78   11.29   15
Start [MHz]   Stop [MHz]	2401.000   2403.000
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE



### RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
DTS Bandwidth (6dB)	500	--	655	kHz	PASS

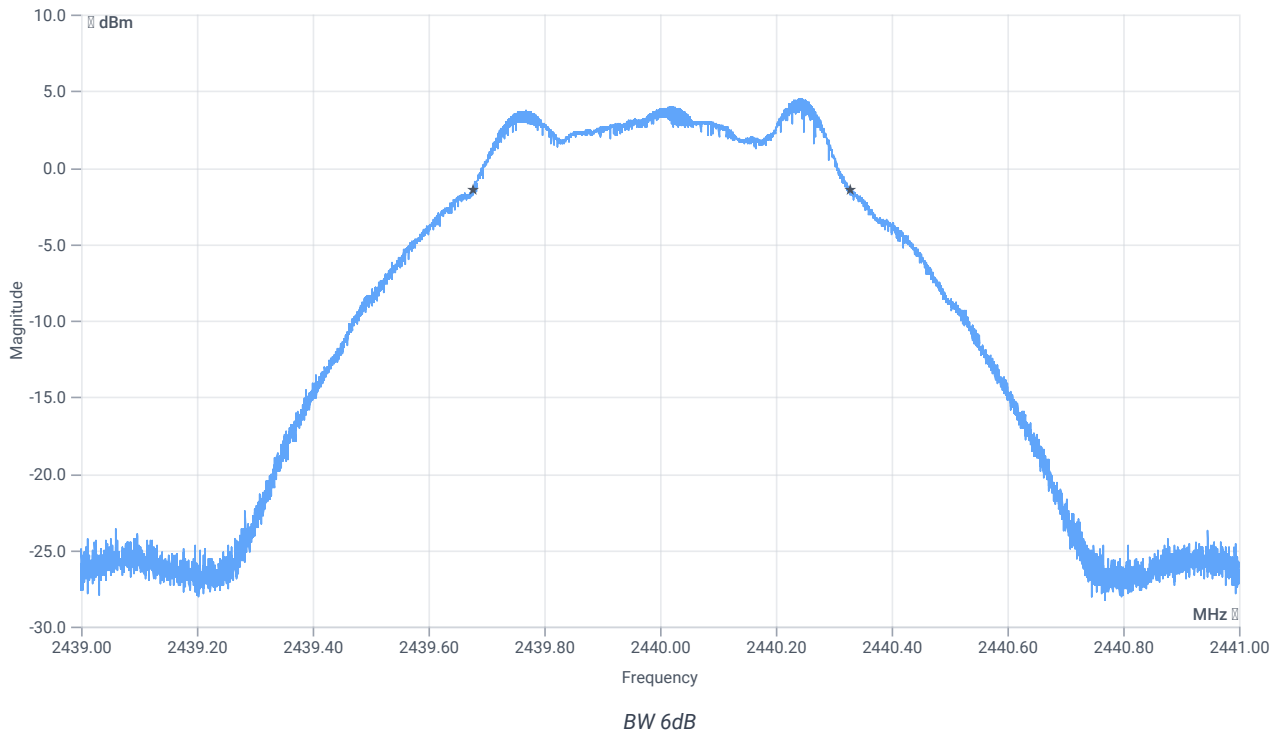
## Test at TX 2440 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	4.61	dBm	INFO
Ref. Frequency	--	--	2440.300	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	9.61   11.36   15
Start [MHz]   Stop [MHz]	2439.000   2441.000
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE



### RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
DTS Bandwidth (6dB)	500	--	651	kHz	PASS

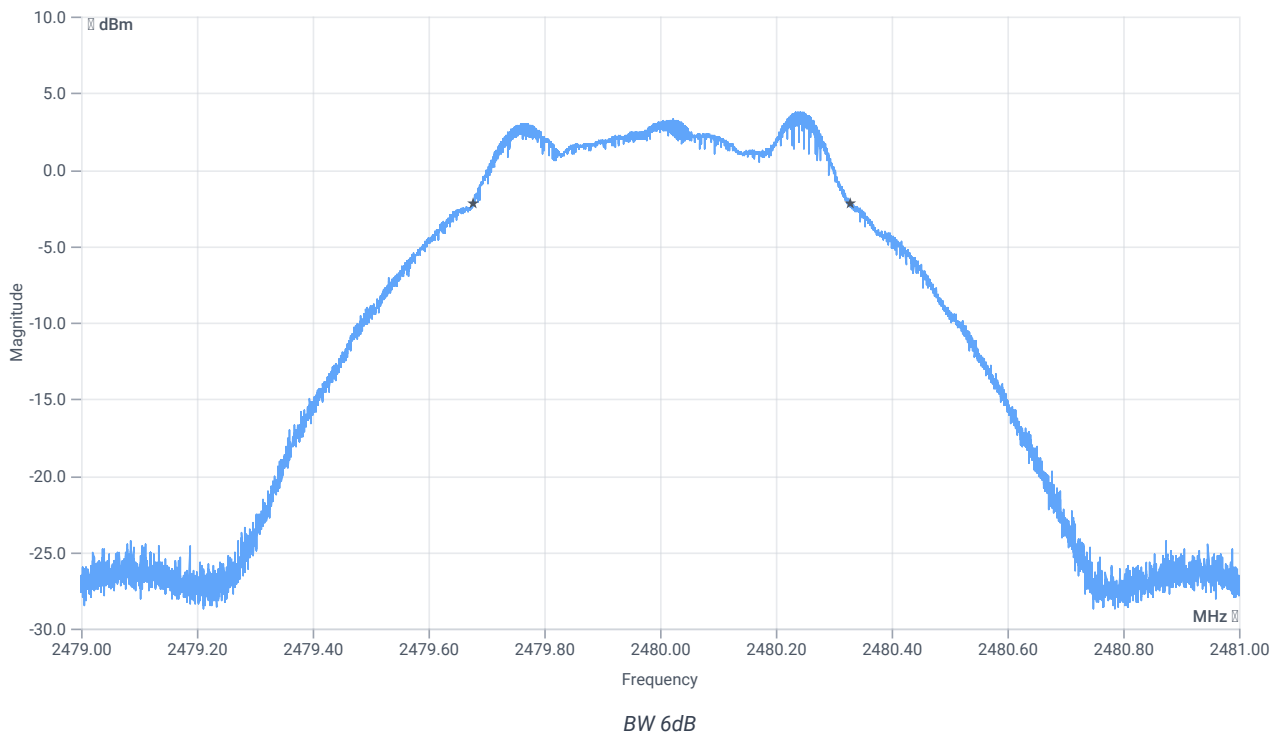
## Test at TX 2480 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	3.89	dBm	INFO
Ref. Frequency	--	--	2480.300	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	8.89   11.41   15
Start [MHz]   Stop [MHz]	2479.000   2481.000
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE



### RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
DTS Bandwidth (6dB)	500	--	651	kHz	PASS

Verdict

PASS

## FCC 15.247 # Peak psd DTS ~ BT LE 1 Msps

### References

TC start	15.11.2023 12:04:44
Ambit temp [°C]   humidity [rel%]	0.0   0
System version	4.7.1.2
Standard   Version	FCC 15.247   NI
Method	DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission
Description	FCC 15.247 Peak psd DTS - BT LE 1 Msps
Information	

### EUT Common Settings BT Low Energy

Intermodulation Value N	3
Image Freq. Low   Mid   High [MHz]	0   0   0
Power Class	2
1 Mbps supported	True   TXpayload 255   RXpayload 255
2 Mbps supported	True   TXpayload 255   RXpayload 255
Longrange S8 supported	False   TXpayload 255   RXpayload 255
Longrange S2 supported	False   TXpayload 255   RXpayload 255
Signaling Settings	USB_RS232   HCI   3   9600   None   S1   None   On
Signaling RF Settings	RF1com   0   0   On
User Interaction	No
Switch Matrix & Pathcompensation enabled	Yes

### Test Parameter

Technology to test	BT LE 1 Msps
Antenna port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2402
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2480
Auto control enabled power supply   Climatic Box	No   No
Additional path loss [dB]	0.7
Full path name   type	EUT - SignalingUnit - SpectrumAnalyzer

### Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60
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## Equipment

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Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.190

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Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI

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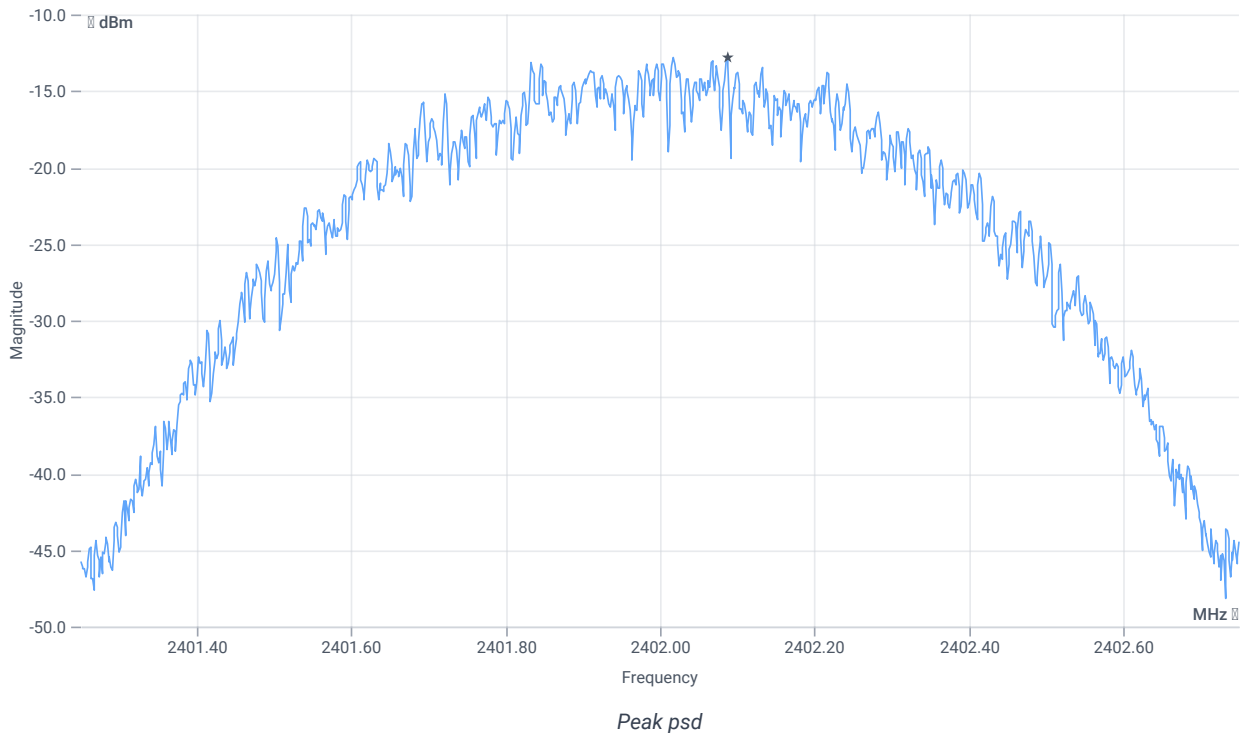
## Test at TX 2402 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	3.73	dBm	INFO
Ref. Frequency	--	--	2402.200	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	8.73   11.29   15
Start [MHz]   Stop [MHz]	2401.250   2402.750
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

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak psd	--	8	-12.77	dBm/3KHz	PASS



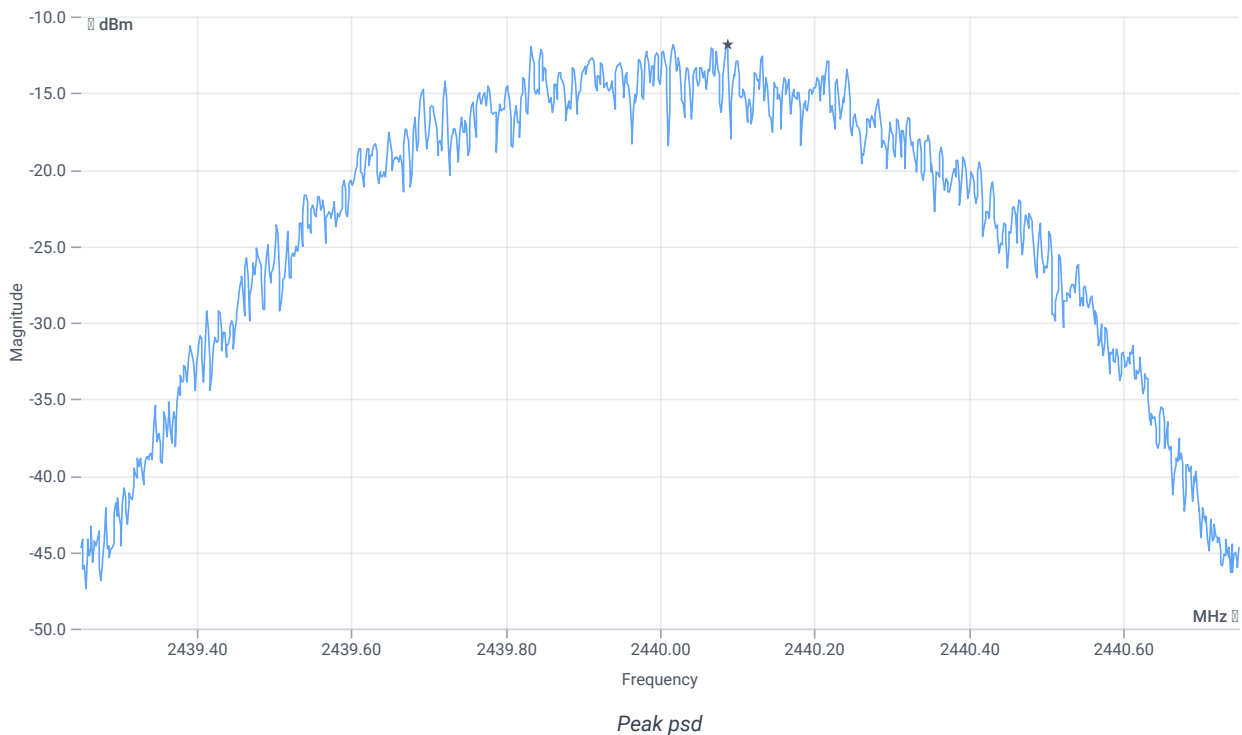
## Test at TX 2440 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	4.63	dBm	INFO
Ref. Frequency	--	--	2440.200	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	9.63   11.36   15
Start [MHz]   Stop [MHz]	2439.250   2440.750
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

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak psd	--	8	-11.83	dBm/3KHz	PASS

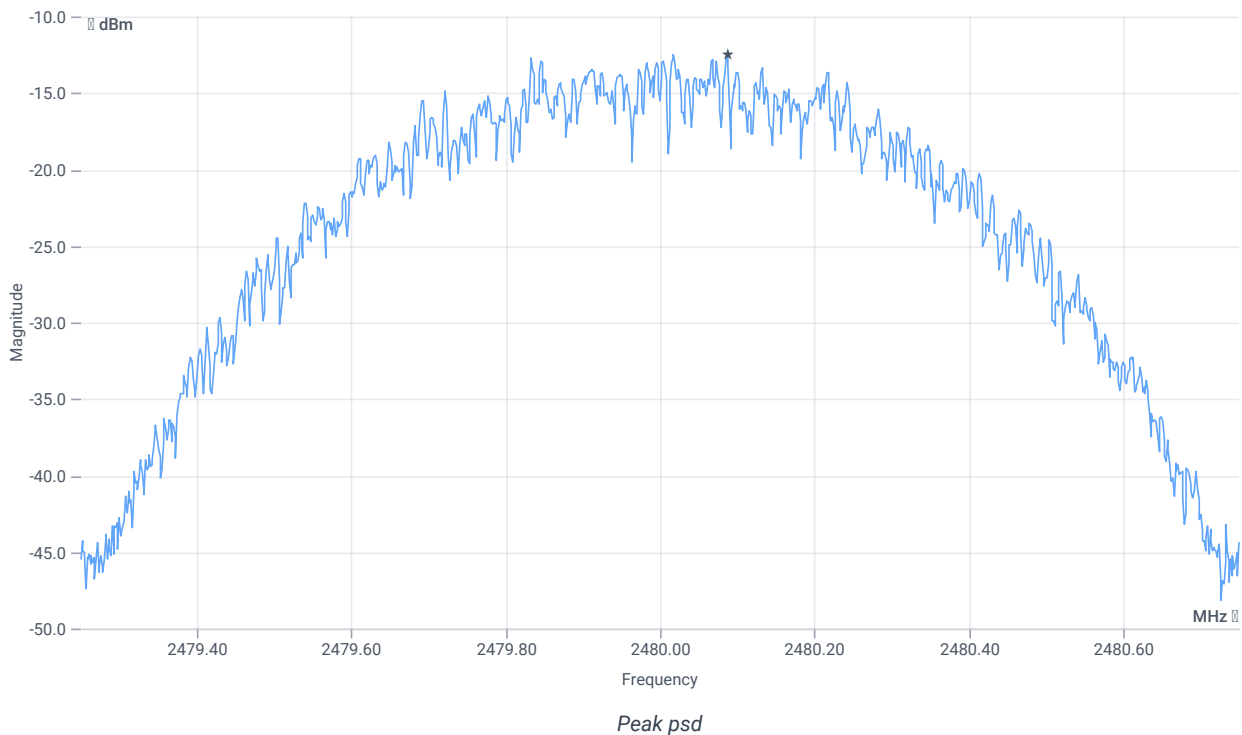
## Test at TX 2480 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	3.92	dBm	INFO
Ref. Frequency	--	--	2480.300	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	8.92   11.41   15
Start [MHz]   Stop [MHz]	2479.250   2480.750
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

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak psd	--	8	-12.49	dBm/3KHz	PASS

Verdict

PASS

# FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ BT LE 1 Msps

## References

TC start	15.11.2023 12:06:34
Ambit temp [°C]   humidity [rel%]	0.0   0
System version	4.7.1.2
Standard   Version	FCC 15.247, ISED RSS247   NI
Method	
Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - BT LE 1 Msps
Information	

## EUT Common Settings BT Low Energy

Intermodulation Value N	3
Image Freq. Low   Mid   High [MHz]	0   0   0
Power Class	2
1 Mbps supported	True   TXpayload 255   RXpayload 255
2 Mbps supported	True   TXpayload 255   RXpayload 255
Longrange S8 supported	False   TXpayload 255   RXpayload 255
Longrange S2 supported	False   TXpayload 255   RXpayload 255
Signaling Settings	USB_RS232   HCI   3   9600   None   S1   None   On
Signaling RF Settings	RF1com   0   0   On
User Interaction	No
Switch Matrix & Pathcompensation enabled	Yes

## Test Parameter

Technology to test	BT LE 1 Msps
Antenna port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2402
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2480
Auto control enabled power supply   Climatic Box	No   No
Additional path loss [dB]	0.7
Full path name   type	EUT - SignalingUnit - SpectrumAnalyzer

## Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60

## Equipment

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Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.190

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Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI

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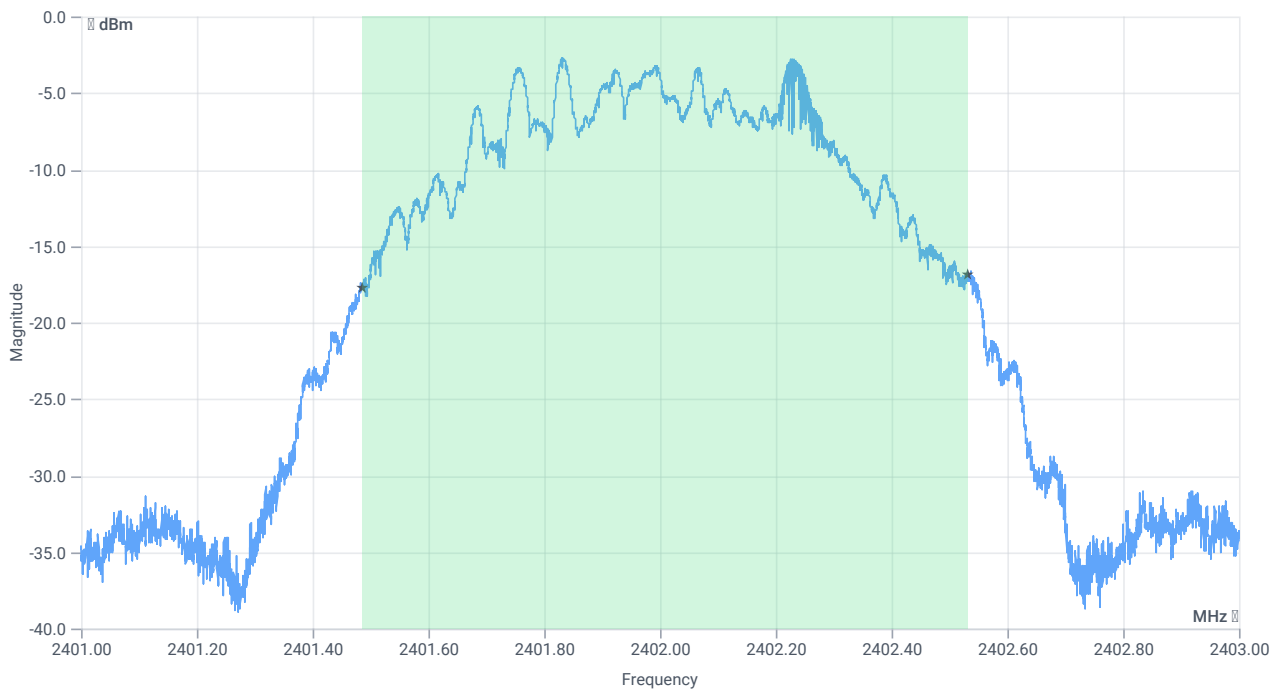
## Test at TX 2402 MHz

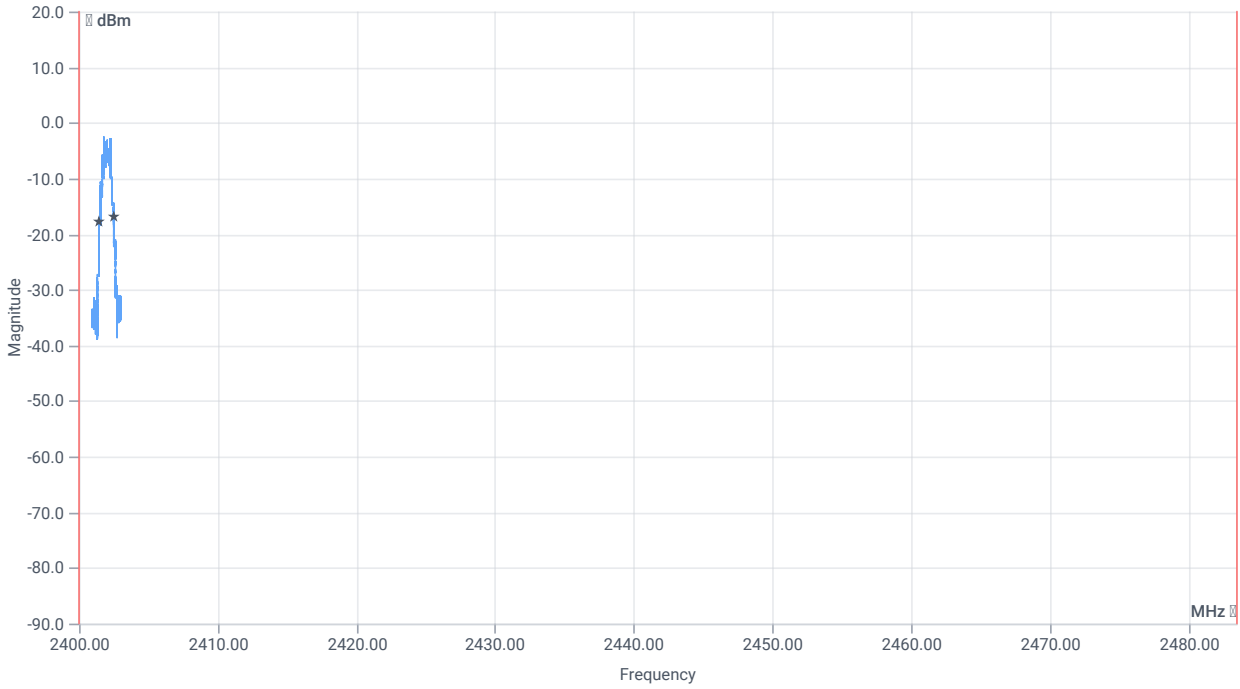
RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	3.73	dBm	INFO
Ref. Frequency	--	--	2402.300	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	8.73   11.29   15
Start [MHz]   Stop [MHz]	2401.000   2403.000
RBW [MHz]   VBW [MHz]	0.020000   0.100000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE

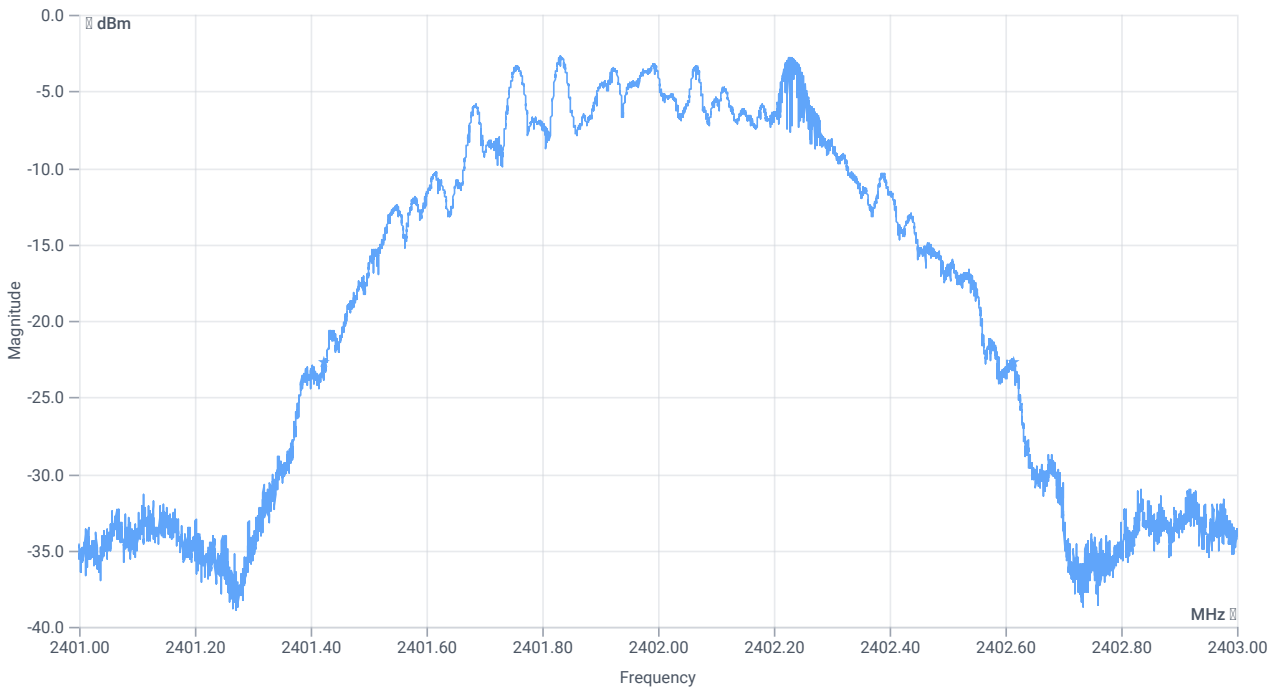




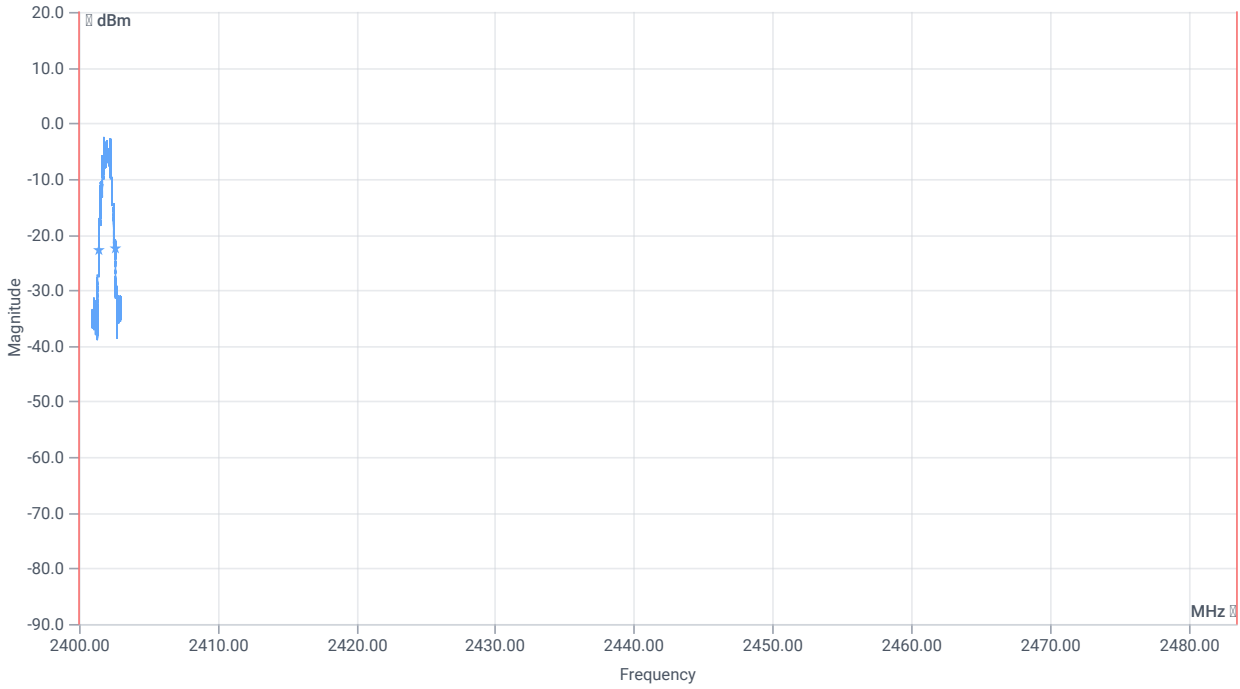
BW within Band 99PCT

RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	--	--	1045.000	kHz	INFO
T1 99%	2400.000000	--	2401.4869	MHz	PASS
T2 99%	--	2483.500000	2402.5323	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 20dB	--	--	1192	kHz	INFO
T1 20dB	2400.000000	--	2401.4238	MHz	PASS
T2 20dB	--	2483.500000	2402.6156	MHz	PASS

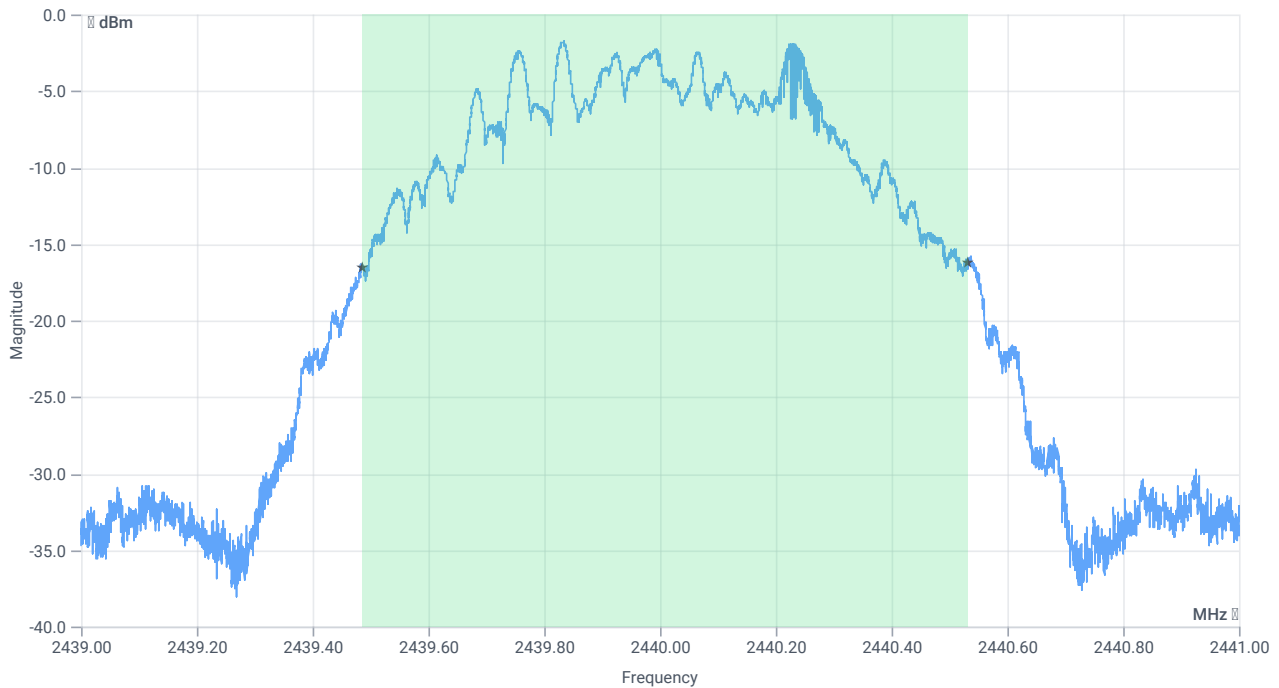
## Test at TX 2440 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	4.64	dBm	INFO
Ref. Frequency	--	--	2440.300	MHz	INFO

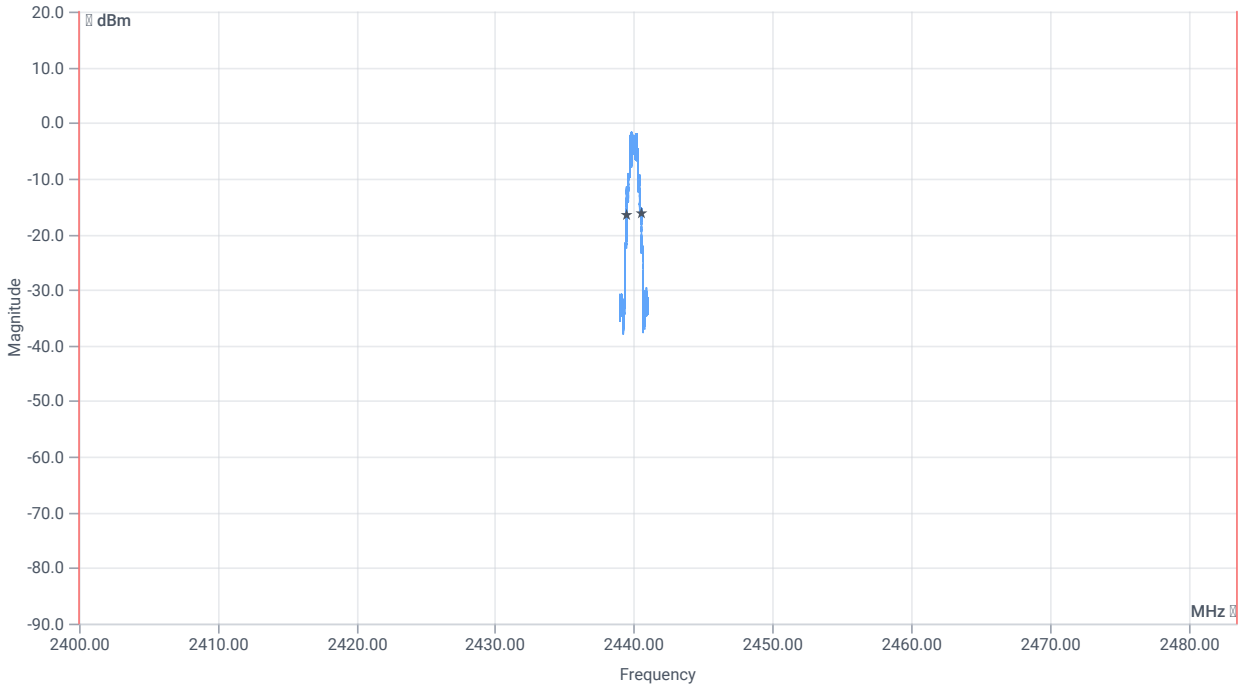
### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	9.64   11.36   15
Start [MHz]   Stop [MHz]	2439.000   2441.000
RBW [MHz]   VBW [MHz]	0.020000   0.100000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE



BW 99PCT

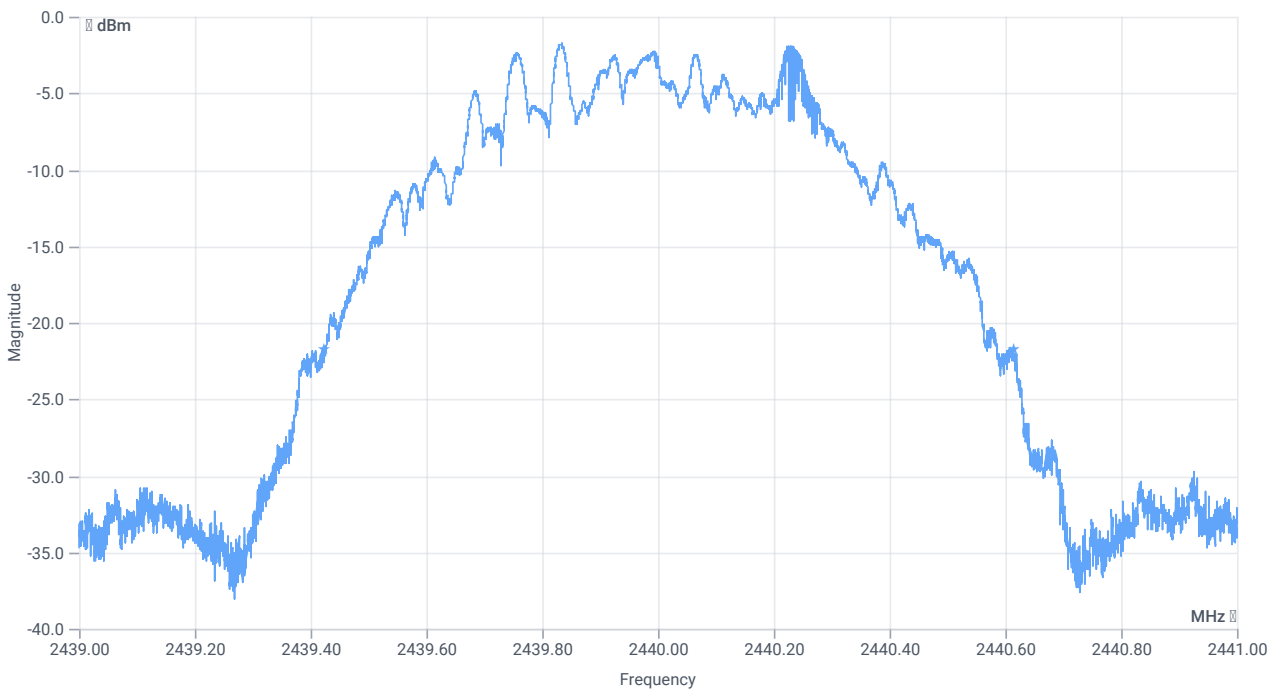




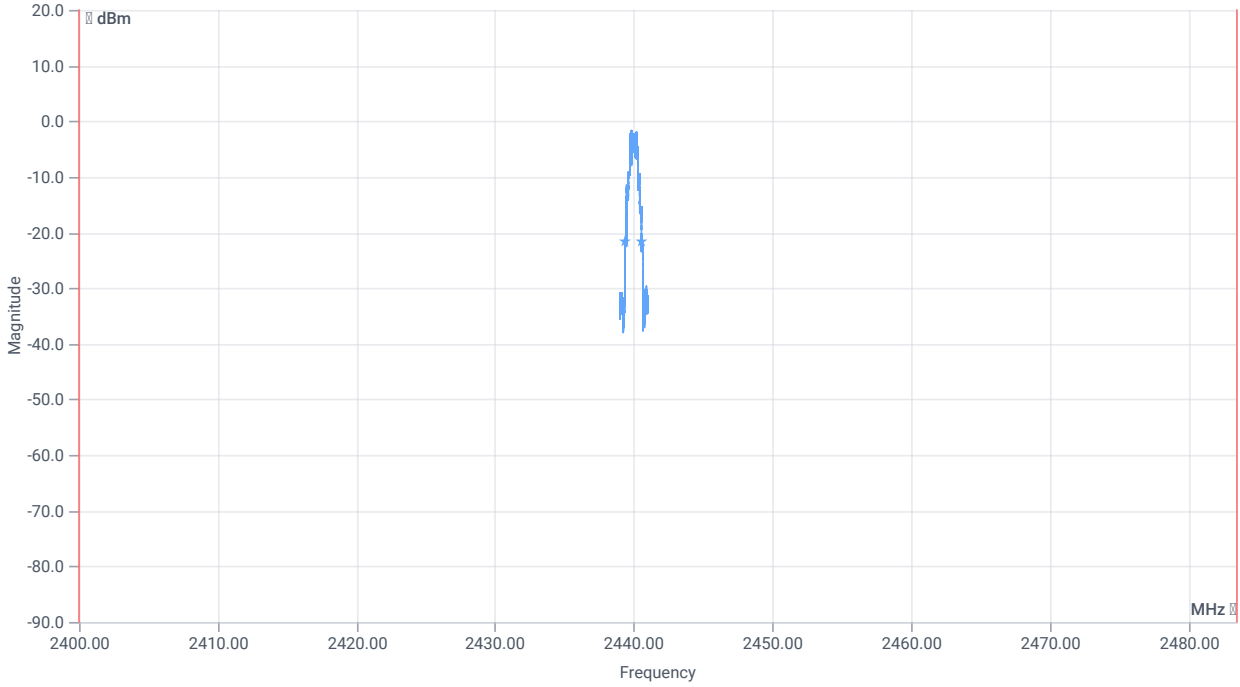
BW within Band 99PCT

## RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	--	--	1046.000	kHz	INFO
T1 99%	2400.000000	--	2439.4853	MHz	PASS
T2 99%	--	2483.500000	2440.5313	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 20dB	--	--	1190	kHz	INFO
T1 20DB	2400.000000	--	2439.4232	MHz	PASS
T2 20dB	--	2483.500000	2440.6134	MHz	PASS

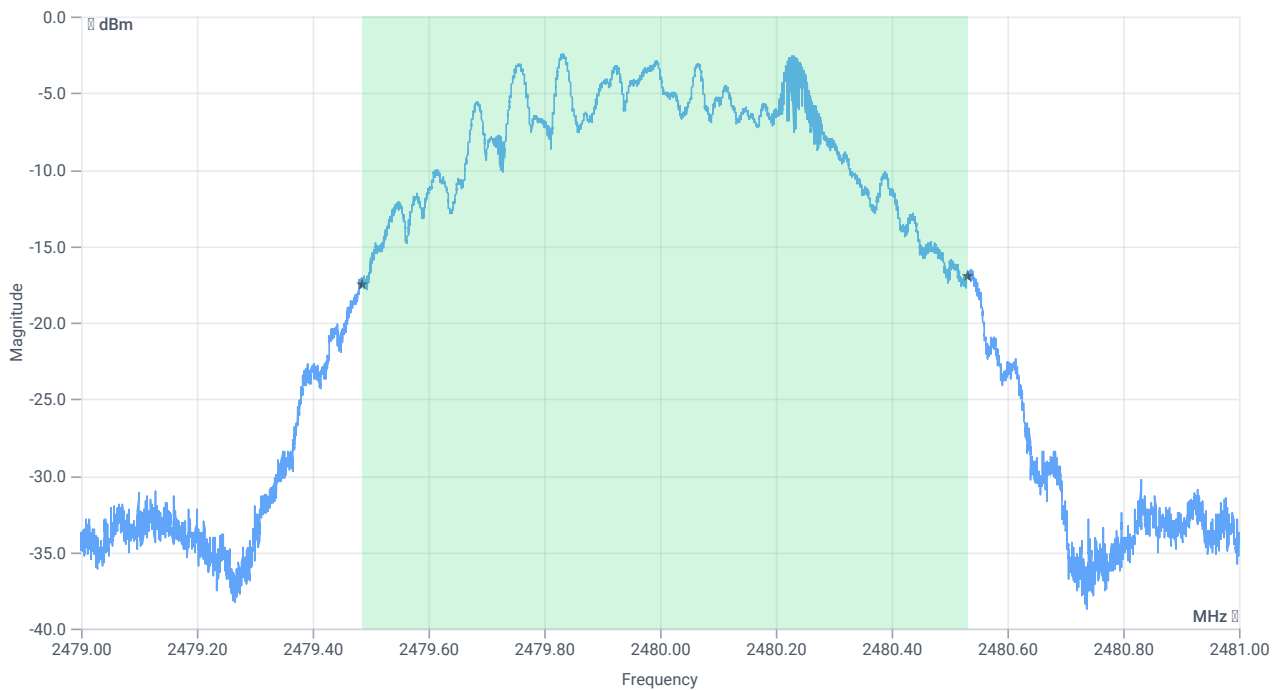
## Test at TX 2480 MHz

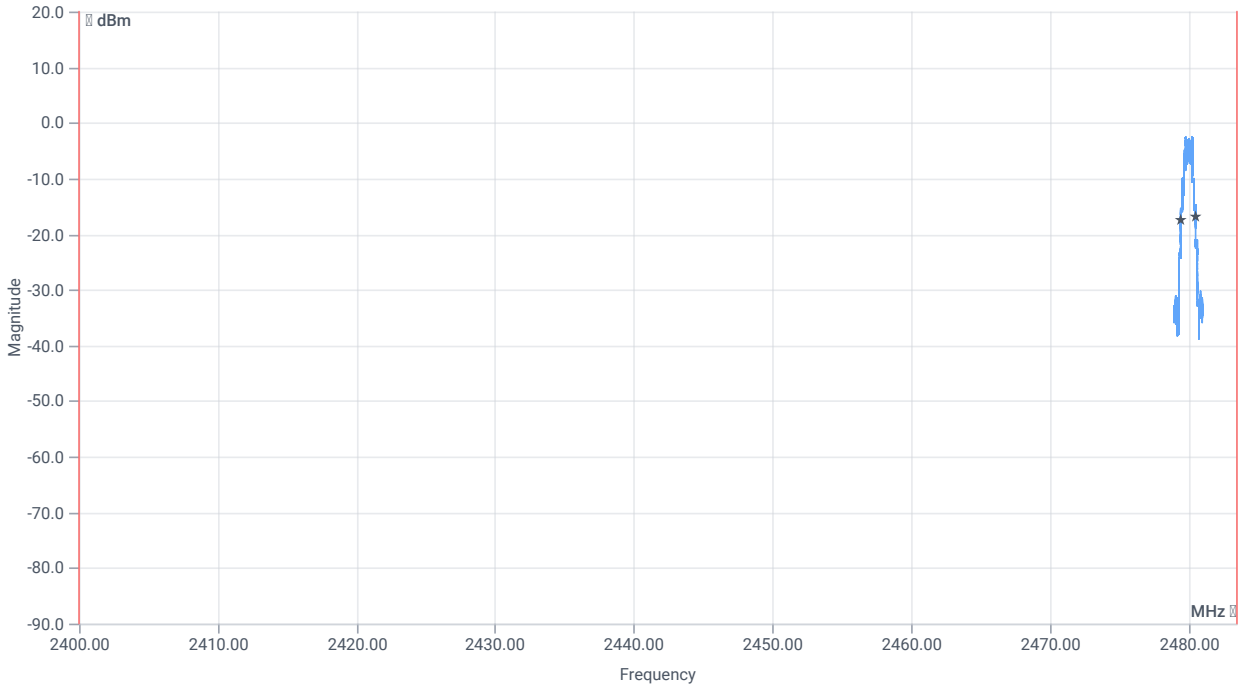
RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	3.91	dBm	INFO
Ref. Frequency	--	--	2480.300	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	8.91   11.41   15
Start [MHz]   Stop [MHz]	2479.000   2481.000
RBW [MHz]   VBW [MHz]	0.020000   0.100000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE

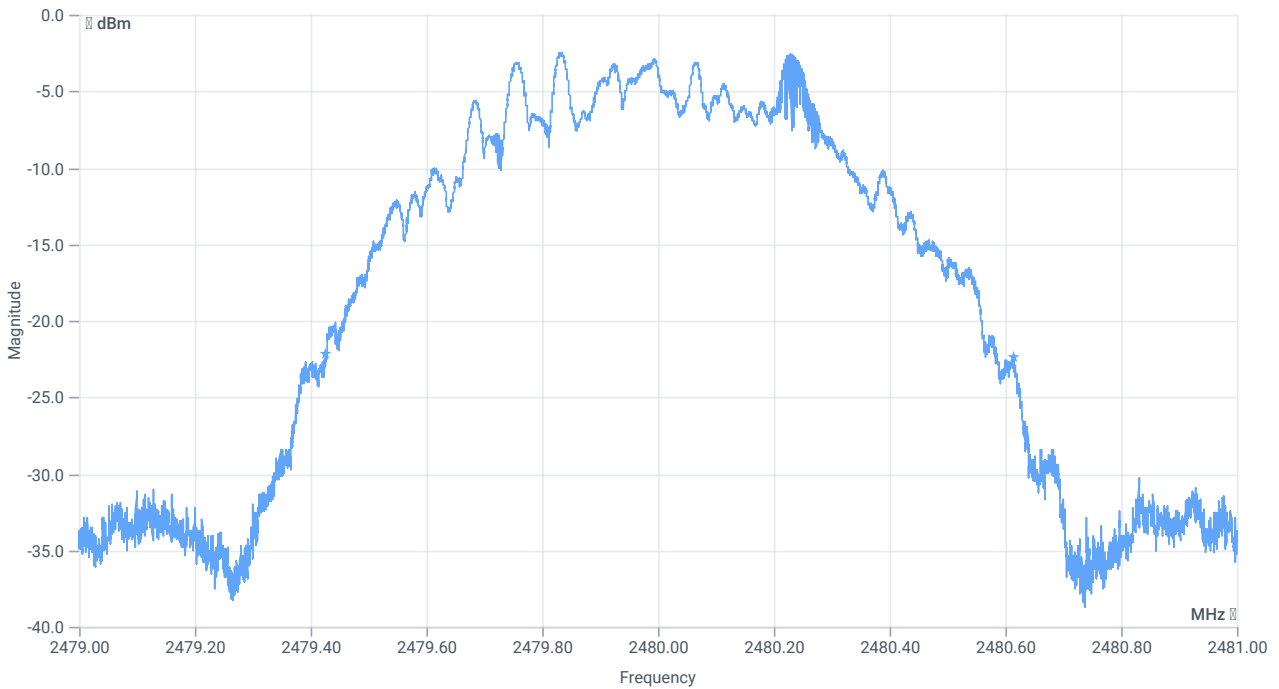




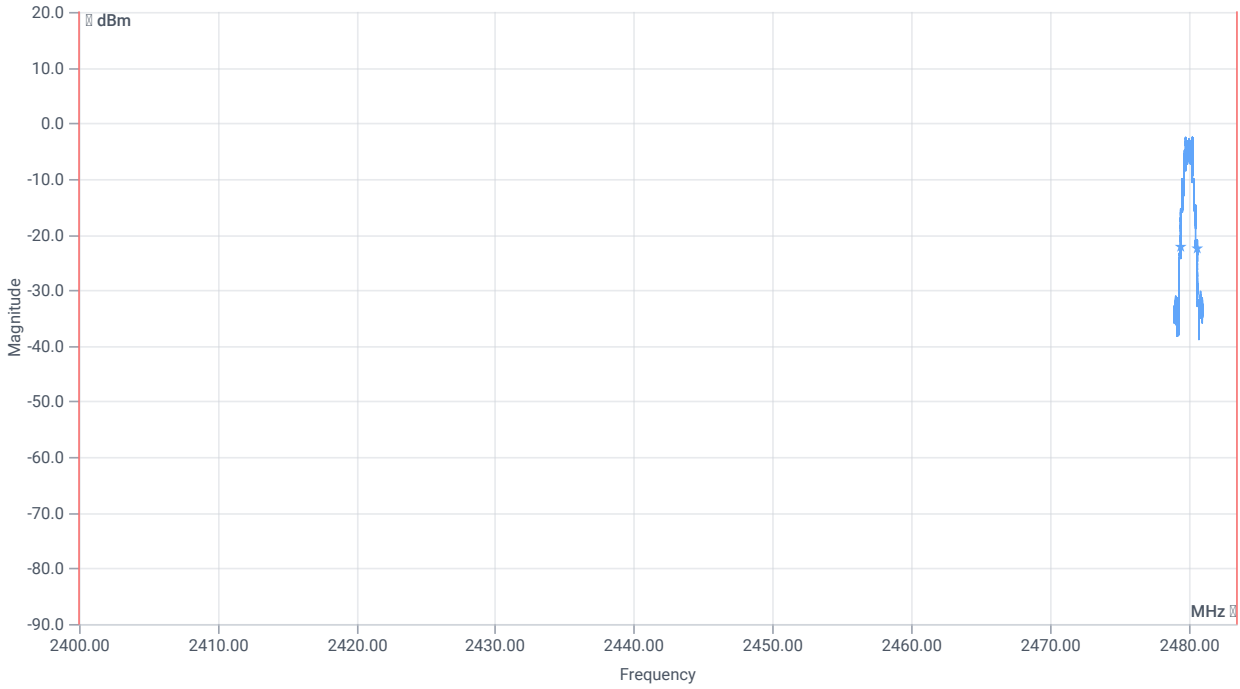
BW within Band 99PCT

## RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	--	--	1046.000	kHz	INFO
T1 99%	2400.000000	--	2479.4853	MHz	PASS
T2 99%	--	2483.500000	2480.5313	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 20dB	--	--	1189	kHz	INFO
T1 20dB	2400.000000	--	2479.4256	MHz	PASS
T2 20dB	--	2483.500000	2480.6144	MHz	PASS

Verdict

PASS

## FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 1 Msps

### References

TC start	15.11.2023 12:08:19
Ambit temp [°C]   humidity [rel%]	0.0   0
System version	4.7.1.2
Standard   Version	FCC 15.247   NI
Method	IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable
Description	FCC 15.247 TX Emissions Conducted DTS - BT LE 1 Msps
Information	

### EUT Common Settings BT Low Energy

Intermodulation Value N	3
Image Freq. Low   Mid   High [MHz]	0   0   0
Power Class	2
1 Mbps supported	True   TXpayload 255   RXpayload 255
2 Mbps supported	True   TXpayload 255   RXpayload 255
Longrange S8 supported	False   TXpayload 255   RXpayload 255
Longrange S2 supported	False   TXpayload 255   RXpayload 255
Signaling Settings	USB_RS232   HCI   3   9600   None   S1   None   On
Signaling RF Settings	RF1com   0   0   On
User Interaction	No
Switch Matrix & Pathcompensation enabled	Yes

### Test Parameter

Technology to test	BT LE 1 Msps
Antenna port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2402
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2480
Auto control enabled power supply   Climatic Box	No   No
Additional path loss [dB]	0.7
Full path name   type	EUT - SignalingUnit - SpectrumAnalyzer

### Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60
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## Equipment

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Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.190

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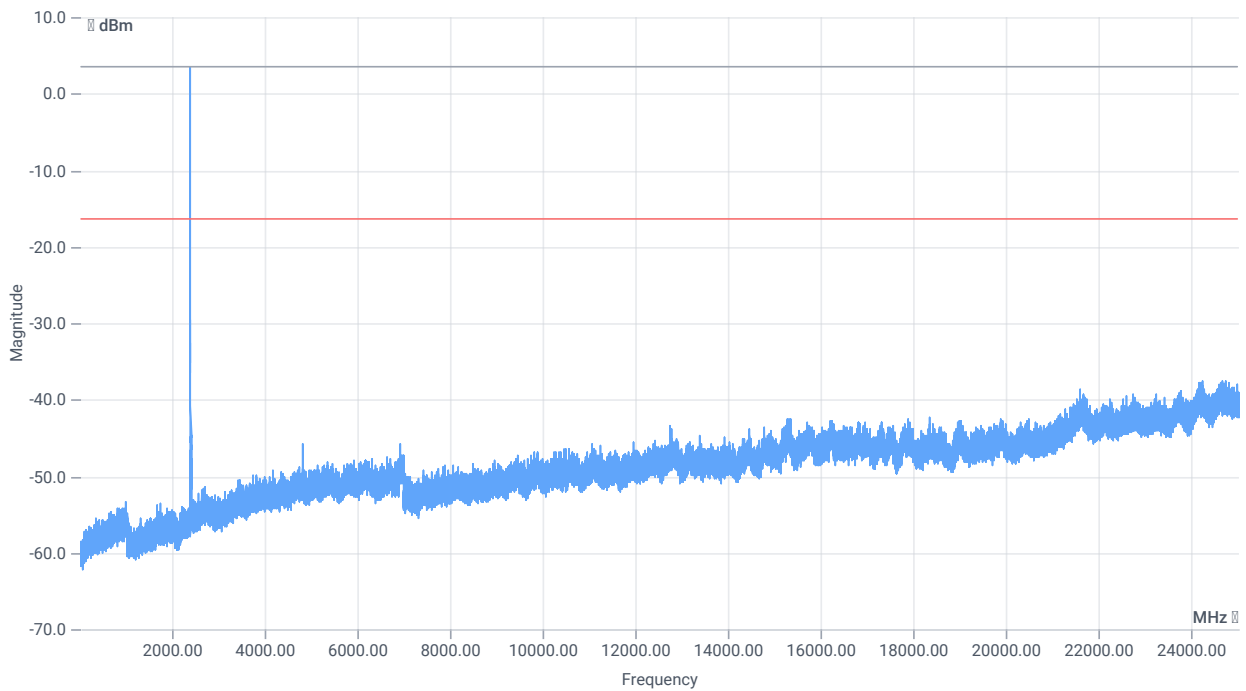
Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI

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## Test at TX 2402 MHz

RESULT: Reference Power cond.

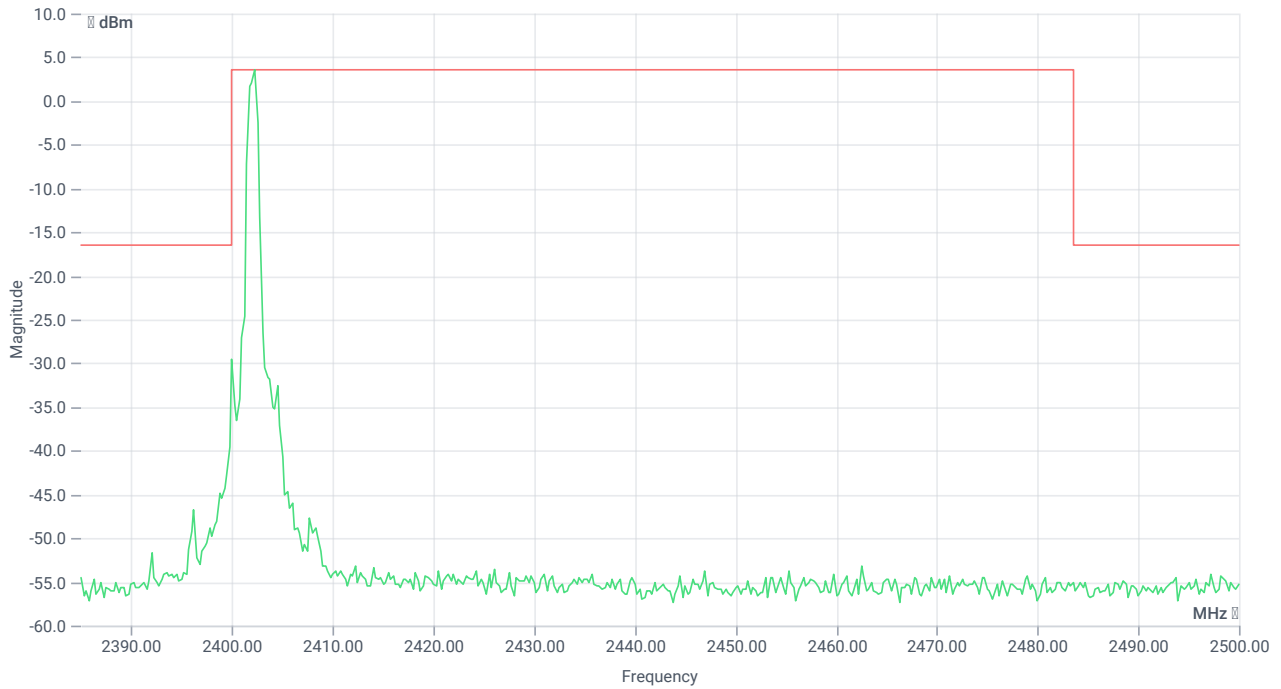
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	3.75	dBm	INFO
Ref. Frequency	--	--	2402.300	MHz	INFO



### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	3.75   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	200   25   2001   SWE





TX emissions band zoomed

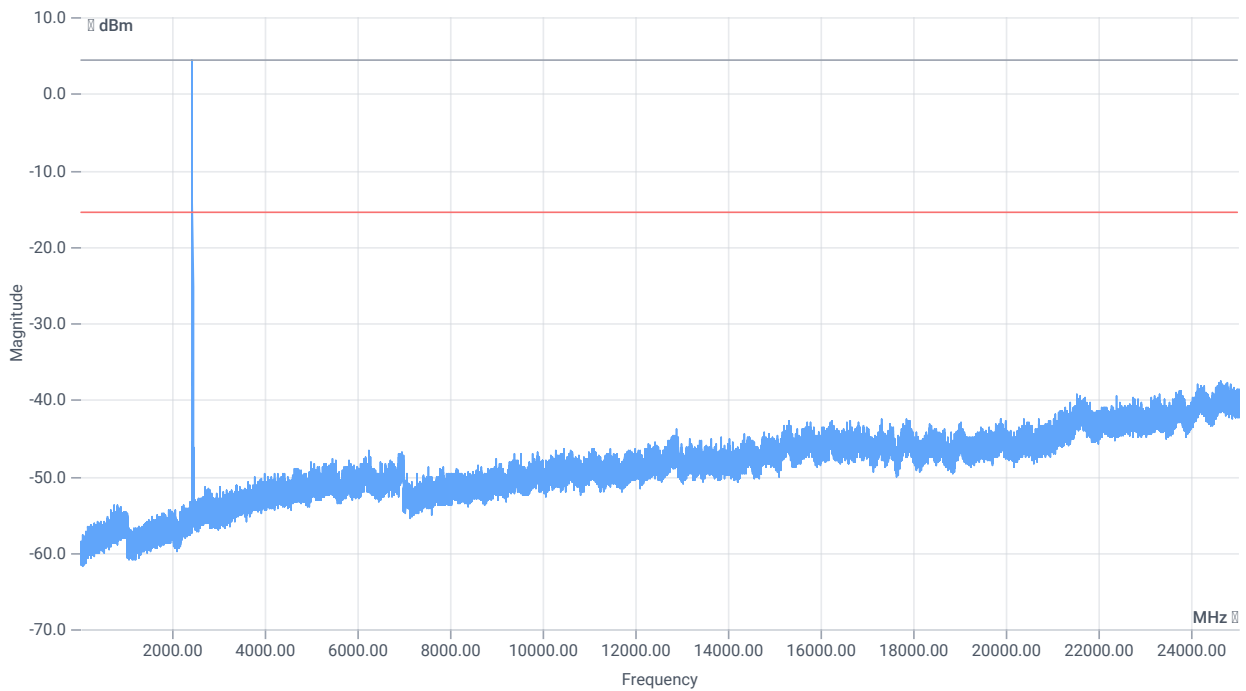
## RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Reference @ 2402.25 MHz	--	--	3.59	dBm	INFO
No peaks detected	--	--			PASS
Lowest margin to limit 24255.25 MHz	0	--	21.08	dB	INFO

## Test at TX 2440 MHz

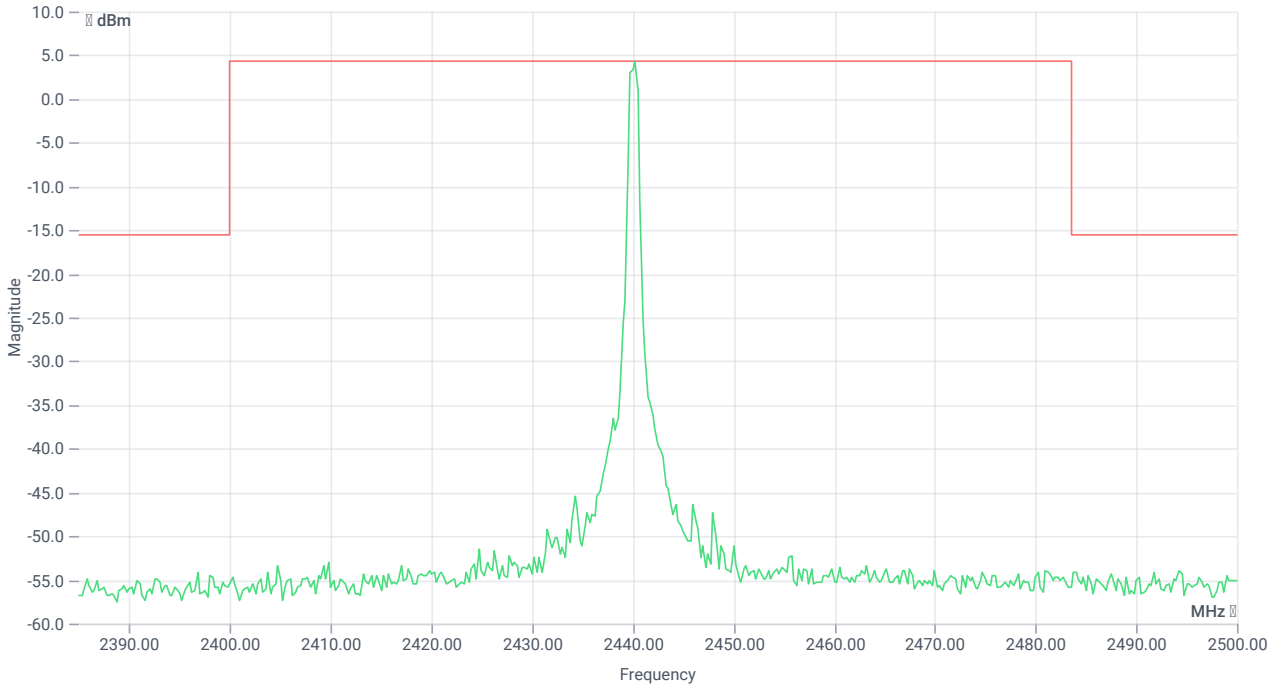
RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	4.65	dBm	INFO
Ref. Frequency	--	--	2440.300	MHz	INFO



### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	4.65   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	200   25   2001   SWE



TX emissions band zoomed

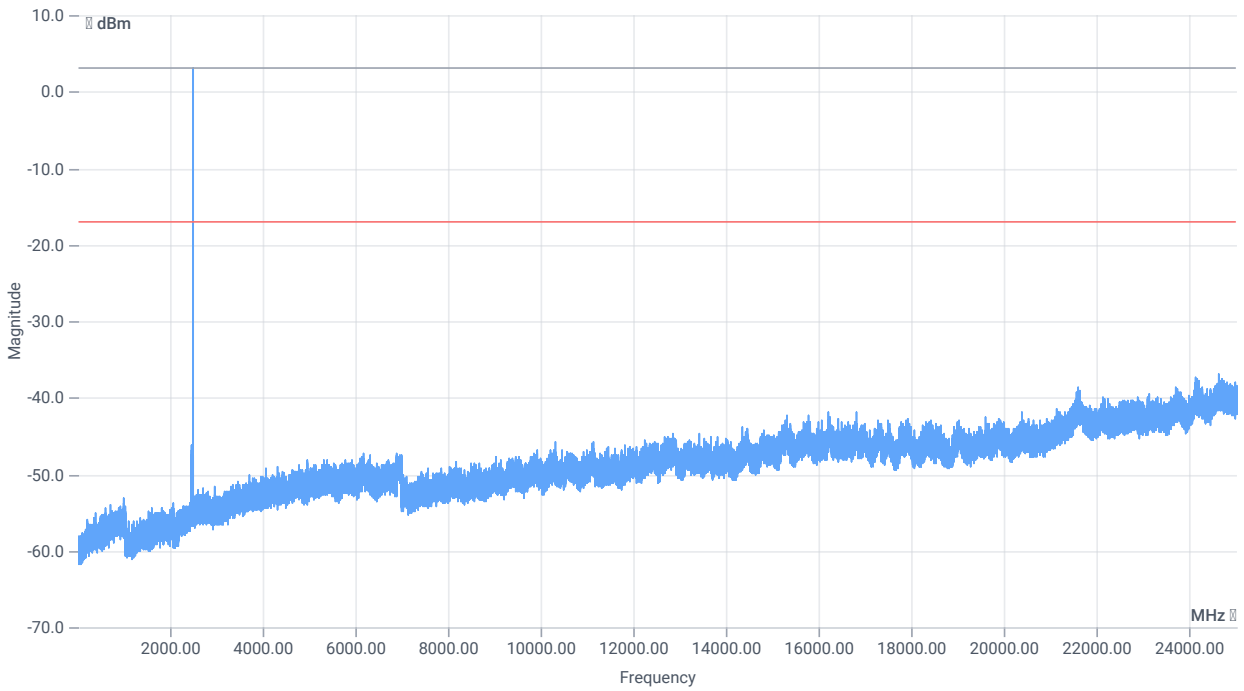
## RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Reference @ 2440.25 MHz	--	--	4.40	dBm	INFO
No peaks detected	--	--			PASS
Lowest margin to limit 30 MHz	0	--	-140.19	dB	INFO

## Test at TX 2480 MHz

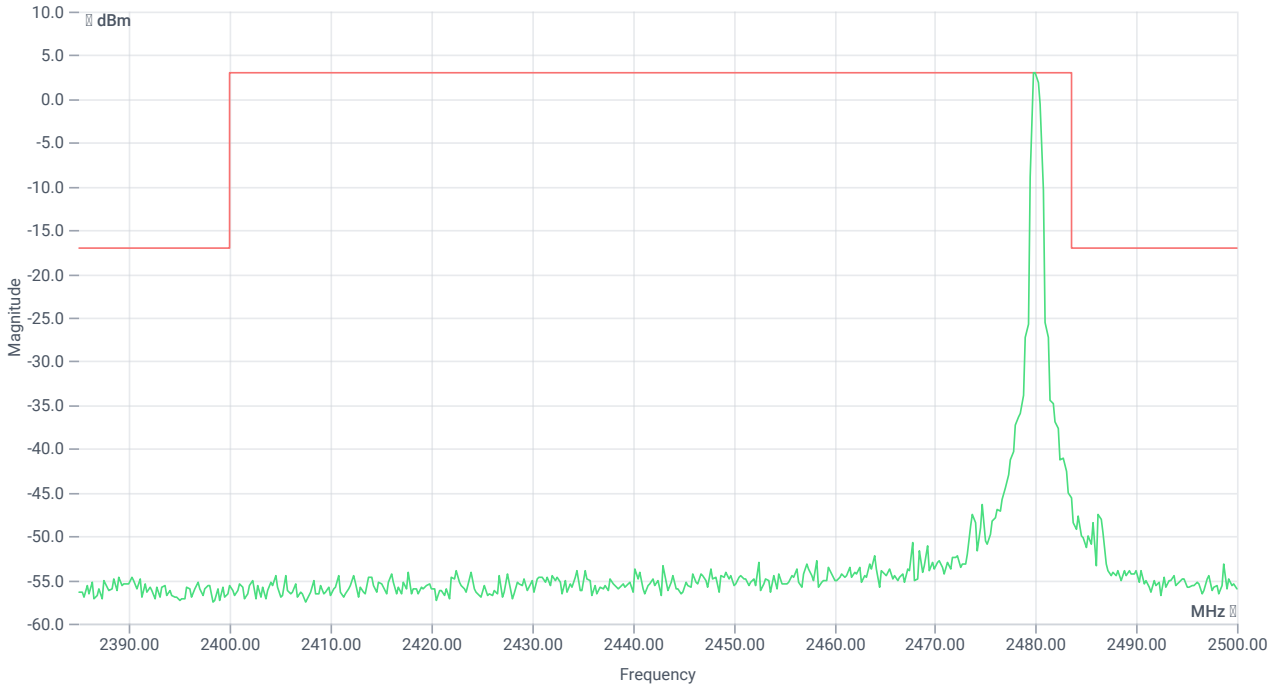
RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	3.95	dBm	INFO
Ref. Frequency	--	--	2480.300	MHz	INFO



### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	3.95   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	200   25   2001   SWE



TX emissions band zoomed

**RESULT**

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Reference @ 2479.75 MHz	--	--	2.98	dBm	INFO
No peaks detected	--	--			PASS
Lowest margin to limit 24638 MHz	0	--	19.89	dB	INFO

Verdict

PASS

# FCC 15.247 # Maximum peak conducted output power DTS ~ BT LE 2 Msps

## References

TC start	15.11.2023 12:28:17
Ambit temp [°C]   humidity [rel%]	0.0   0
System version	4.7.1.2
Standard   Version	FCC 15.247   NI
Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.1 RBW ≥ DTS Bandwidth
Description	FCC 15.247 Maximum Peak Output Power Conducted DTS - BT LE 2 Msps
Information	

## EUT Common Settings BT Low Energy

Intermodulation Value N	3
Image Freq. Low   Mid   High [MHz]	0   0   0
Power Class	2
1 Mbps supported	True   TXpayload 255   RXpayload 255
2 Mbps supported	True   TXpayload 255   RXpayload 255
Longrange S8 supported	False   TXpayload 255   RXpayload 255
Longrange S2 supported	False   TXpayload 255   RXpayload 255
Signaling Settings	USB_RS232   HCI   3   9600   None   S1   None   On
Signaling RF Settings	RF1com   0   0   On
User Interaction	No
Switch Matrix & Pathcompensation enabled	Yes

## Test Parameter

Technology to test	BT LE 2 Msps
Antenna port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2404
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2478
Auto control enabled power supply   Climatic Box	No   No
Additional path loss [dB]	0.7
Full path name   type	EUT - SignalingUnit - SpectrumAnalyzer

## Equipment

## Equipment

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Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60

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Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.190

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Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI

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## Test at TX 2404 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	7.58	dBm	INFO
Ref. Frequency	--	--	2404.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	12.58   11.3   20
Start [MHz]   Stop [MHz]	2401.700   2406.300
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE

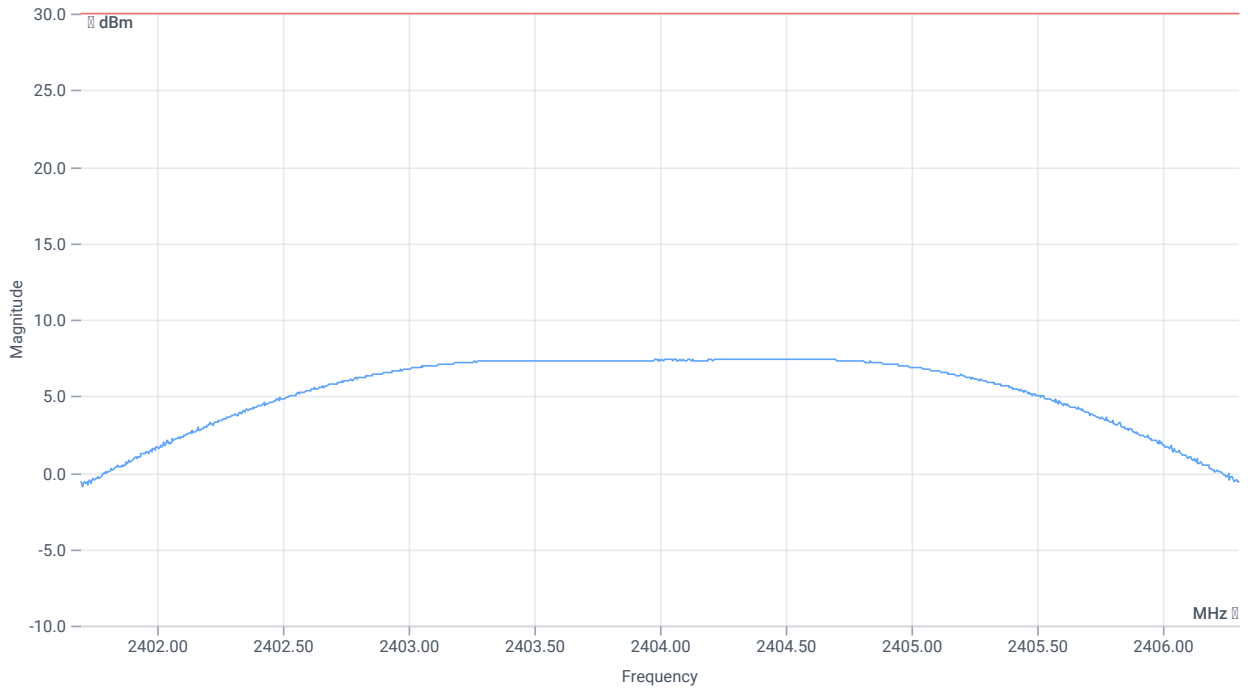
### DTS Bandwidth

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
DTS Bandwidth (6dB)	--	--	1194	kHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	17.58   11.3   25
Start [MHz]   Stop [MHz]	2401.700   2406.300
RBW [MHz]   VBW [MHz]	2.000000   5.000000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   1001   SWE





Peak output power

## RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak Power	--	30.00	7.43	dBm	PASS
Peak Power	--	1000	5.533501	mW	PASS
Frequency at Peak	--	--	2404.496	MHz	INFO

## Test at TX 2440 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	8.18	dBm	INFO
Ref. Frequency	--	--	2440.500	MHz	INFO

### READ SA SETTINGS:

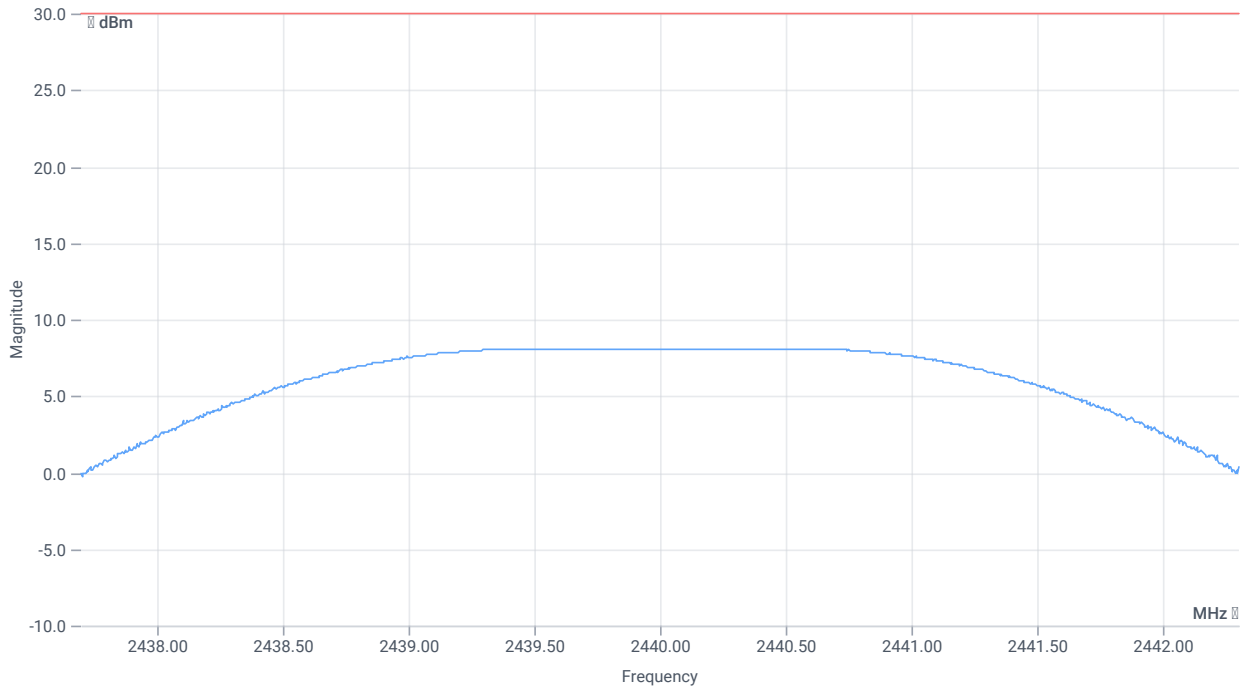
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	13.18   11.36   20
Start [MHz]   Stop [MHz]	2437.700   2442.300
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE

### DTS Bandwidth

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
DTS Bandwidth (6dB)	--	--	1195	kHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	18.18   11.36   25
Start [MHz]   Stop [MHz]	2437.700   2442.300
RBW [MHz]   VBW [MHz]	2.000000   5.000000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   1001   SWE



Peak output power

## RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak Power	--	30.00	8.1	dBm	PASS
Peak Power	--	1000	6.456542	mW	PASS
Frequency at Peak	--	--	2440.501	MHz	INFO

## Test at TX 2478 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	7.38	dBm	INFO
Ref. Frequency	--	--	2478.500	MHz	INFO

### READ SA SETTINGS:

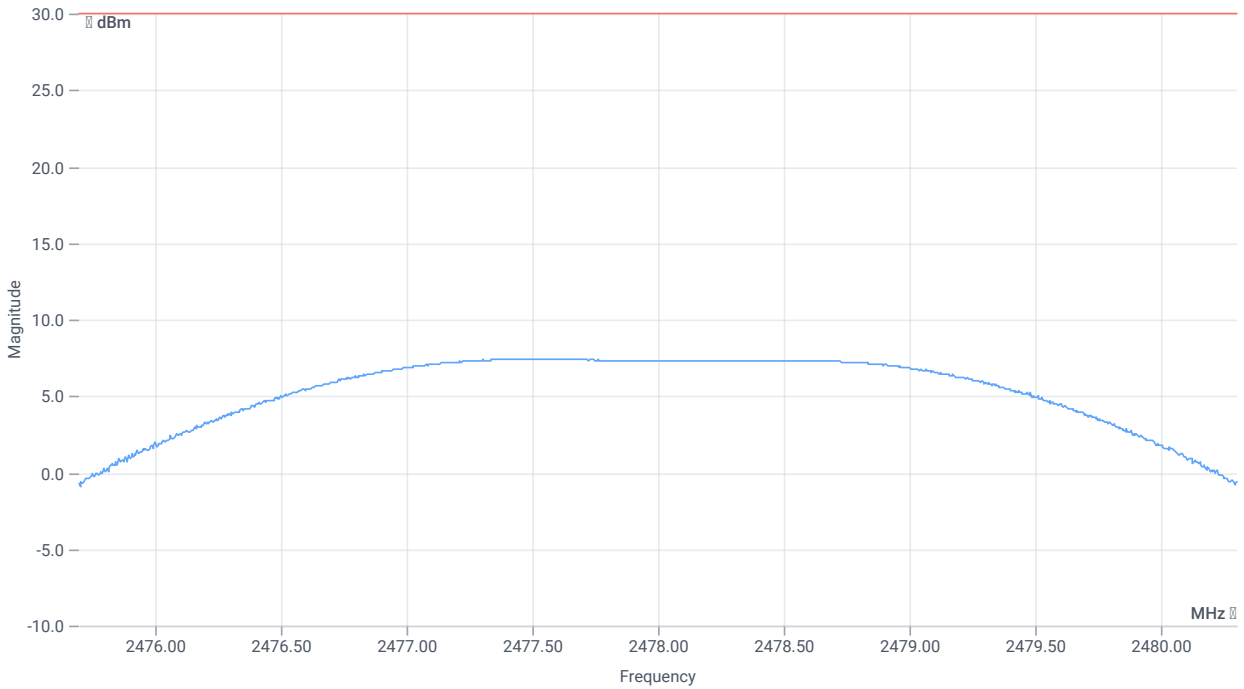
RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	12.38   11.4   20
Start [MHz]   Stop [MHz]	2475.700   2480.300
RBW [MHz]   VBW [MHz]	0.100000   0.300000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE

### DTS Bandwidth

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
DTS Bandwidth (6dB)	--	--	1186	kHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	17.38   11.4   25
Start [MHz]   Stop [MHz]	2475.700   2480.300
RBW [MHz]   VBW [MHz]	2.000000   5.000000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   1001   SWE



Peak output power

## RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak Power	--	30.00	7.4	dBm	PASS
Peak Power	--	1000	5.495409	mW	PASS
Frequency at Peak	--	--	2477.527	MHz	INFO

Verdict

PASS

## FCC 15.247 # Bandwidth 6dB DTS ~ BT LE 2 Msp

### References

TC start	15.11.2023 12:30:18
Ambit temp [°C]   humidity [rel%]	0.0   0
System version	4.7.1.2
Standard   Version	FCC 15.247   NI
Method	
Description	FCC 15.247 Bandwidth 6dB DTS - BT LE 2 Msp
Information	

### EUT Common Settings BT Low Energy

Intermodulation Value N	3
Image Freq. Low   Mid   High [MHz]	0   0   0
Power Class	2
1 Mbps supported	True   TXpayload 255   RXpayload 255
2 Mbps supported	True   TXpayload 255   RXpayload 255
Longrange S8 supported	False   TXpayload 255   RXpayload 255
Longrange S2 supported	False   TXpayload 255   RXpayload 255
Signaling Settings	USB_RS232   HCI   3   9600   None   S1   None   On
Signaling RF Settings	RF1com   0   0   On
User Interaction	No
Switch Matrix & Pathcompensation enabled	Yes

### Test Parameter

Technology to test	BT LE 2 Msp
Antenna port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2404
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2478
Auto control enabled power supply   Climatic Box	No   No
Additional path loss [dB]	0.7
Full path name   type	EUT - SignalingUnit - SpectrumAnalyzer

### Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.190

## Equipment

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Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI

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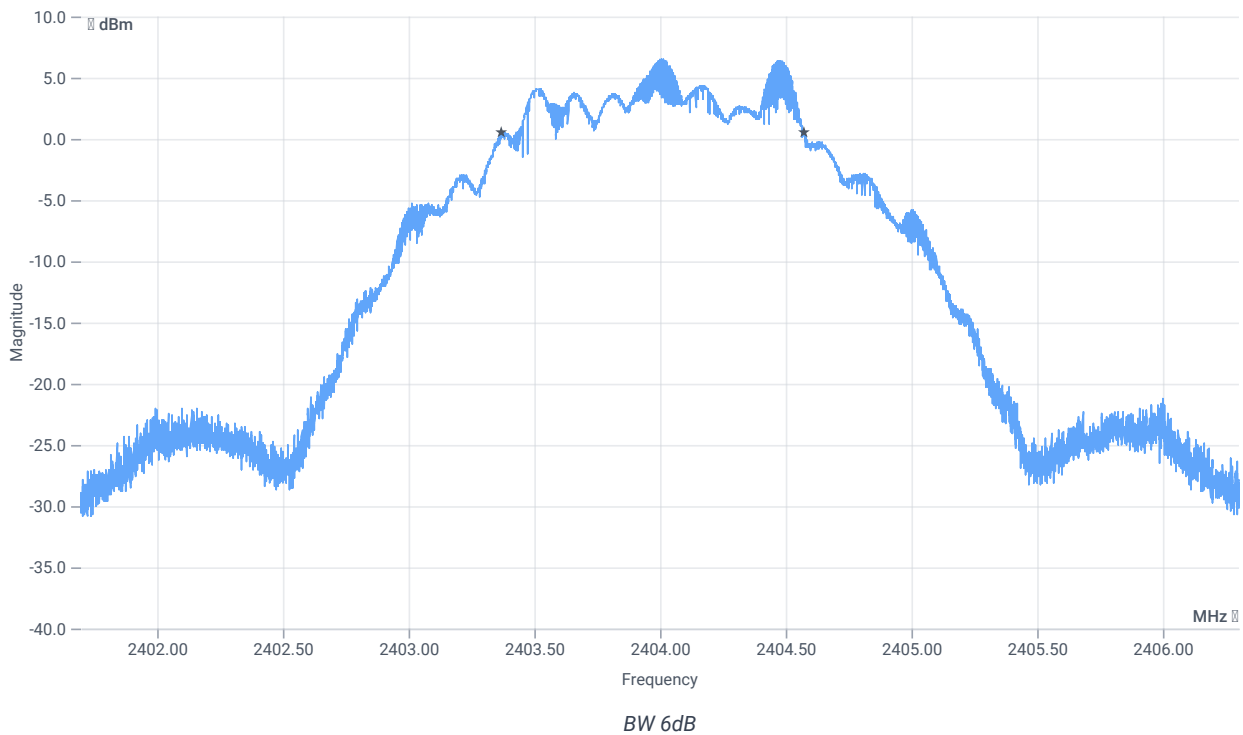
## Test at TX 2404 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	7.58	dBm	INFO
Ref. Frequency	--	--	2404.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	12.58   11.3   20
Start [MHz]   Stop [MHz]	2401.700   2406.300
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

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
DTS Bandwidth (6dB)	500	--	1202	kHz	PASS



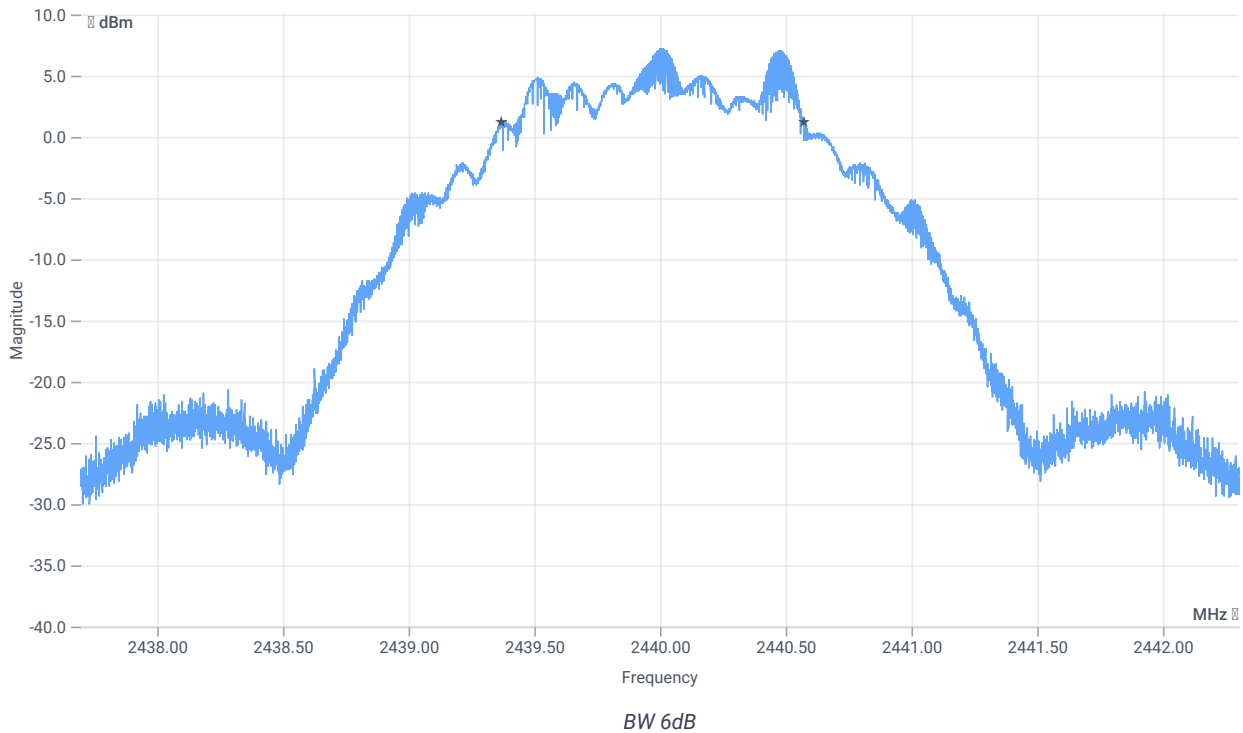
## Test at TX 2440 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	8.19	dBm	INFO
Ref. Frequency	--	--	2440.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	13.19   11.36   20
Start [MHz]   Stop [MHz]	2437.700   2442.300
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

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
DTS Bandwidth (6dB)	500	--	1201	kHz	PASS

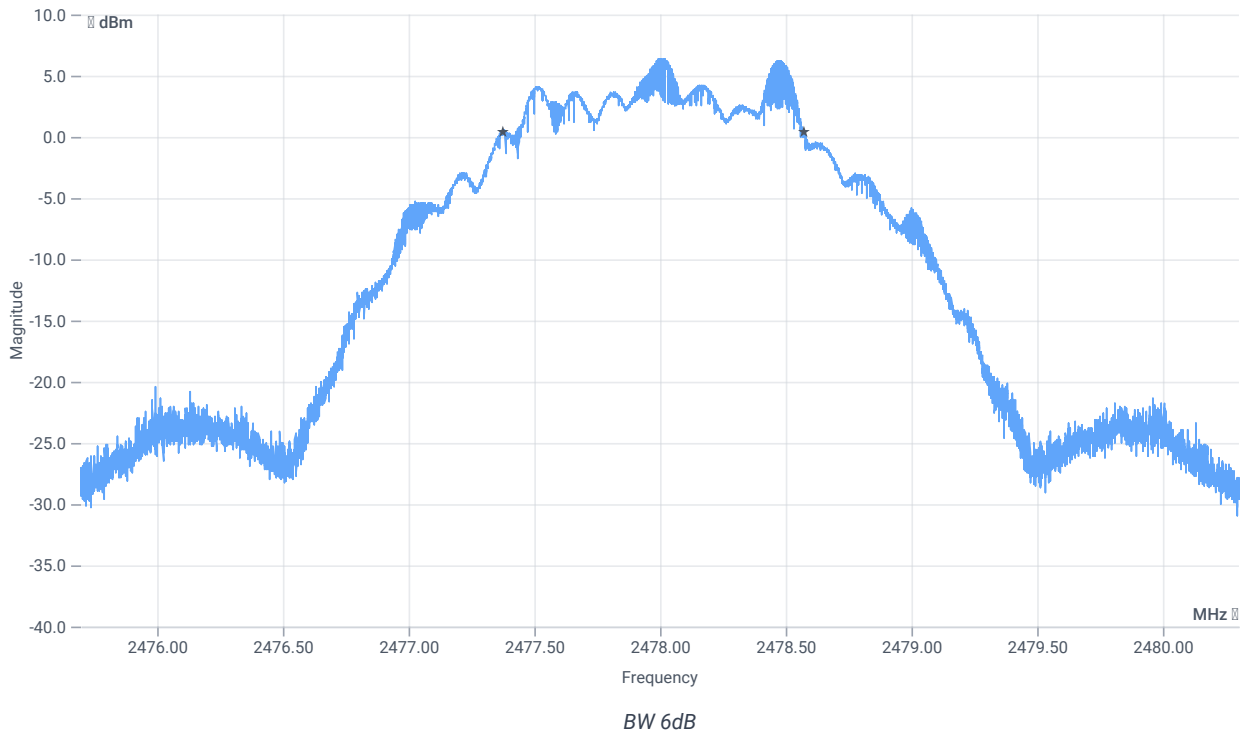
## Test at TX 2478 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	7.41	dBm	INFO
Ref. Frequency	--	--	2478.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	12.41   11.4   20
Start [MHz]   Stop [MHz]	2475.700   2480.300
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

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
DTS Bandwidth (6dB)	500	--	1195	kHz	PASS

Verdict

PASS

## FCC 15.247 # Peak psd DTS ~ BT LE 2 Msps

### References

TC start	15.11.2023 12:31:40
Ambit temp [°C]   humidity [rel%]	0.0   0
System version	4.7.1.2
Standard   Version	FCC 15.247   NI
Method	DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission
Description	FCC 15.247 Peak psd DTS - BT LE 2 Msps
Information	

### EUT Common Settings BT Low Energy

Intermodulation Value N	3
Image Freq. Low   Mid   High [MHz]	0   0   0
Power Class	2
1 Mbps supported	True   TXpayload 255   RXpayload 255
2 Mbps supported	True   TXpayload 255   RXpayload 255
Longrange S8 supported	False   TXpayload 255   RXpayload 255
Longrange S2 supported	False   TXpayload 255   RXpayload 255
Signaling Settings	USB_RS232   HCI   3   9600   None   S1   None   On
Signaling RF Settings	RF1com   0   0   On
User Interaction	No
Switch Matrix & Pathcompensation enabled	Yes

### Test Parameter

Technology to test	BT LE 2 Msps
Antenna port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2404
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2478
Auto control enabled power supply   Climatic Box	No   No
Additional path loss [dB]	0.7
Full path name   type	EUT - SignalingUnit - SpectrumAnalyzer

### Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60
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## Equipment

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Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.190

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Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI

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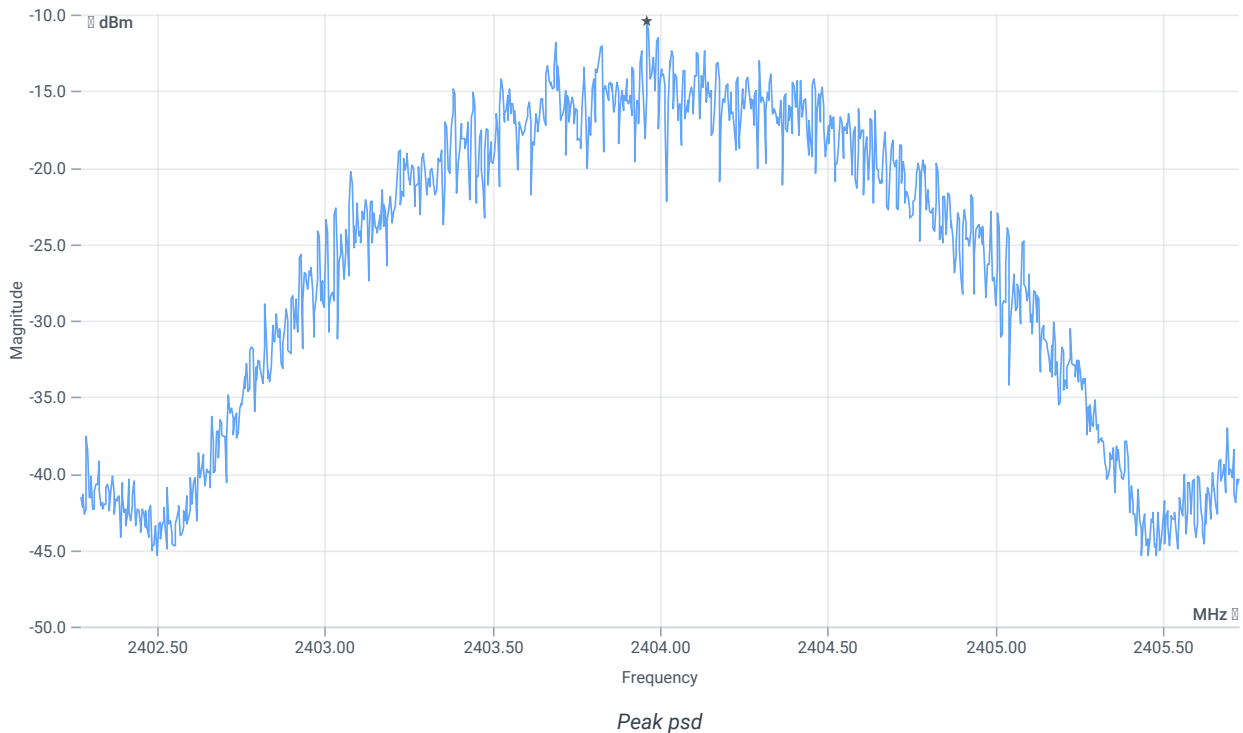
## Test at TX 2404 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	7.59	dBm	INFO
Ref. Frequency	--	--	2404.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	12.59   11.3   20
Start [MHz]   Stop [MHz]	2402.275   2405.725
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

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak psd	--	8	-10.46	dBm/3KHz	PASS

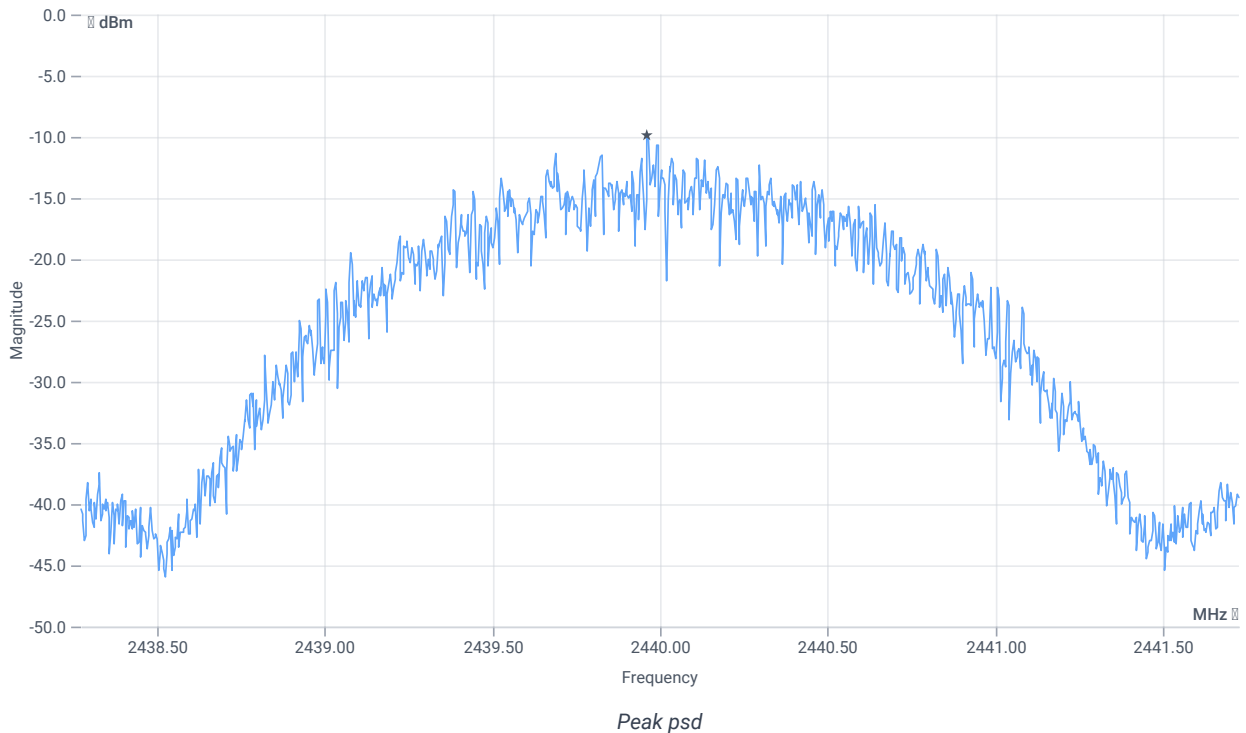
## Test at TX 2440 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	8.18	dBm	INFO
Ref. Frequency	--	--	2440.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	13.18   11.36   20
Start [MHz]   Stop [MHz]	2438.275   2441.725
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

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak psd	--	8	-9.8	dBm/3KHz	PASS

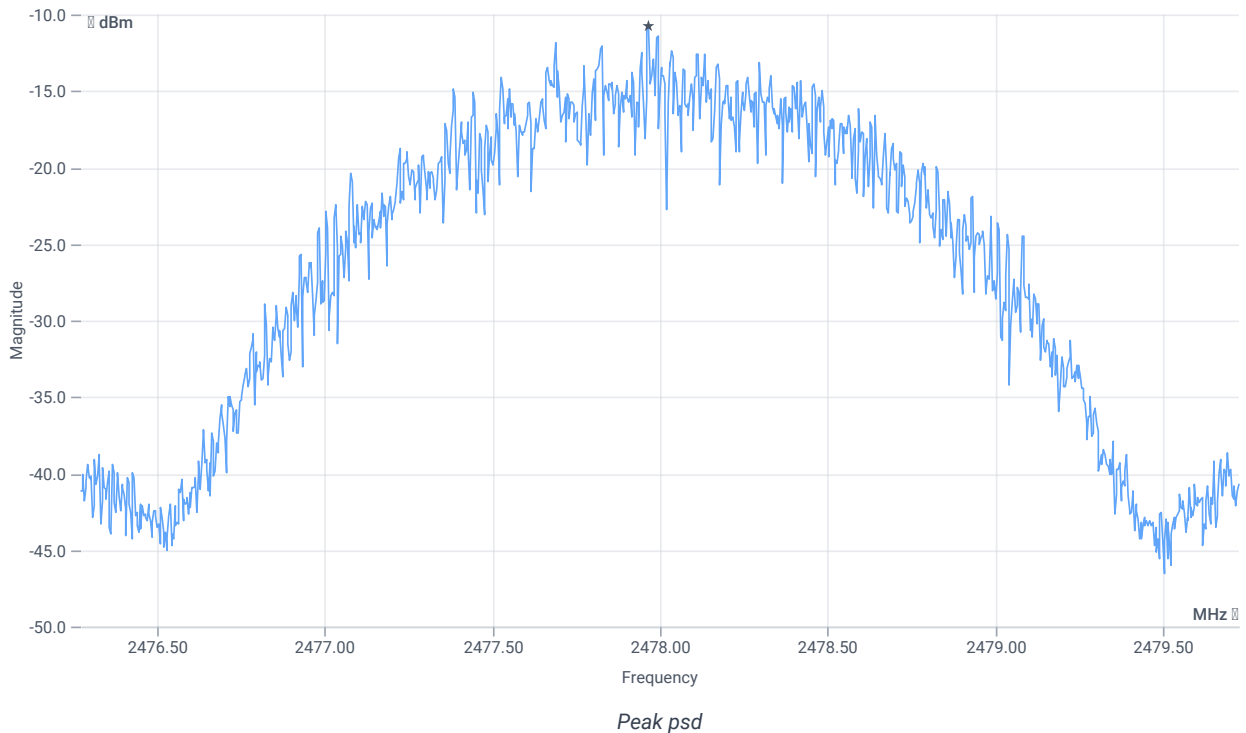
## Test at TX 2478 MHz

RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	7.40	dBm	INFO
Ref. Frequency	--	--	2478.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	12.40   11.4   20
Start [MHz]   Stop [MHz]	2476.275   2479.725
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

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak psd	--	8	-10.75	dBm/3KHz	PASS

Verdict

PASS

# FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ BT LE 2 Msps

## References

TC start	15.11.2023 12:33:31
Ambit temp [°C]   humidity [rel%]	0.0   0
System version	4.7.1.2
Standard   Version	FCC 15.247, ISED RSS247   NI
Method	
Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - BT LE 2 Msps
Information	

## EUT Common Settings BT Low Energy

Intermodulation Value N	3
Image Freq. Low   Mid   High [MHz]	0   0   0
Power Class	2
1 Mbps supported	True   TXpayload 255   RXpayload 255
2 Mbps supported	True   TXpayload 255   RXpayload 255
Longrange S8 supported	False   TXpayload 255   RXpayload 255
Longrange S2 supported	False   TXpayload 255   RXpayload 255
Signaling Settings	USB_RS232   HCI   3   9600   None   S1   None   On
Signaling RF Settings	RF1com   0   0   On
User Interaction	No
Switch Matrix & Pathcompensation enabled	Yes

## Test Parameter

Technology to test	BT LE 2 Msps
Antenna port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2404
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2478
Auto control enabled power supply   Climatic Box	No   No
Additional path loss [dB]	0.7
Full path name   type	EUT - SignalingUnit - SpectrumAnalyzer

## Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60



## Equipment

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Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.190

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Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI

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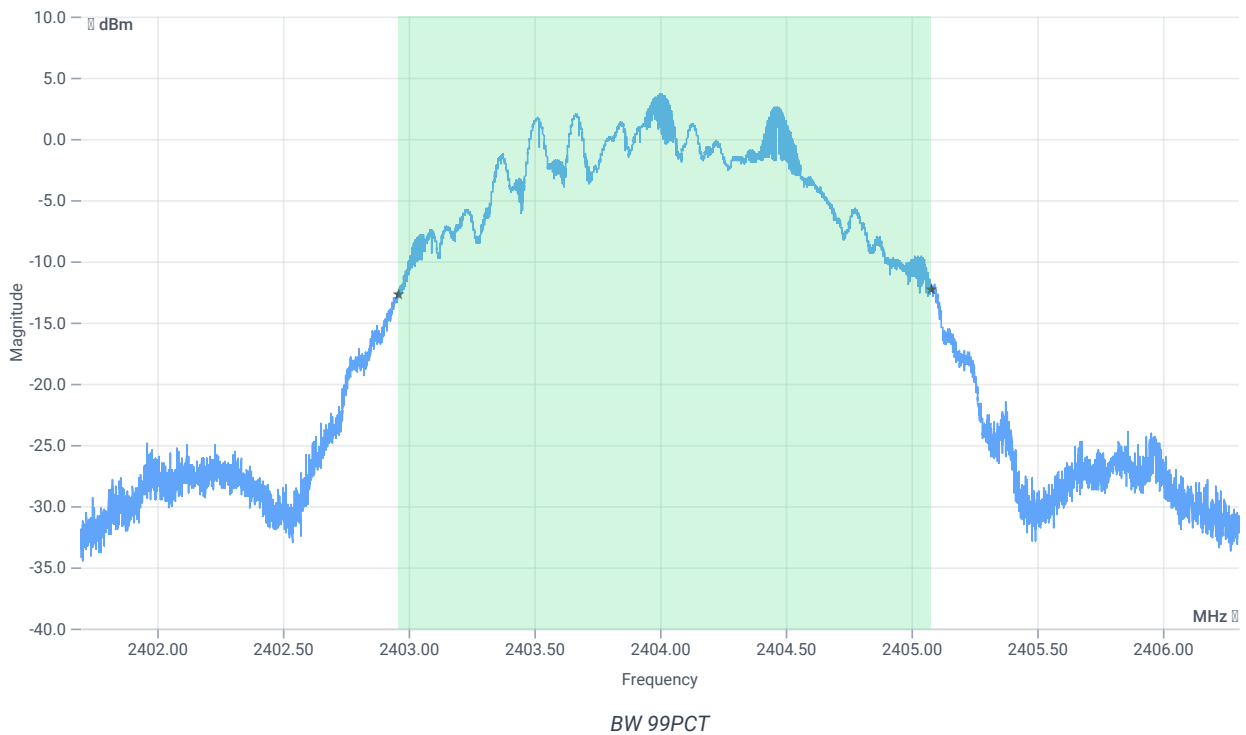
## Test at TX 2404 MHz

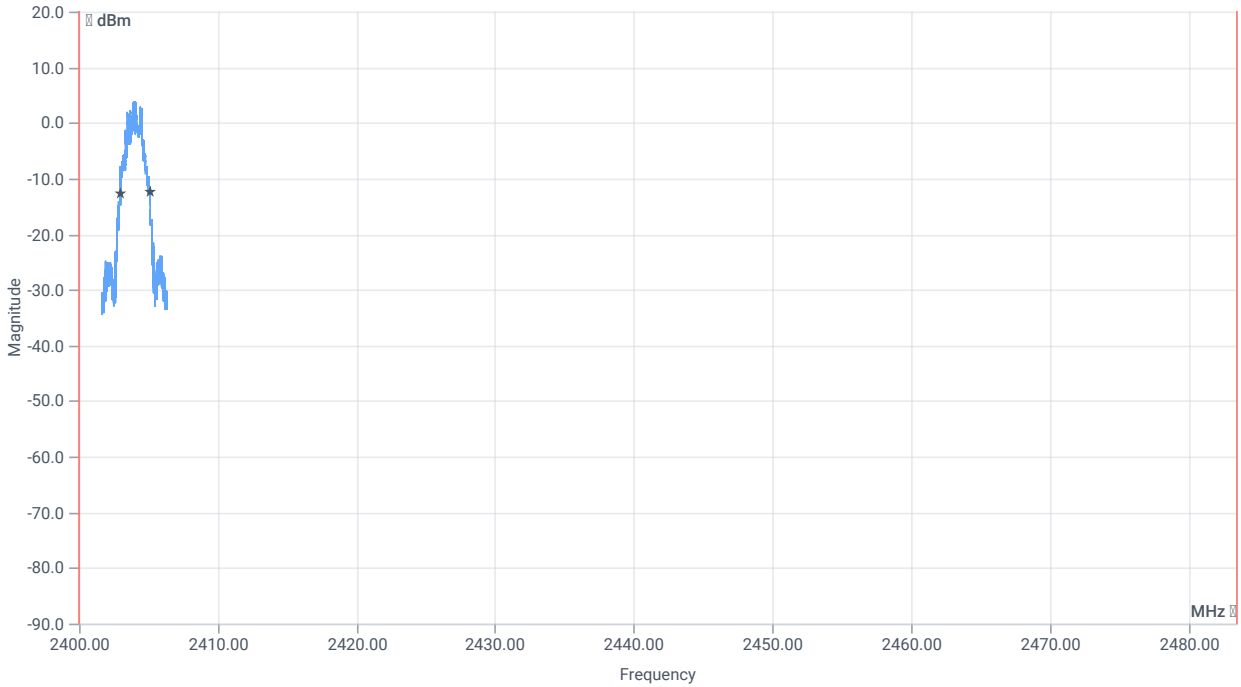
RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	7.64	dBm	INFO
Ref. Frequency	--	--	2404.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	12.64   11.3   20
Start [MHz]   Stop [MHz]	2401.700   2406.300
RBW [MHz]   VBW [MHz]	0.050000   0.200000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE

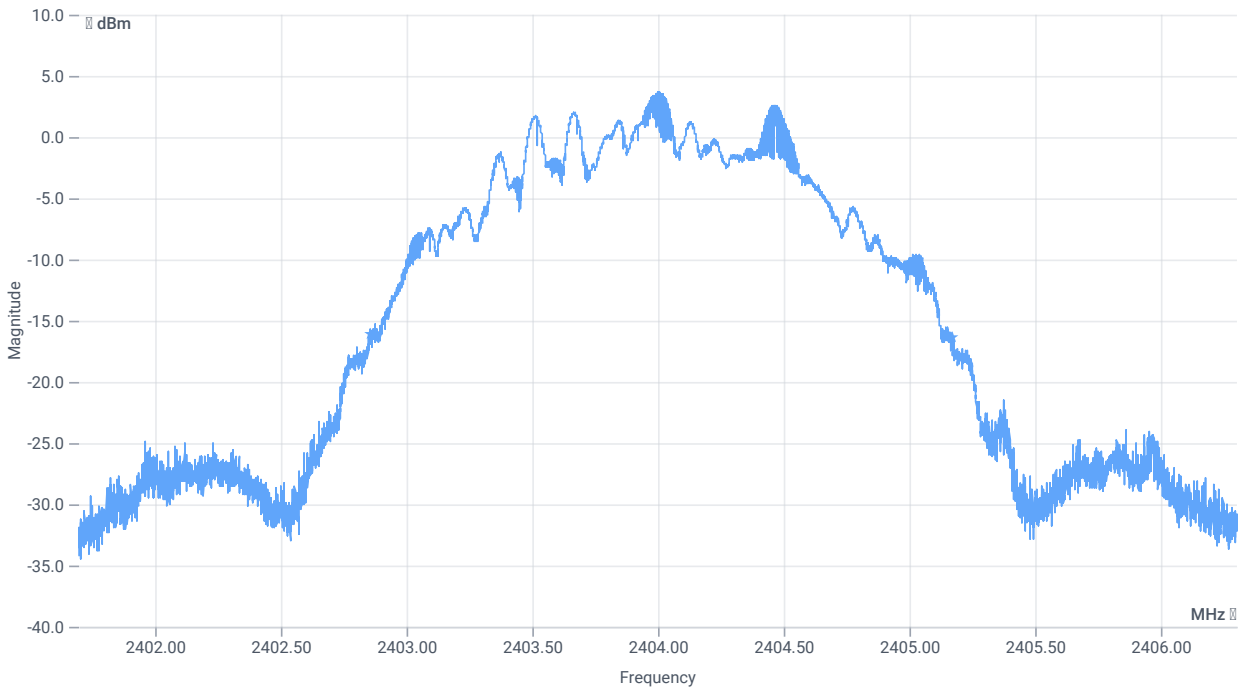




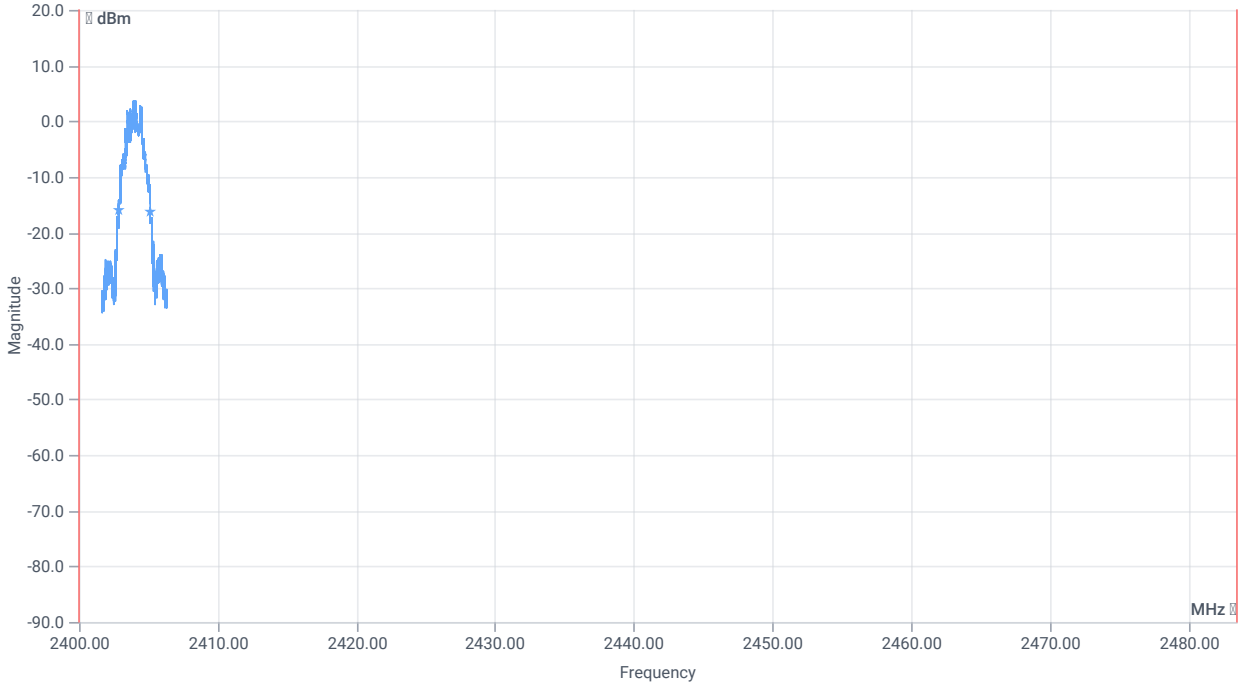
BW within Band 99PCT

RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	--	--	2116.000	kHz	INFO
T1 99%	2400.000000	--	2402.9587	MHz	PASS
T2 99%	--	2483.500000	2405.0749	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 20dB	--	--	2310	kHz	INFO
T1 20dB	2400.000000	--	2402.8574	MHz	PASS
T2 20dB	--	2483.500000	2405.1670	MHz	PASS

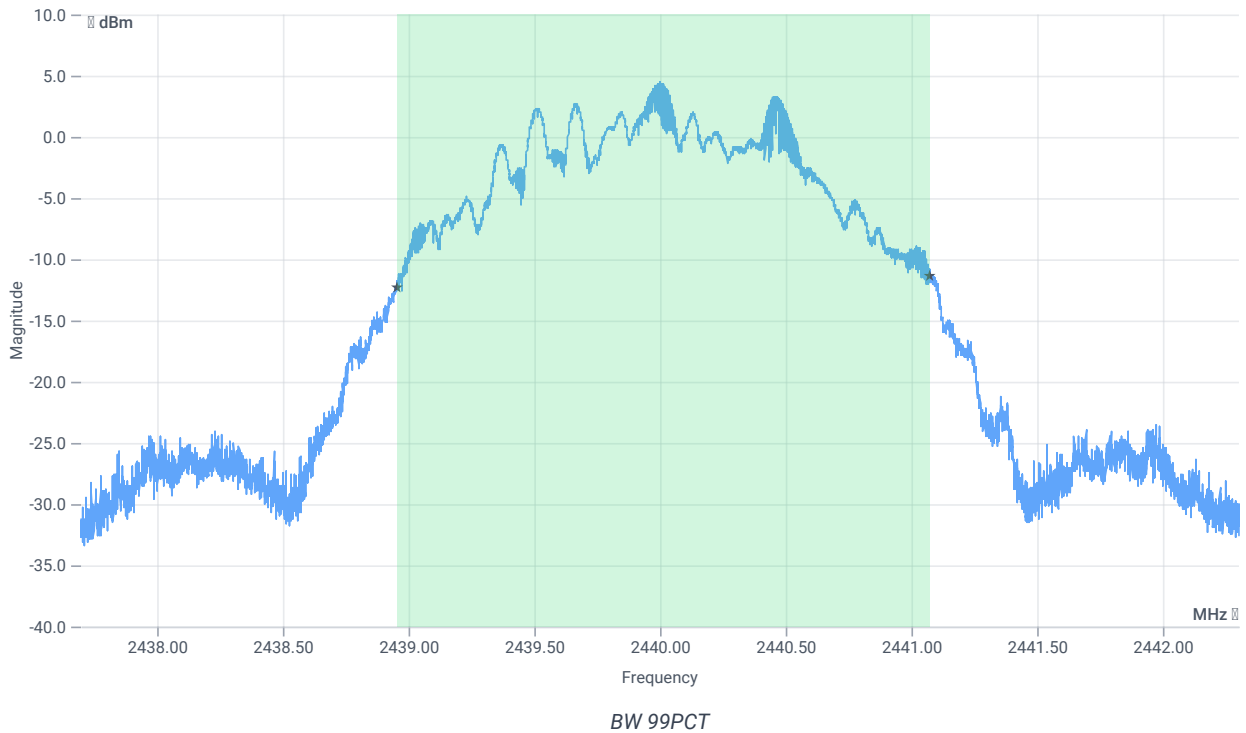
## Test at TX 2440 MHz

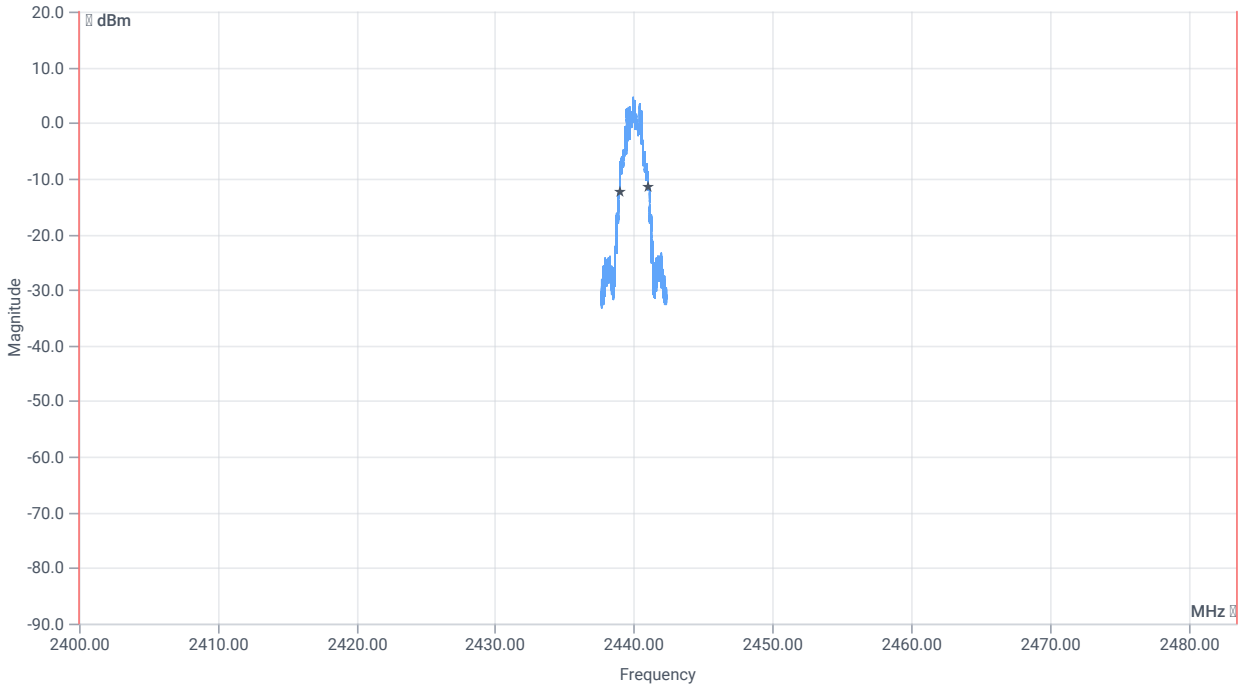
RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	8.20	dBm	INFO
Ref. Frequency	--	--	2440.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	13.20   11.36   20
Start [MHz]   Stop [MHz]	2437.700   2442.300
RBW [MHz]   VBW [MHz]	0.050000   0.200000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE

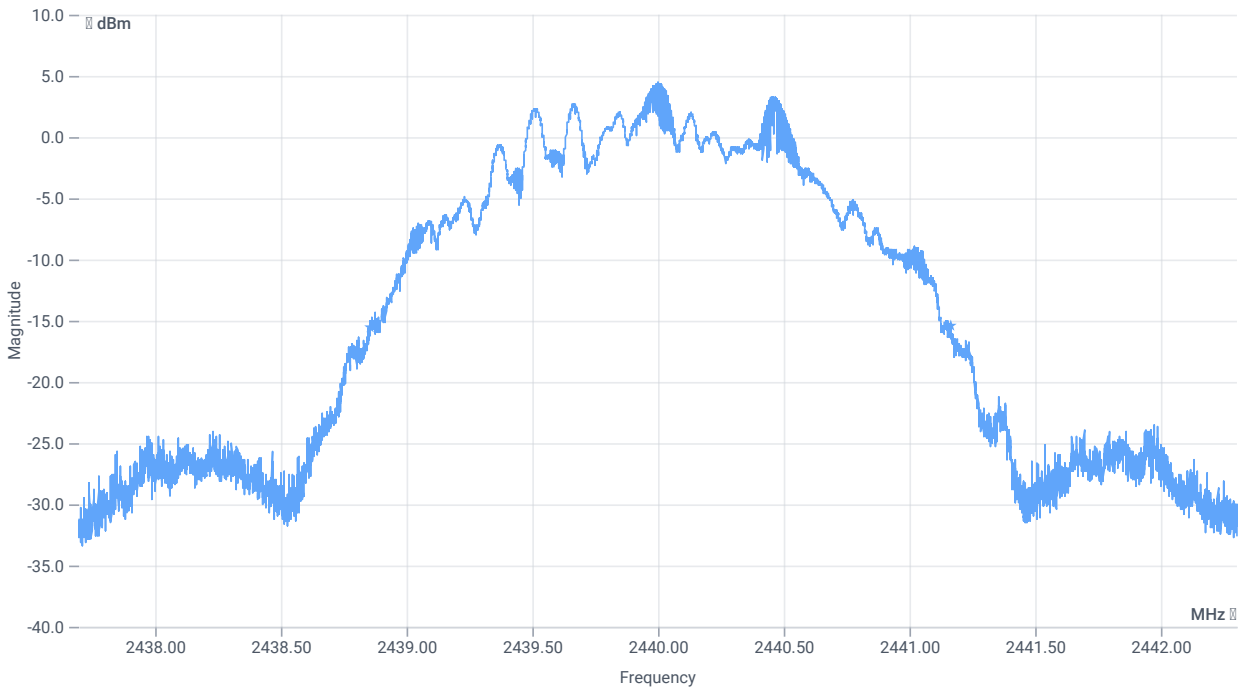




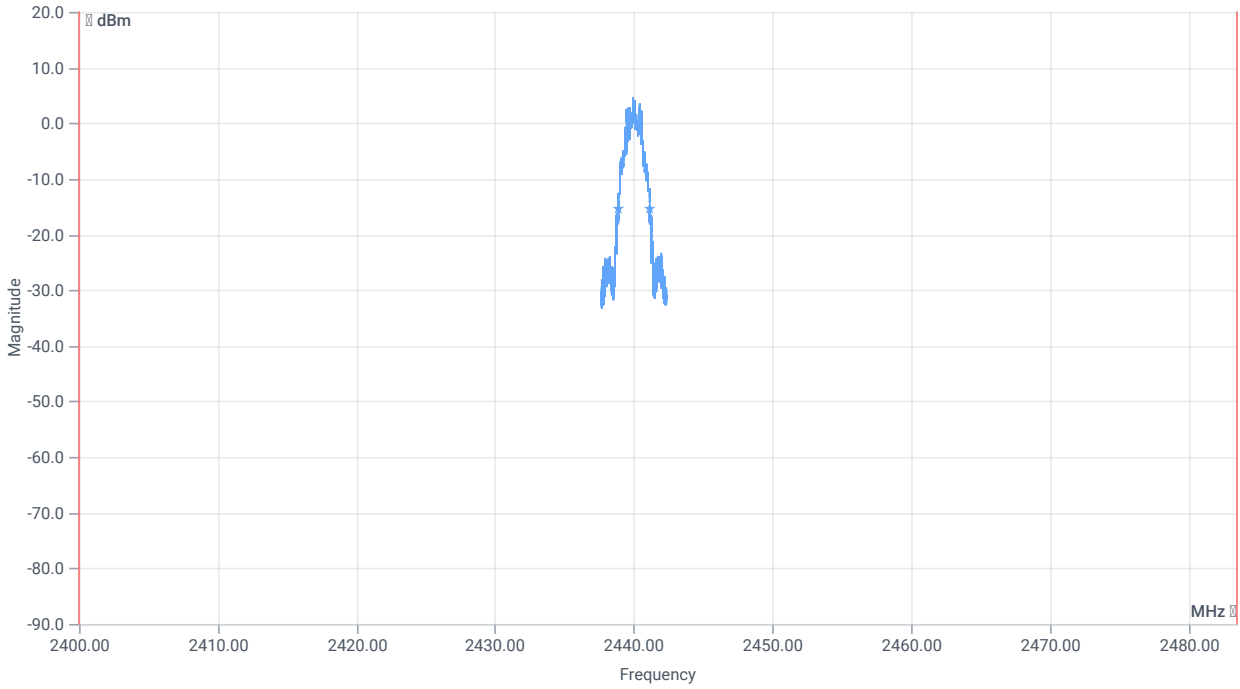
BW within Band 99PCT

**RESULT**

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	--	--	2118.000	kHz	INFO
T1 99%	2400.000000	--	2438.9564	MHz	PASS
T2 99%	--	2483.500000	2441.0740	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 20dB	--	--	2308	kHz	INFO
T1 20dB	2400.000000	--	2438.8564	MHz	PASS
T2 20dB	--	2483.500000	2441.1647	MHz	PASS

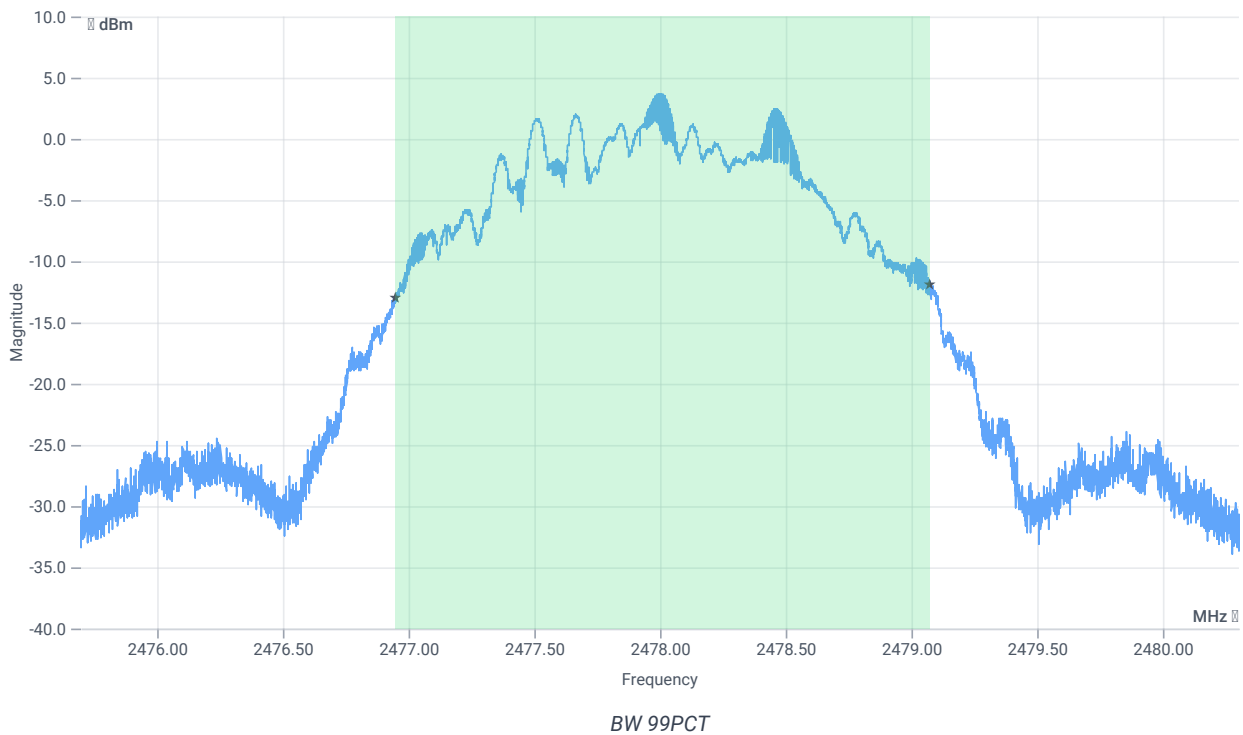
## Test at TX 2478 MHz

RESULT: Reference Power cond.

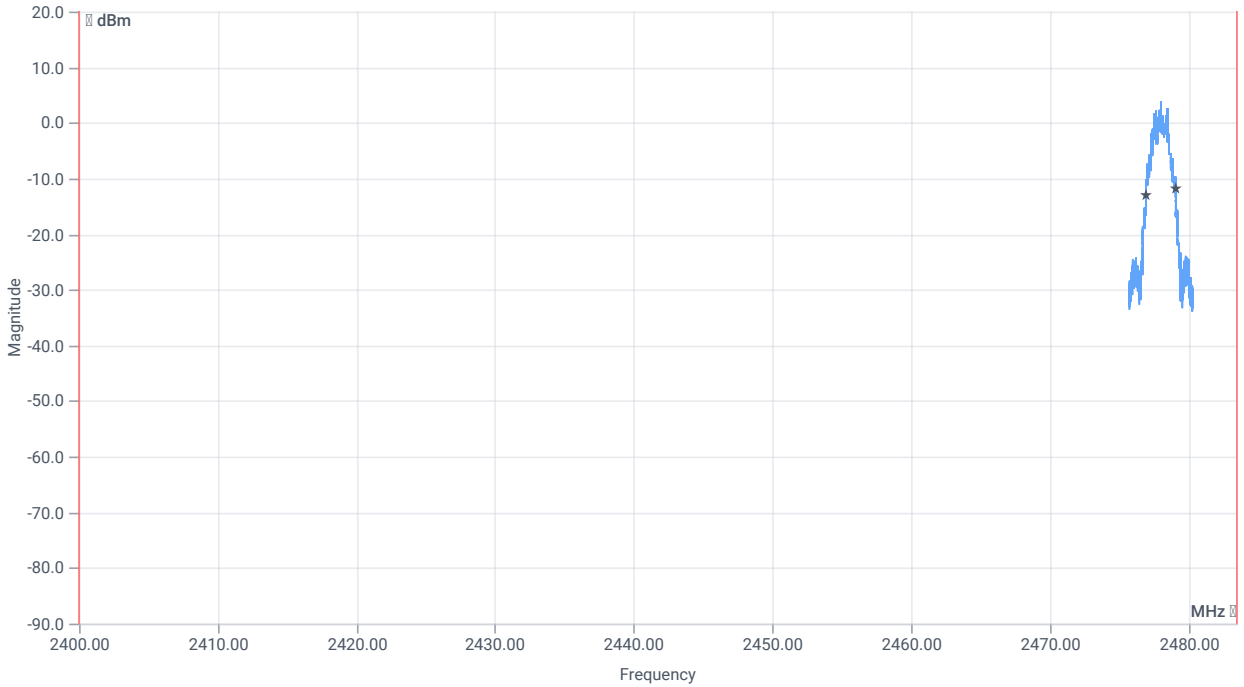
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	7.39	dBm	INFO
Ref. Frequency	--	--	2478.500	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	12.39   11.4   20
Start [MHz]   Stop [MHz]	2475.700   2480.300
RBW [MHz]   VBW [MHz]	0.050000   0.200000
Detector   TraceMode	POS   MAXH
Sweep: time [ms]   count   points per Section   type	50   200   10001   SWE



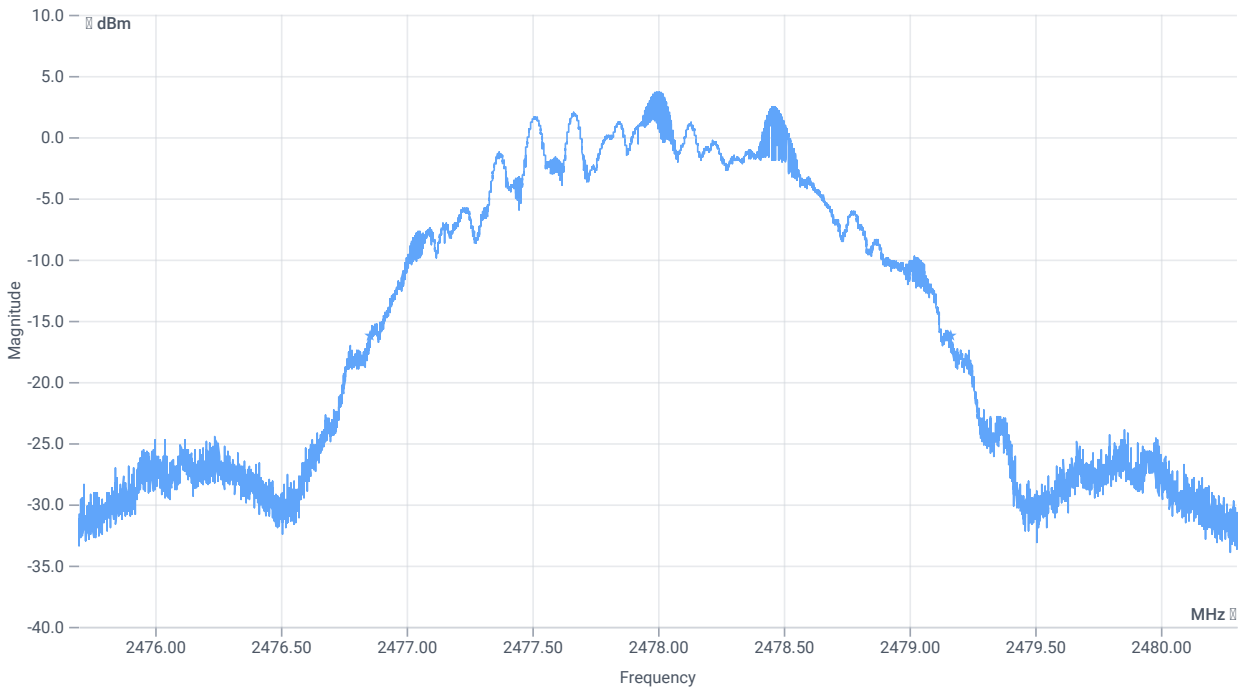




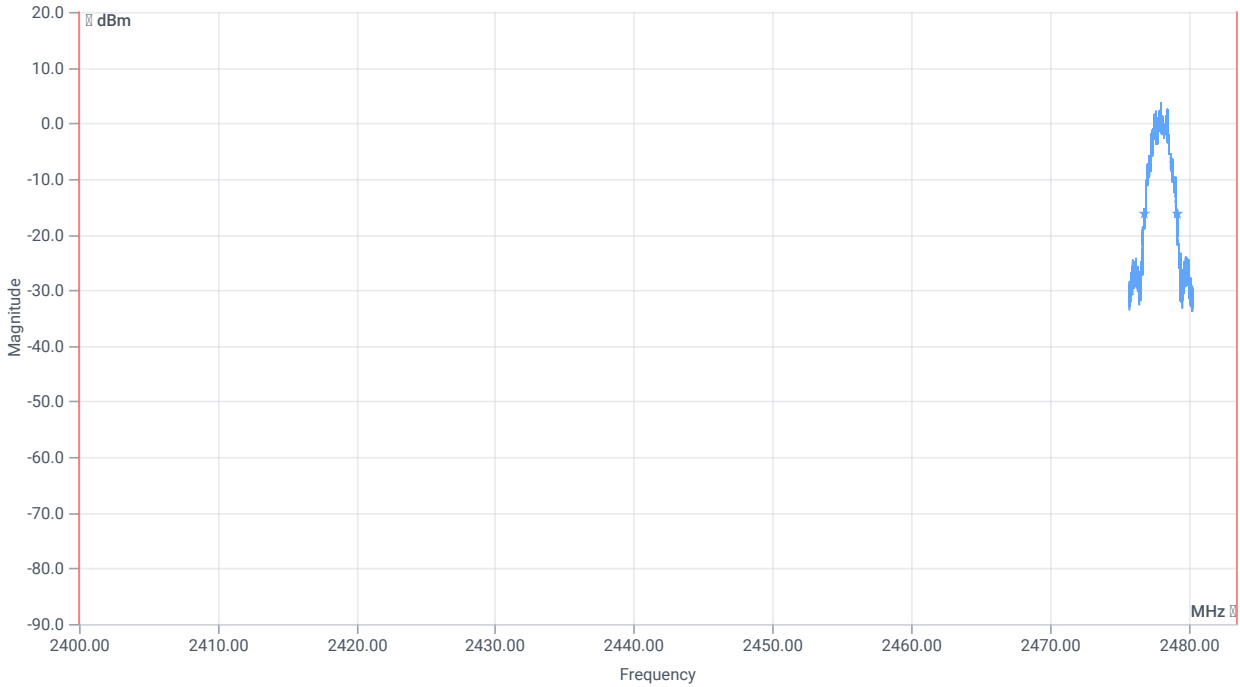
BW within Band 99PCT

**RESULT**

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	--	--	2121.000	kHz	INFO
T1 99%	2400.000000	--	2476.9518	MHz	PASS
T2 99%	--	2483.500000	2479.0726	MHz	PASS



BW 20dB



BW within Band 20dB

## RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 20dB	--	--	2308	kHz	INFO
T1 20dB	2400.000000	--	2476.8555	MHz	PASS
T2 20dB	--	2483.500000	2479.1633	MHz	PASS

Verdict

PASS

## FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 2 Msps

### References

TC start	15.11.2023 12:35:17
Ambit temp [°C]   humidity [rel%]	0.0   0
System version	4.7.1.2
Standard   Version	FCC 15.247   NI
Method	IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable
Description	FCC 15.247 TX Emissions Conducted DTS - BT LE 2 Msps
Information	

### EUT Common Settings BT Low Energy

Intermodulation Value N	3
Image Freq. Low   Mid   High [MHz]	0   0   0
Power Class	2
1 Mbps supported	True   TXpayload 255   RXpayload 255
2 Mbps supported	True   TXpayload 255   RXpayload 255
Longrange S8 supported	False   TXpayload 255   RXpayload 255
Longrange S2 supported	False   TXpayload 255   RXpayload 255
Signaling Settings	USB_RS232   HCI   3   9600   None   S1   None   On
Signaling RF Settings	RF1com   0   0   On
User Interaction	No
Switch Matrix & Pathcompensation enabled	Yes

### Test Parameter

Technology to test	BT LE 2 Msps
Antenna port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True   Freq [MHz] 2404
Frequency mid to test	True   Freq [MHz] 2440
Frequency high to test	True   Freq [MHz] 2478
Auto control enabled power supply   Climatic Box	No   No
Additional path loss [dB]	0.7
Full path name   type	EUT - SignalingUnit - SpectrumAnalyzer

### Equipment

Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60
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## Equipment

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Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.190

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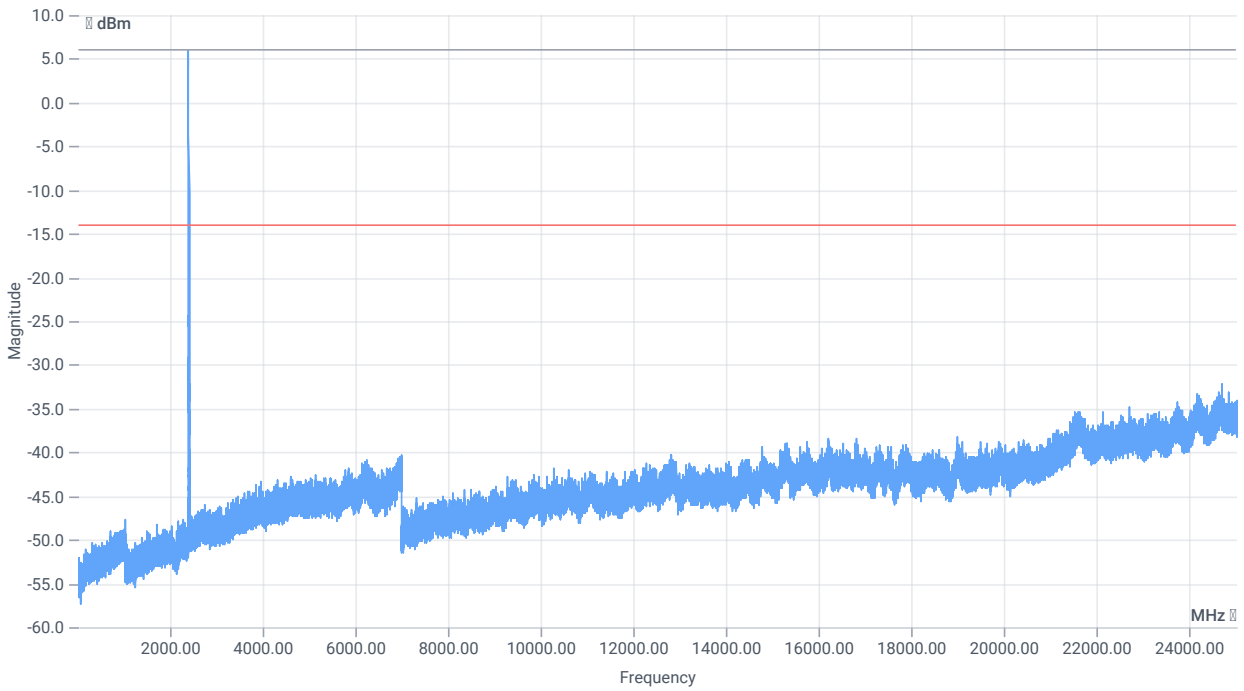
Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI

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## Test at TX 2404 MHz

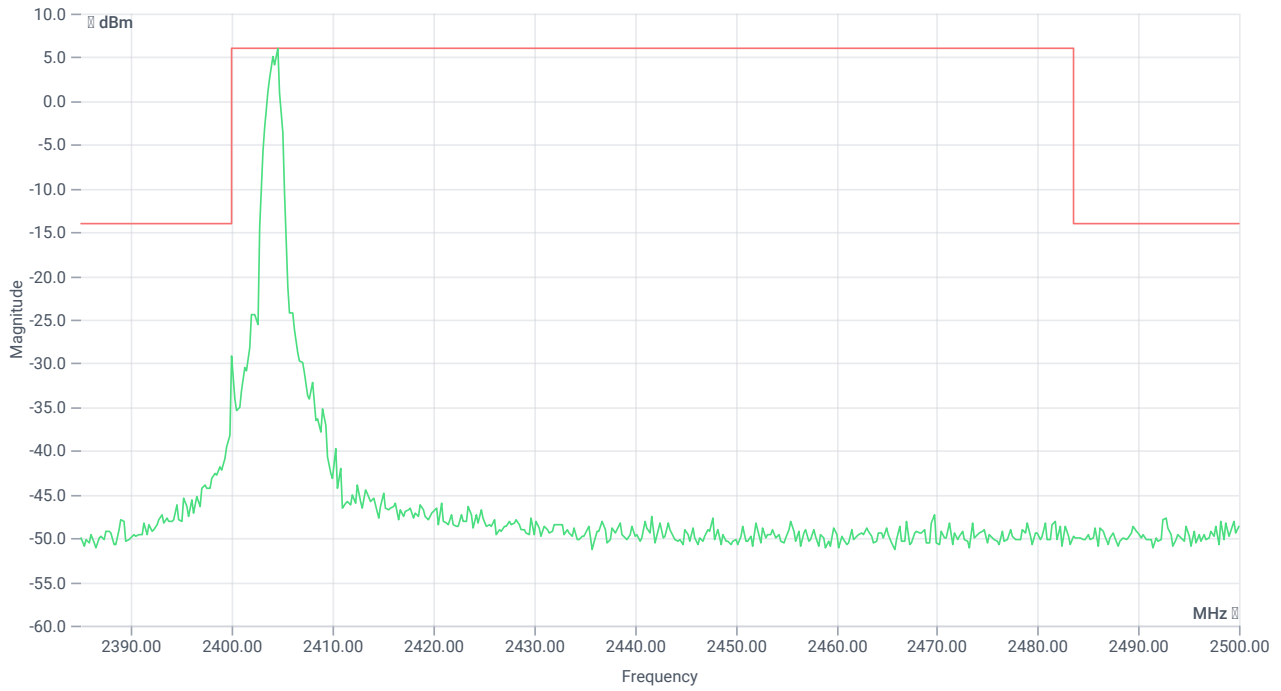
RESULT: Reference Power cond.

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	7.59	dBm	INFO
Ref. Frequency	--	--	2404.500	MHz	INFO



### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	7.59   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	200   25   2001   SWE



TX emissions band zoomed

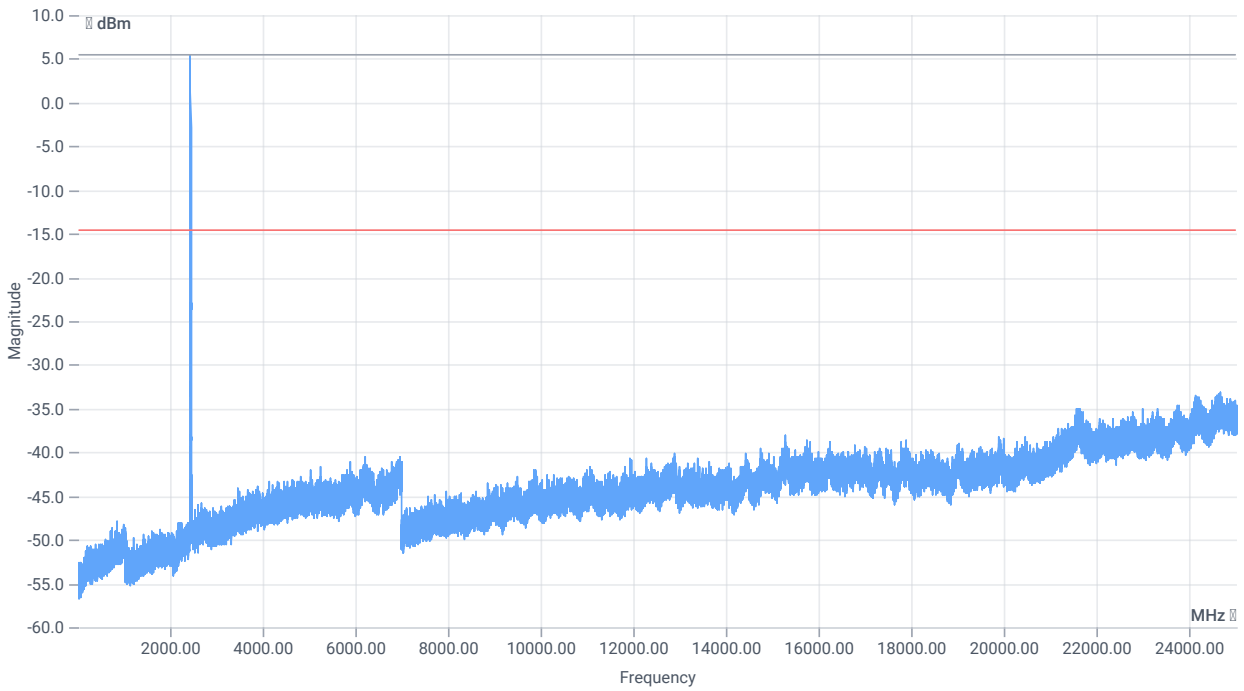
## RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Reference @ 2404.50 MHz	--	--	5.98	dBm	INFO
No peaks detected	--	--			PASS
Lowest margin to limit 24717.25 MHz	0	--	18.23	dB	INFO

## Test at TX 2440 MHz

RESULT: Reference Power cond.

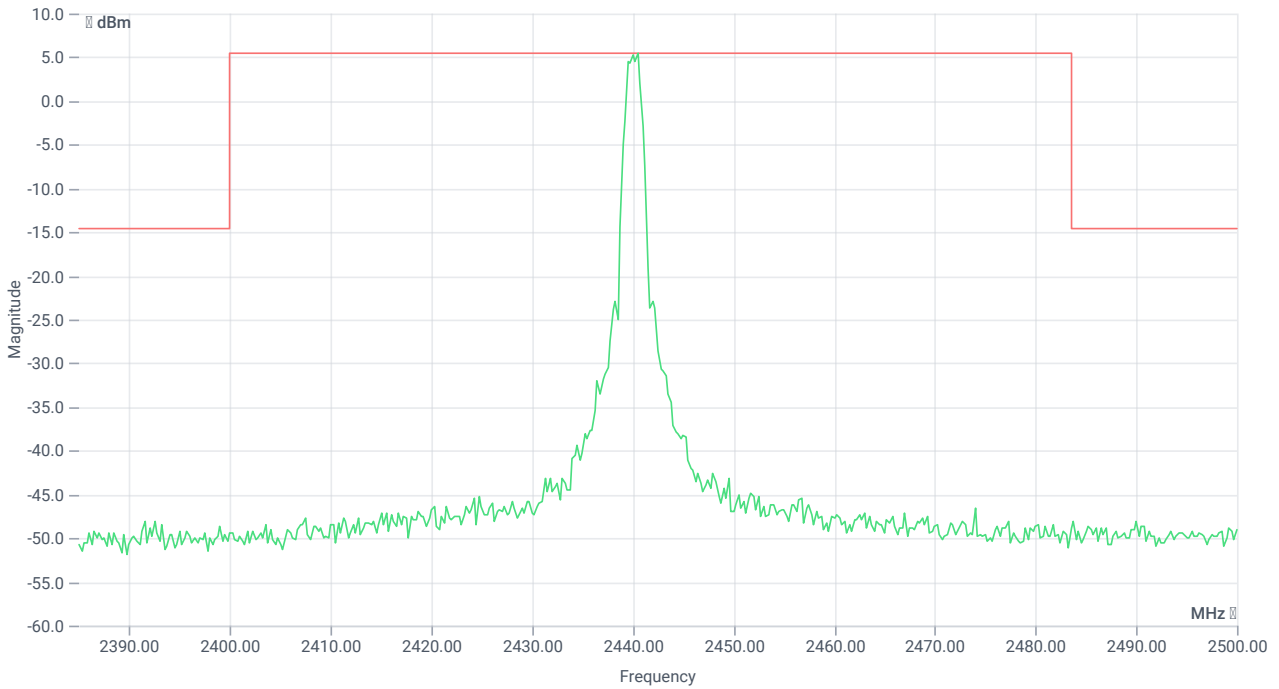
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	8.21	dBm	INFO
Ref. Frequency	--	--	2440.500	MHz	INFO



TX emissions

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	8.21   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	200   25   2001   SWE



TX emissions band zoomed

## RESULT

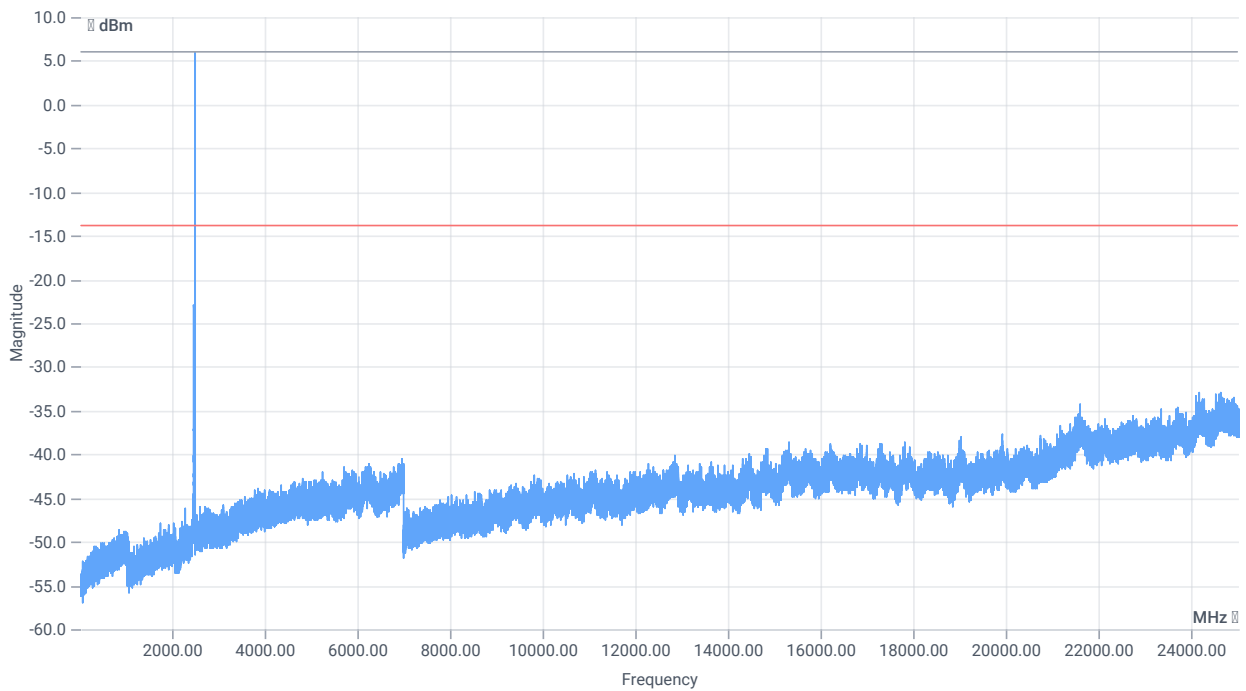
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Reference @ 2440.50 MHz	--	--	5.44	dBm	INFO
No peaks detected	--	--			PASS
Lowest margin to limit 30 MHz	0	--	-145.16	dB	INFO



## Test at TX 2478 MHz

RESULT: Reference Power cond.

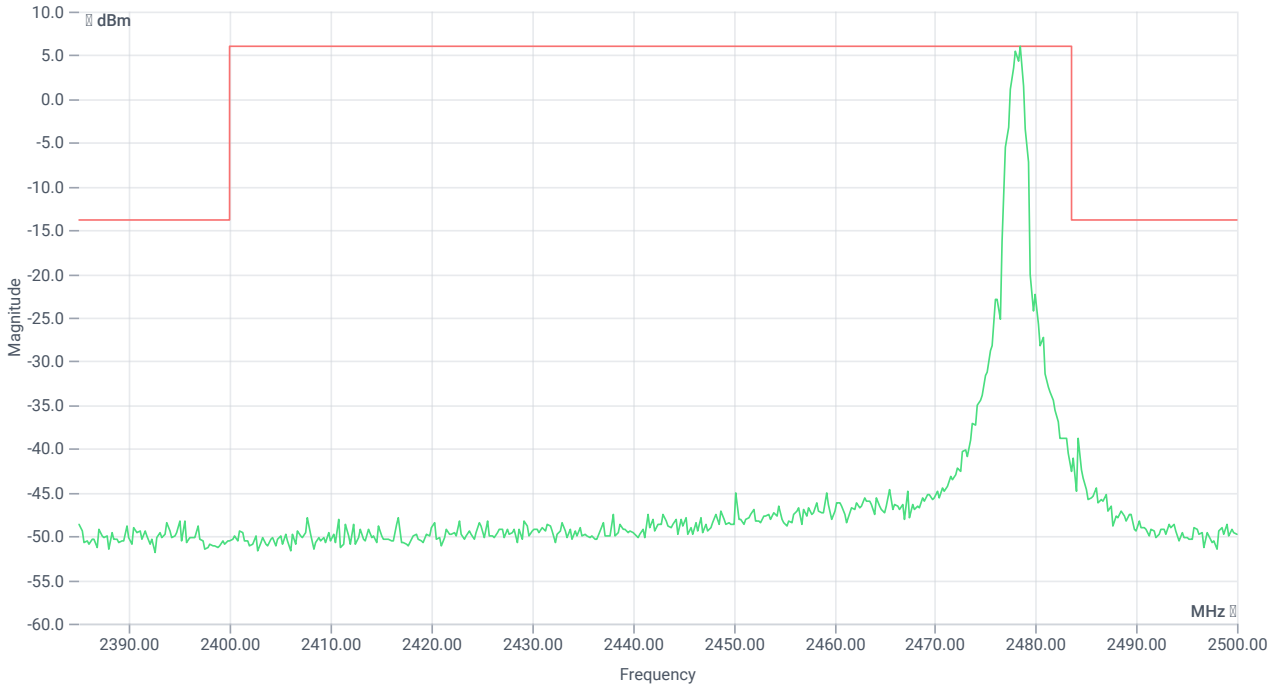
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. Power 1MHz/1MHz cond.	--	--	7.42	dBm	INFO
Ref. Frequency	--	--	2478.500	MHz	INFO



TX emissions

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	7.42   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	200   25   2001   SWE



TX emissions band zoomed

RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Reference @ 2478.50 MHz	--	--	6.10	dBm	INFO
No peaks detected	--	--			PASS
Lowest margin to limit 24625.75 MHz	0	--	19.06	dB	INFO

Verdict

PASS

- END OF DOCUMENT -