

Measurement Results

No.1-5761/23-01-02_Annex_MR

Test logging

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EUT Information

EUT DEFINITION

Manufacturer	SAGEMCOM BROADBAND SAS
Type	VSB3918 UHD ALT US
Serial Number	622432194559
Setup Number	1.0
Version SW	NI
Version FW	NI
Version HW	NI
Comment 1	
Comment 2	
Temperature [°C] Min	0
Temperature [°C] Nom	20
Temperature [°C] Max	40
Voltage [V] Min	16
Voltage [V] Nom	16
Voltage [V] Max	16

FCC 15.247 # Maximum peak conducted output power FHSS ~ BT Classic Basic rate

Test References

TC Start	02.02.2023 10:32:44
Ambit Temp [°C] Humidity [rel%]	23.3 32
System Version	3.3.4.4
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Conducted FHSS - BT Classic Basic Rate
Add. Information	

EUT Common Settings BT Classic

Intermodulation Value N	3
Image Freq. Low Mid High [MHz]	0 0 0
Power Class	1
Power Control	Enhanced
Longest Supported Packet Type	DH5
RF Supported	Basic Rate True EDR Pi/4DQPSK True EDR 8DPSK True
Testmode	LOOPback
Perform Inquiry	Yes
EUT BT Address (if Inquiry No)	0123456789AB
Signaling BT Address	BABEBEDADBAD
Switch Matrix & Pathcompensation enabled	Yes

Test Parameter

Technology to test	BT Classic Basic rate
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2441
Frequency high to test	True Freq [MHz] 2480
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	0.5
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

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

Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.62

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

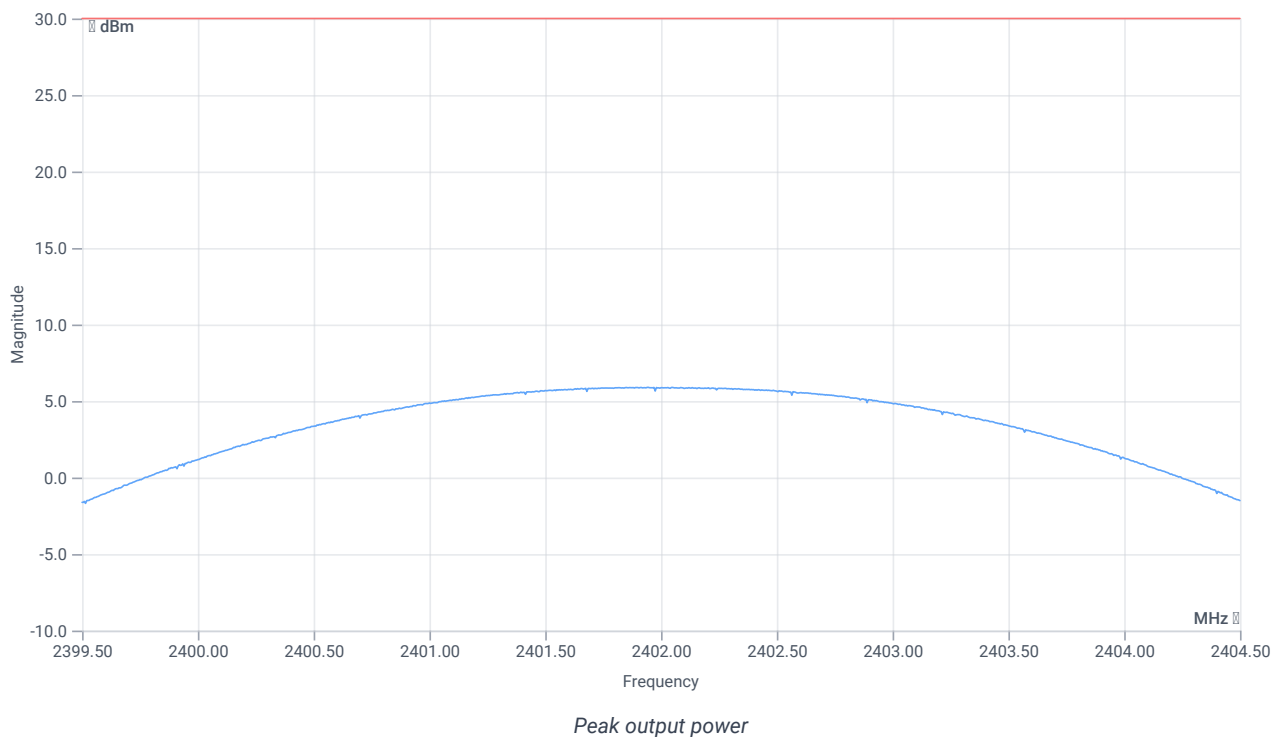
Test at TX 2402 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	5.64	dBm	INFO
Ref. Frequency	---	---	2402.100	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	15.64 11.09 20
Start [MHz] Stop [MHz]	2399.500 2404.500
RBW [MHz] VBW [MHz]	3.000000 10.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 SWE



RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	5.9	dBm	PASS
Peak Power	---	1000	3.890451	mW	PASS
Frequency at Peak	---	---	2401.945	MHz	INFO

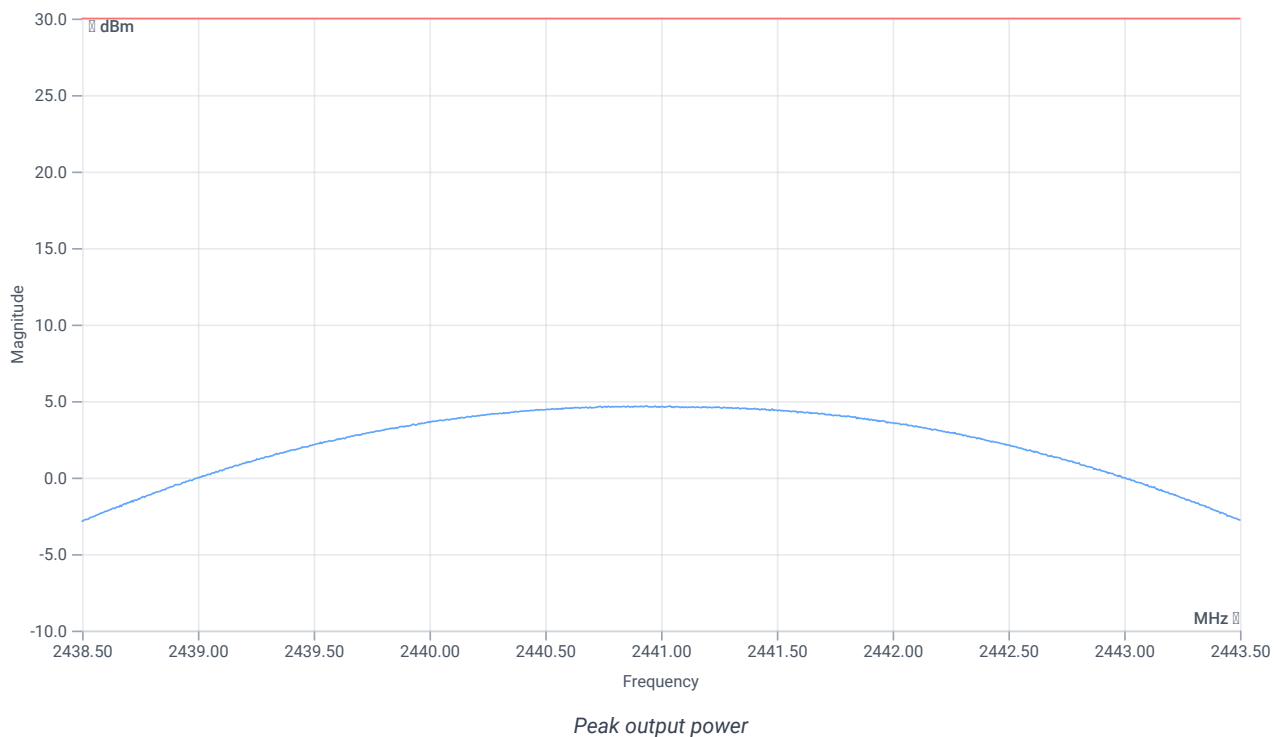
Test at TX 2441 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	4.30	dBm	INFO
Ref. Frequency	---	---	2441.000	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	14.30 11.16 20
Start [MHz] Stop [MHz]	2438.500 2443.500
RBW [MHz] VBW [MHz]	3.000000 10.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 SWE



RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	4.68	dBm	PASS
Peak Power	---	1000	2.93765	mW	PASS
Frequency at Peak	---	---	2440.94	MHz	INFO

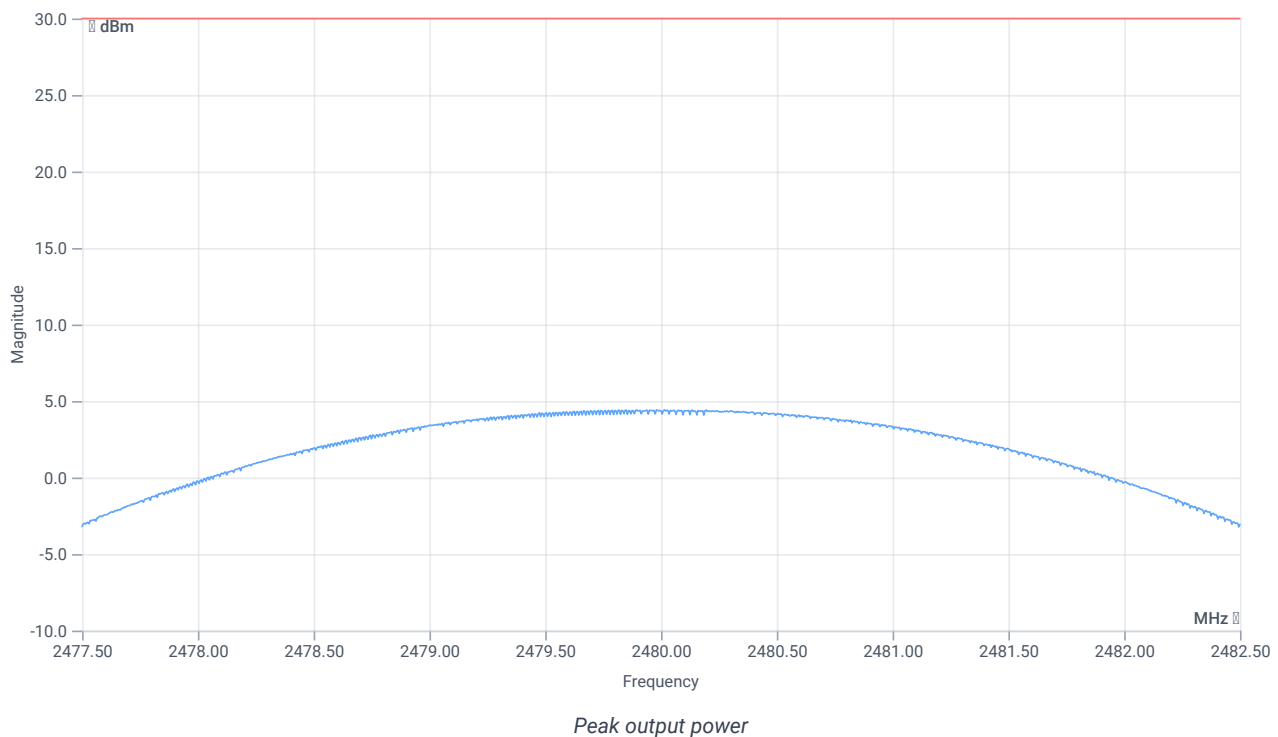
Test at TX 2480 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	4.04	dBm	INFO
Ref. Frequency	---	---	2480.000	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	14.04 11.21 20
Start [MHz] Stop [MHz]	2477.500 2482.500
RBW [MHz] VBW [MHz]	3.000000 10.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 SWE



RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	4.42	dBm	PASS
Peak Power	---	1000	2.766942	mW	PASS
Frequency at Peak	---	---	2480.015	MHz	INFO

Verdict

PASS

FCC 15.247 # Number of hopping channels FHSS ~ BT Classic Basic rate

Test References

TC Start	02.02.2023 10:34:15
Ambit Temp [°C] Humidity [rel%]	23.5 32
System Version	3.3.4.4
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Number Of Hopping Channels FHSS - BT Classic Basic Rate
Add. Information	

EUT Common Settings BT Classic

Intermodulation Value N	3
Image Freq. Low Mid High [MHz]	0 0 0
Power Class	1
Power Control	Enhanced
Longest Supported Packet Type	DH5
RF Supported	Basic Rate True EDR Pi/4DQPSK True EDR 8DPSK True
Testmode	LOOPback
Perform Inquiry	Yes
EUT BT Address (if Inquiry No)	0123456789AB
Signaling BT Address	BABEBEDADBAD
Switch Matrix & Pathcompensation enabled	Yes

Test Parameter

Technology to test	BT Classic Basic rate
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2402
Frequency mid to test	False Freq [MHz] 2441
Frequency high to test	False Freq [MHz] 2480
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	0.5
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

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

Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.62

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

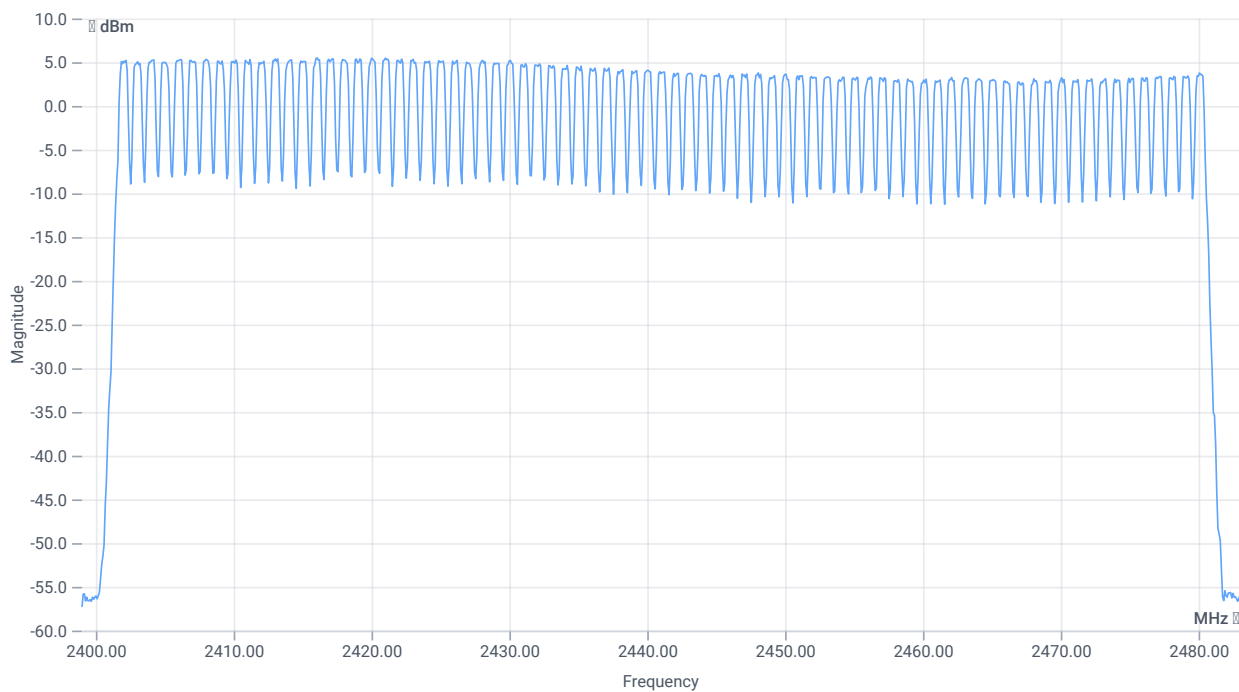
Test at TX hopping MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	5.80	dBm	INFO
Ref. Frequency	---	---	2416.920	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.80 11.16 15
Start [MHz] Stop [MHz]	2399.000 2483.000
RBW [MHz] VBW [MHz]	0.200000 0.500000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1 10000 1001 SWE



Number of hopping channels

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Hopp channel (rounded)	---	---	2402	MHz	INFO
Hopp channel (rounded)	---	---	2403	MHz	INFO
Hopp channel (rounded)	---	---	2404	MHz	INFO

RESULT

<i>Test Description</i>	<i>Lower Limit</i>	<i>Upper Limit</i>	<i>Measured</i>	<i>Unit</i>	<i>Verdict</i>
Hopp channel (rounded)	---	---	2405	MHz	INFO
Hopp channel (rounded)	---	---	2406	MHz	INFO
Hopp channel (rounded)	---	---	2407	MHz	INFO
Hopp channel (rounded)	---	---	2408	MHz	INFO
Hopp channel (rounded)	---	---	2409	MHz	INFO
Hopp channel (rounded)	---	---	2410	MHz	INFO
Hopp channel (rounded)	---	---	2411	MHz	INFO
Hopp channel (rounded)	---	---	2412	MHz	INFO
Hopp channel (rounded)	---	---	2413	MHz	INFO
Hopp channel (rounded)	---	---	2414	MHz	INFO
Hopp channel (rounded)	---	---	2415	MHz	INFO
Hopp channel (rounded)	---	---	2416	MHz	INFO
Hopp channel (rounded)	---	---	2417	MHz	INFO
Hopp channel (rounded)	---	---	2418	MHz	INFO
Hopp channel (rounded)	---	---	2419	MHz	INFO
Hopp channel (rounded)	---	---	2420	MHz	INFO
Hopp channel (rounded)	---	---	2421	MHz	INFO
Hopp channel (rounded)	---	---	2422	MHz	INFO
Hopp channel (rounded)	---	---	2423	MHz	INFO
Hopp channel (rounded)	---	---	2424	MHz	INFO
Hopp channel (rounded)	---	---	2425	MHz	INFO
Hopp channel (rounded)	---	---	2426	MHz	INFO
Hopp channel (rounded)	---	---	2427	MHz	INFO
Hopp channel (rounded)	---	---	2428	MHz	INFO
Hopp channel (rounded)	---	---	2429	MHz	INFO

RESULT

<i>Test Description</i>	<i>Lower Limit</i>	<i>Upper Limit</i>	<i>Measured</i>	<i>Unit</i>	<i>Verdict</i>
Hopp channel (rounded)	---	---	2430	MHz	INFO
Hopp channel (rounded)	---	---	2431	MHz	INFO
Hopp channel (rounded)	---	---	2432	MHz	INFO
Hopp channel (rounded)	---	---	2433	MHz	INFO
Hopp channel (rounded)	---	---	2434	MHz	INFO
Hopp channel (rounded)	---	---	2435	MHz	INFO
Hopp channel (rounded)	---	---	2436	MHz	INFO
Hopp channel (rounded)	---	---	2437	MHz	INFO
Hopp channel (rounded)	---	---	2438	MHz	INFO
Hopp channel (rounded)	---	---	2439	MHz	INFO
Hopp channel (rounded)	---	---	2440	MHz	INFO
Hopp channel (rounded)	---	---	2441	MHz	INFO
Hopp channel (rounded)	---	---	2442	MHz	INFO
Hopp channel (rounded)	---	---	2443	MHz	INFO
Hopp channel (rounded)	---	---	2444	MHz	INFO
Hopp channel (rounded)	---	---	2445	MHz	INFO
Hopp channel (rounded)	---	---	2446	MHz	INFO
Hopp channel (rounded)	---	---	2447	MHz	INFO
Hopp channel (rounded)	---	---	2448	MHz	INFO
Hopp channel (rounded)	---	---	2449	MHz	INFO
Hopp channel (rounded)	---	---	2450	MHz	INFO
Hopp channel (rounded)	---	---	2451	MHz	INFO
Hopp channel (rounded)	---	---	2452	MHz	INFO
Hopp channel (rounded)	---	---	2453	MHz	INFO
Hopp channel (rounded)	---	---	2454	MHz	INFO

RESULT

<i>Test Description</i>	<i>Lower Limit</i>	<i>Upper Limit</i>	<i>Measured</i>	<i>Unit</i>	<i>Verdict</i>
Hopp channel (rounded)	---	---	2455	MHz	INFO
Hopp channel (rounded)	---	---	2456	MHz	INFO
Hopp channel (rounded)	---	---	2457	MHz	INFO
Hopp channel (rounded)	---	---	2458	MHz	INFO
Hopp channel (rounded)	---	---	2459	MHz	INFO
Hopp channel (rounded)	---	---	2460	MHz	INFO
Hopp channel (rounded)	---	---	2461	MHz	INFO
Hopp channel (rounded)	---	---	2462	MHz	INFO
Hopp channel (rounded)	---	---	2463	MHz	INFO
Hopp channel (rounded)	---	---	2464	MHz	INFO
Hopp channel (rounded)	---	---	2465	MHz	INFO
Hopp channel (rounded)	---	---	2466	MHz	INFO
Hopp channel (rounded)	---	---	2467	MHz	INFO
Hopp channel (rounded)	---	---	2468	MHz	INFO
Hopp channel (rounded)	---	---	2469	MHz	INFO
Hopp channel (rounded)	---	---	2470	MHz	INFO
Hopp channel (rounded)	---	---	2471	MHz	INFO
Hopp channel (rounded)	---	---	2472	MHz	INFO
Hopp channel (rounded)	---	---	2473	MHz	INFO
Hopp channel (rounded)	---	---	2474	MHz	INFO
Hopp channel (rounded)	---	---	2475	MHz	INFO
Hopp channel (rounded)	---	---	2476	MHz	INFO
Hopp channel (rounded)	---	---	2477	MHz	INFO
Hopp channel (rounded)	---	---	2478	MHz	INFO
Hopp channel (rounded)	---	---	2479	MHz	INFO

RESULT

<i>Test Description</i>	<i>Lower Limit</i>	<i>Upper Limit</i>	<i>Measured</i>	<i>Unit</i>	<i>Verdict</i>
Hopp channel (rounded)	---	---	2480	MHz	INFO
Σ Hopping channels	15	---	79	Number	PASS

Verdict

PASS

FCC 15.247 # Carrier frequency separation FHSS ~ BT Classic Basic rate

Test References

TC Start	02.02.2023 10:35:07
Ambit Temp [°C] Humidity [rel%]	23.6 31
System Version	3.3.4.4
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Carrier Frequency Separation FHSS - BT Classic Basic Rate
Add. Information	

EUT Common Settings BT Classic

Intermodulation Value N	3
Image Freq. Low Mid High [MHz]	0 0 0
Power Class	1
Power Control	Enhanced
Longest Supported Packet Type	DH5
RF Supported	Basic Rate True EDR Pi/4DQPSK True EDR 8DPSK True
Testmode	LOOPback
Perform Inquiry	Yes
EUT BT Address (if Inquiry No)	0123456789AB
Signaling BT Address	BABEBEDADBAD
Switch Matrix & Pathcompensation enabled	Yes

Test Parameter

Technology to test	BT Classic Basic rate
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2402
Frequency mid to test	False Freq [MHz] 2441
Frequency high to test	False Freq [MHz] 2480
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	0.5
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

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

Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.62

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

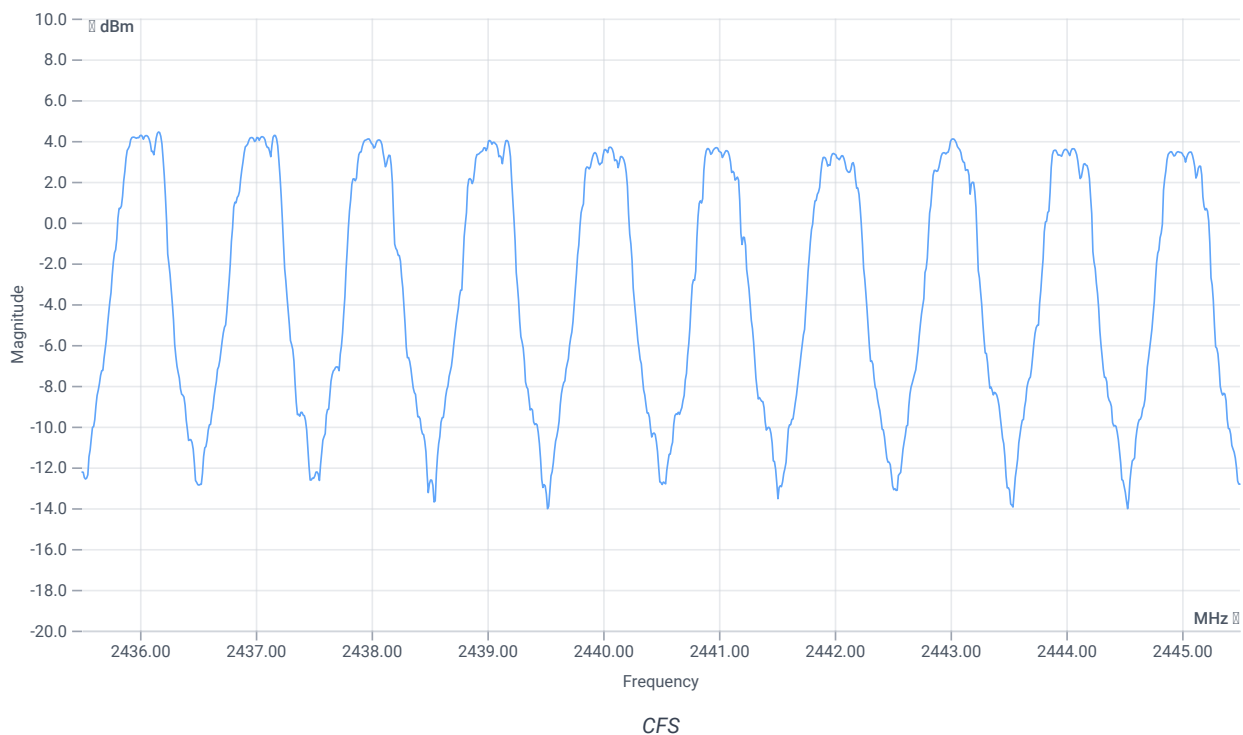
Test at TX hopping MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	5.59	dBm	INFO
Ref. Frequency	---	---	2415.920	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.59 11.16 15
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 20000 1001 SWE



RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
1 CFS n to n+1 (rnd)	0.025	---	1	MHz	PASS
1 CFS n to n+1 (rnd)	0.667 (2/3 Nom.BW)	---	1	MHz	PASS
2 CFS n to n+1 (rnd)	0.025	---	1	MHz	PASS
2 CFS n to n+1 (rnd)	0.667 (2/3 Nom.BW)	---	1	MHz	PASS
3 CFS n to n+1 (rnd)	0.025	---	1	MHz	PASS

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
3 CFS n to n+1 (rnd)	0.667 (2/3 Nom.BW)	---	1	MHz	PASS
4 CFS n to n+1 (rnd)	0.025	---	1	MHz	PASS
4 CFS n to n+1 (rnd)	0.667 (2/3 Nom.BW)	---	1	MHz	PASS
5 CFS n to n+1 (rnd)	0.025	---	1	MHz	PASS
5 CFS n to n+1 (rnd)	0.667 (2/3 Nom.BW)	---	1	MHz	PASS
6 CFS n to n+1 (rnd)	0.025	---	1	MHz	PASS
6 CFS n to n+1 (rnd)	0.667 (2/3 Nom.BW)	---	1	MHz	PASS
7 CFS n to n+1 (rnd)	0.025	---	1	MHz	PASS
7 CFS n to n+1 (rnd)	0.667 (2/3 Nom.BW)	---	1	MHz	PASS
8 CFS n to n+1 (rnd)	0.025	---	1	MHz	PASS
8 CFS n to n+1 (rnd)	0.667 (2/3 Nom.BW)	---	1	MHz	PASS
9 CFS n to n+1 (rnd)	0.025	---	1	MHz	PASS
9 CFS n to n+1 (rnd)	0.667 (2/3 Nom.BW)	---	1	MHz	PASS
Carrier Freq. (rnd)	---	---	2436	MHz	INFO
Carrier Freq. (rnd)	---	---	2437	MHz	INFO
Carrier Freq. (rnd)	---	---	2438	MHz	INFO
Carrier Freq. (rnd)	---	---	2439	MHz	INFO
Carrier Freq. (rnd)	---	---	2440	MHz	INFO
Carrier Freq. (rnd)	---	---	2441	MHz	INFO
Carrier Freq. (rnd)	---	---	2442	MHz	INFO
Carrier Freq. (rnd)	---	---	2443	MHz	INFO
Carrier Freq. (rnd)	---	---	2444	MHz	INFO
Carrier Freq. (rnd)	---	---	2445	MHz	INFO

Verdict

PASS

FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ BT Classic Basic rate

Test References

TC Start	02.02.2023 10:37:11
Ambit Temp [°C] Humidity [rel%]	23.9 31
System Version	3.3.4.4
Test Specification	FCC 15.247, ISED RSS247 -
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT - 20dB FHSS - BT Classic Basic Rate
Add. Information	

EUT Common Settings BT Classic

Intermodulation Value N	3
Image Freq. Low Mid High [MHz]	0 0 0
Power Class	1
Power Control	Enhanced
Longest Supported Packet Type	DH5
RF Supported	Basic Rate True EDR Pi/4DQPSK True EDR 8DPSK True
Testmode	LOOPback
Perform Inquiry	Yes
EUT BT Address (if Inquiry No)	0123456789AB
Signaling BT Address	BABEBEDADBAD
Switch Matrix & Pathcompensation enabled	Yes

Test Parameter

Technology to test	BT Classic Basic rate
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2441
Frequency high to test	True Freq [MHz] 2480
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	0.5
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

Test Equipment

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

Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.62

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

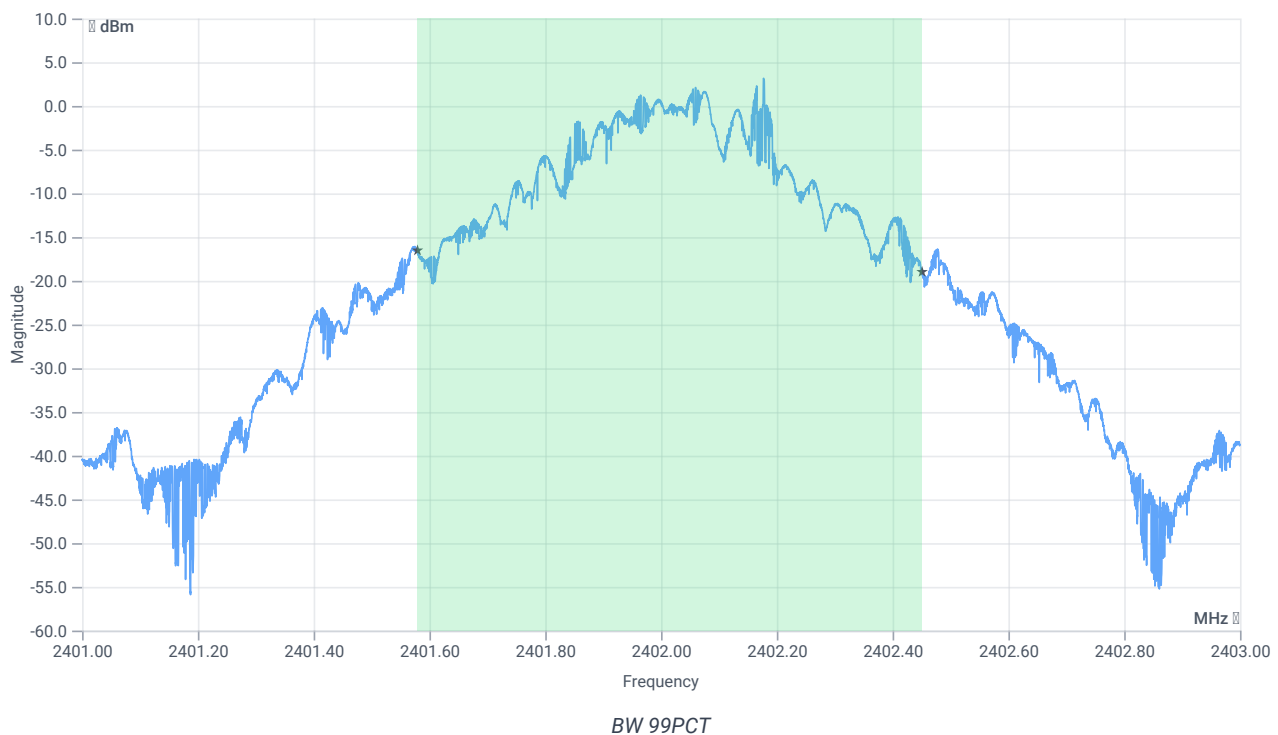
Test at TX 2402 MHz

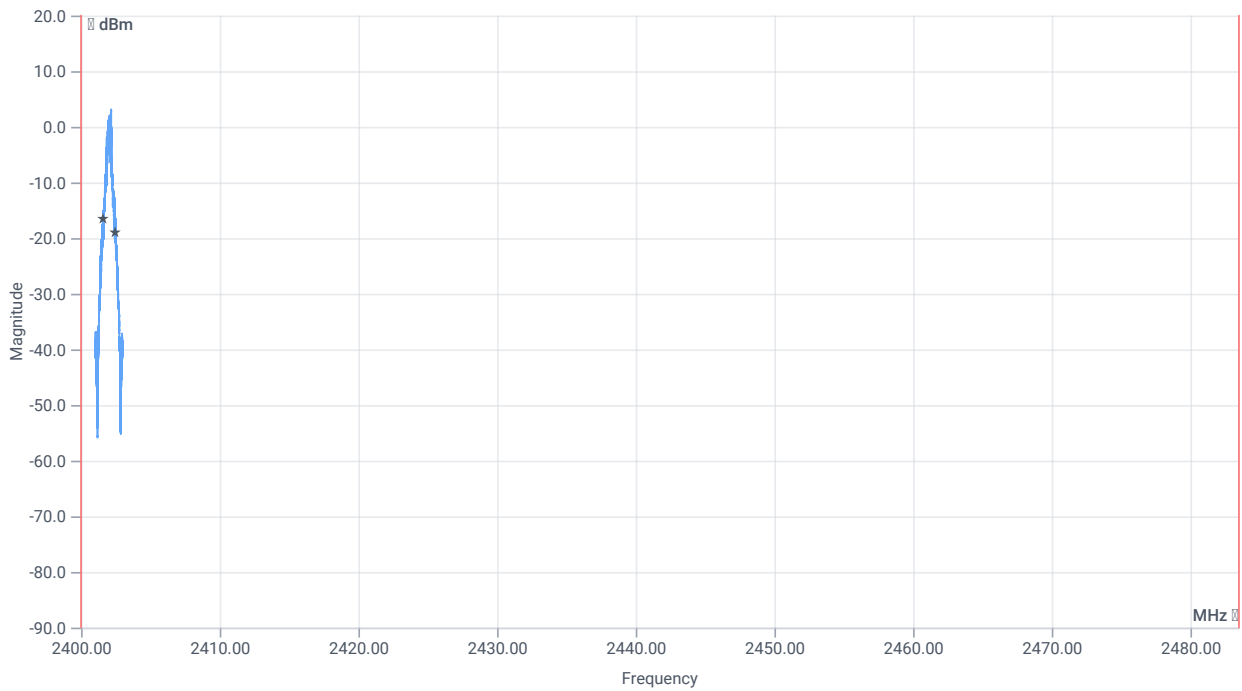
RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	5.36	dBm	INFO
Ref. Frequency	---	---	2402.100	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.36 11.09 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

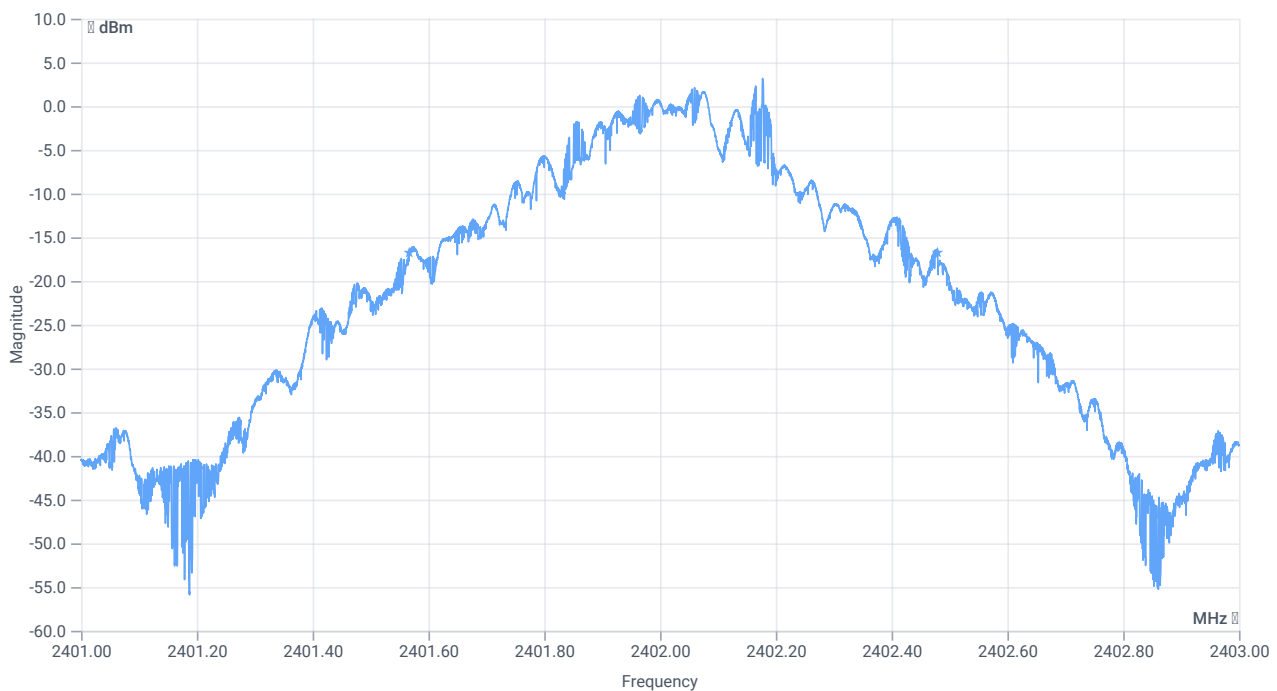




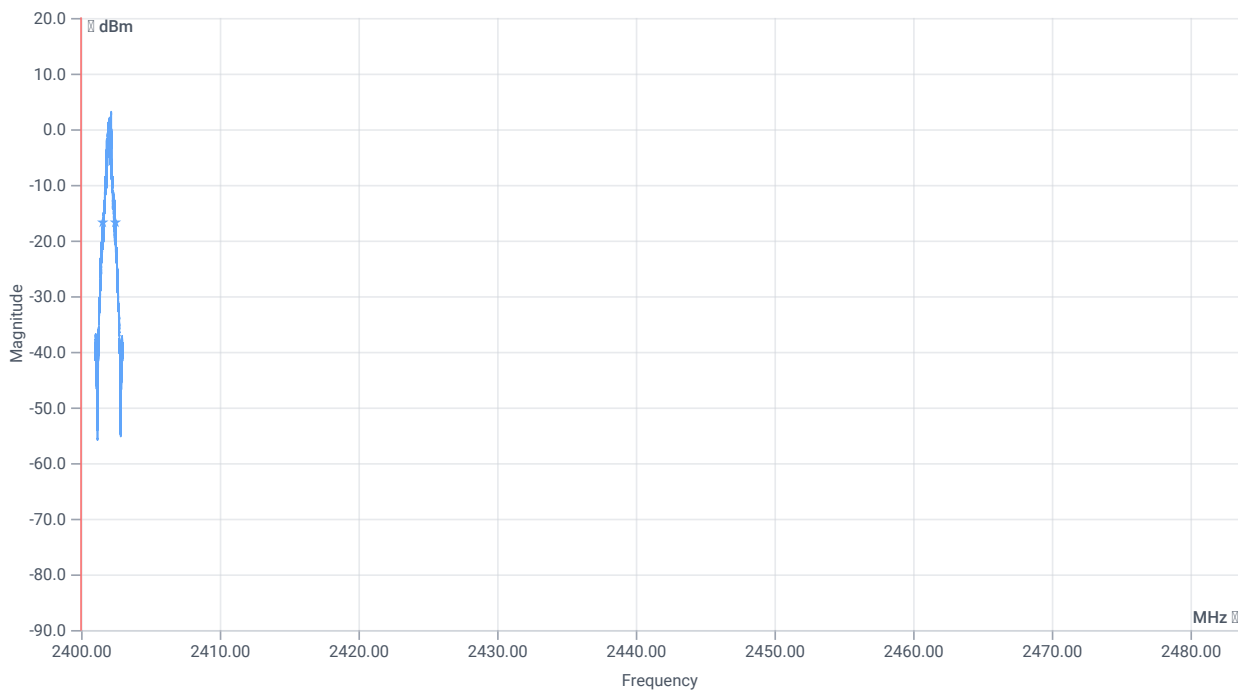
BW within Band 99PCT

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	872.000	kHz	INFO
T1 99%	2400.000000	---	2401.5794	MHz	PASS
T2 99%	---	2483.500000	2402.4510	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	913	kHz	INFO
T1 20dB	2400.000000	---	2401.5668	MHz	PASS
T2 20dB	---	2483.500000	2402.4794	MHz	PASS

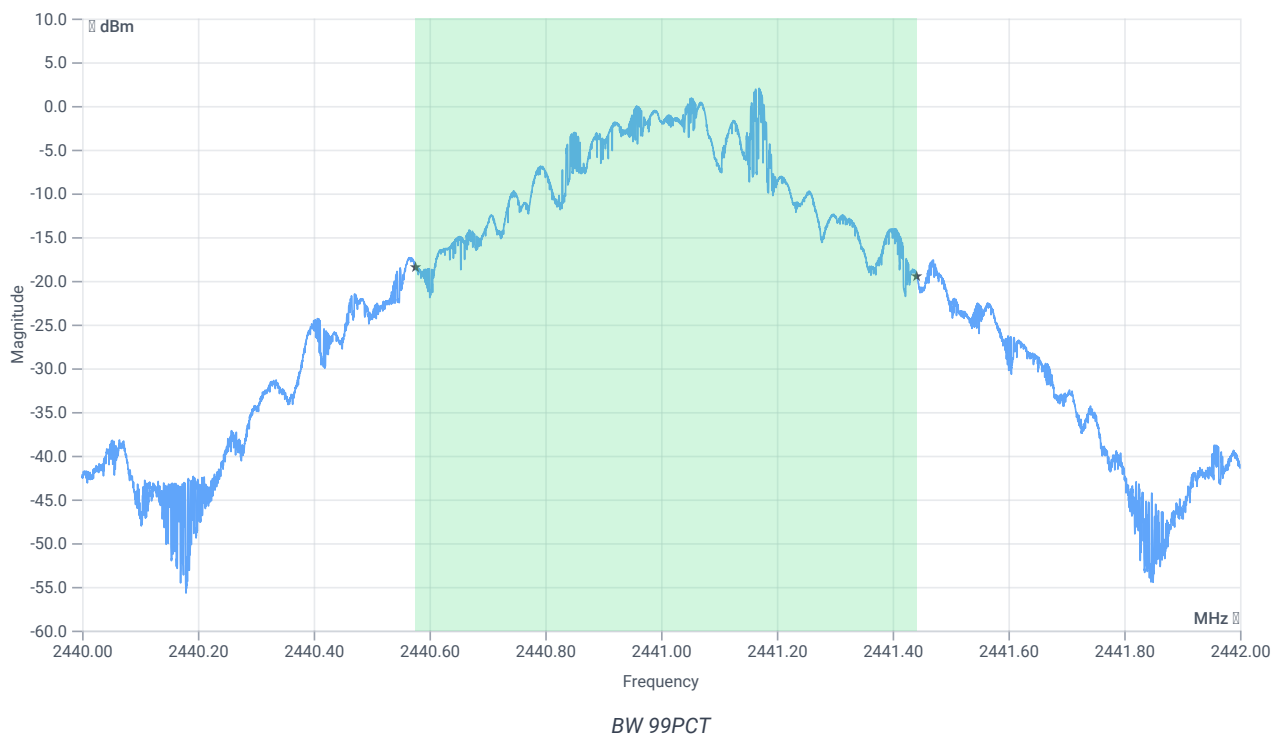
Test at TX 2441 MHz

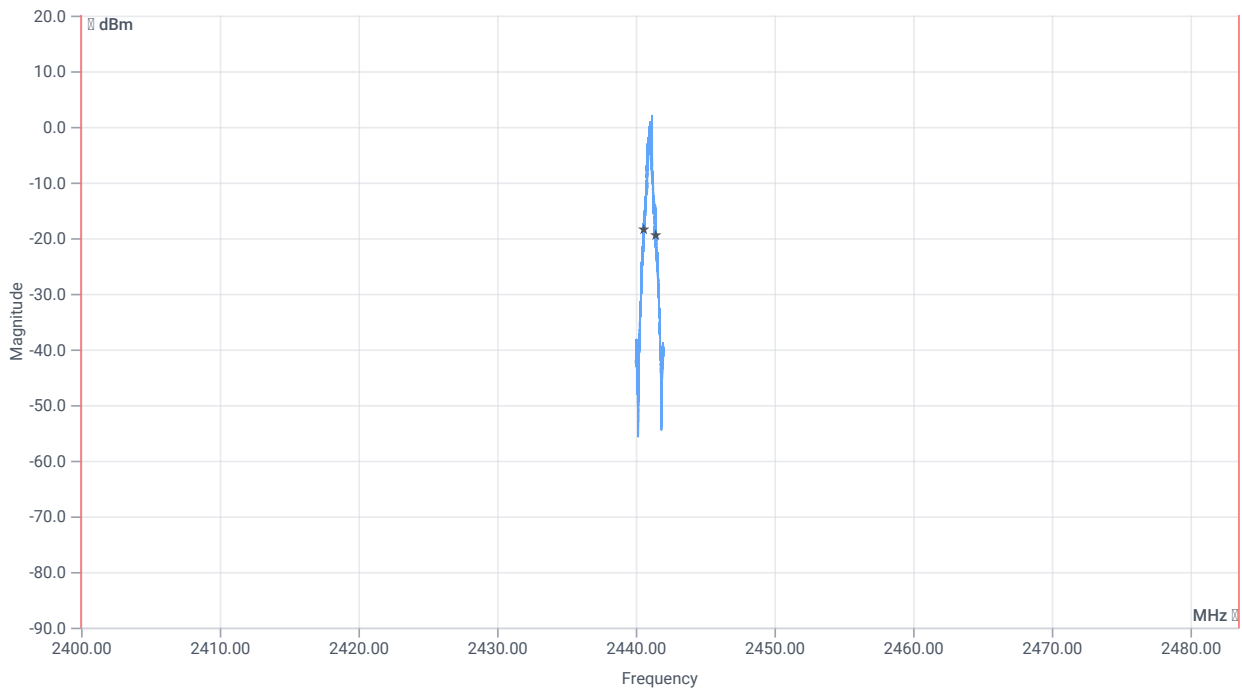
RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	4.15	dBm	INFO
Ref. Frequency	---	---	2441.100	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	9.15 11.16 15
Start [MHz] Stop [MHz]	2440.000 2442.000
RBW [MHz] VBW [MHz]	0.020000 0.100000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE





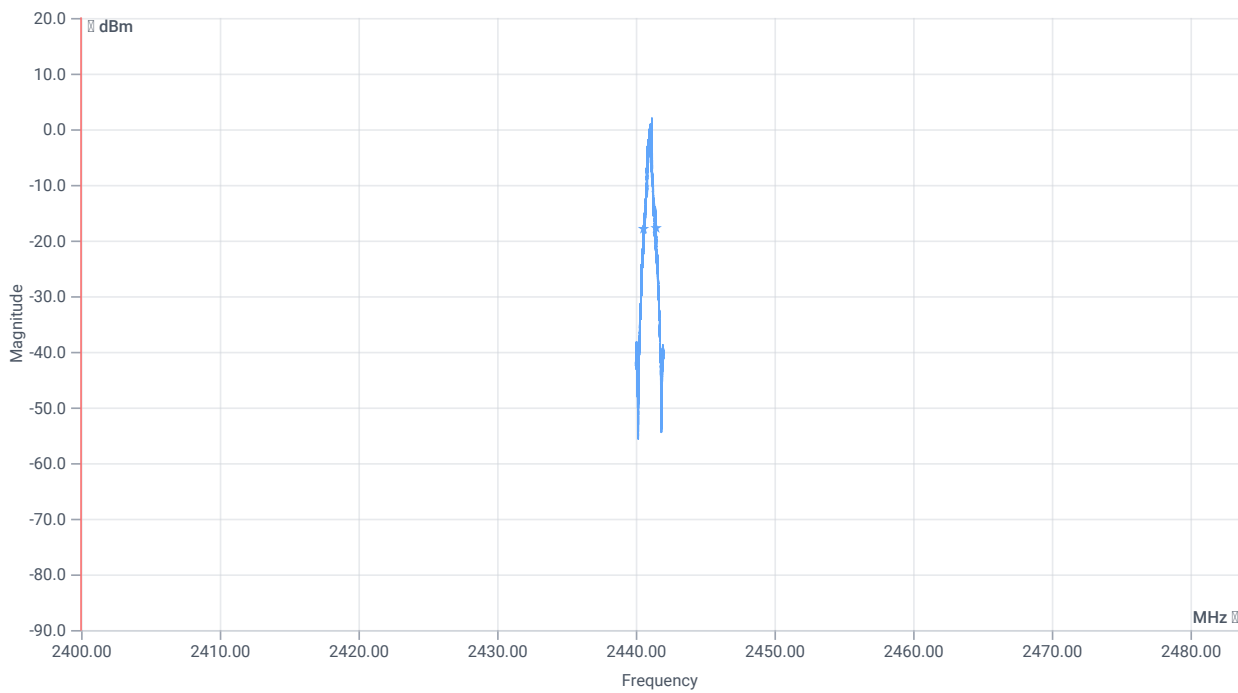
BW within Band 99PCT

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	866.000	kHz	INFO
T1 99%	2400.000000	---	2440.5760	MHz	PASS
T2 99%	---	2483.500000	2441.4416	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	909	kHz	INFO
T1 20dB	2400.000000	---	2440.5614	MHz	PASS
T2 20dB	---	2483.500000	2441.4706	MHz	PASS

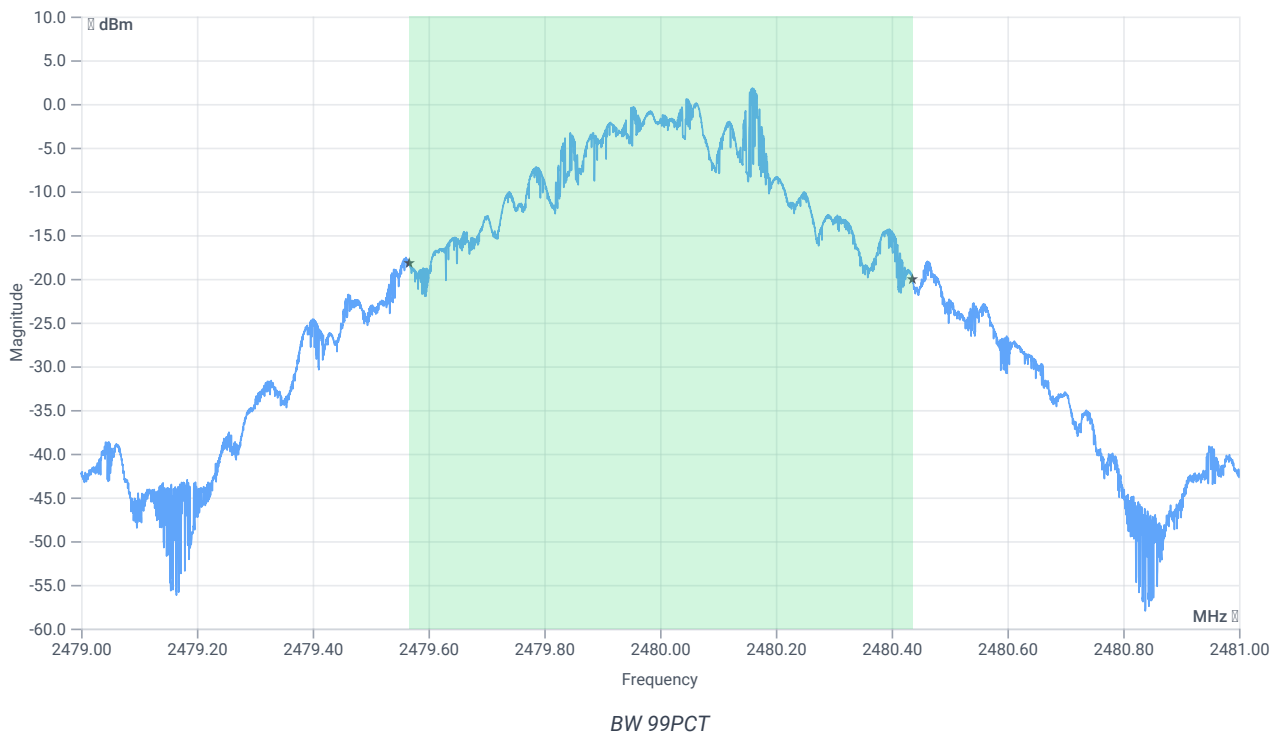
Test at TX 2480 MHz

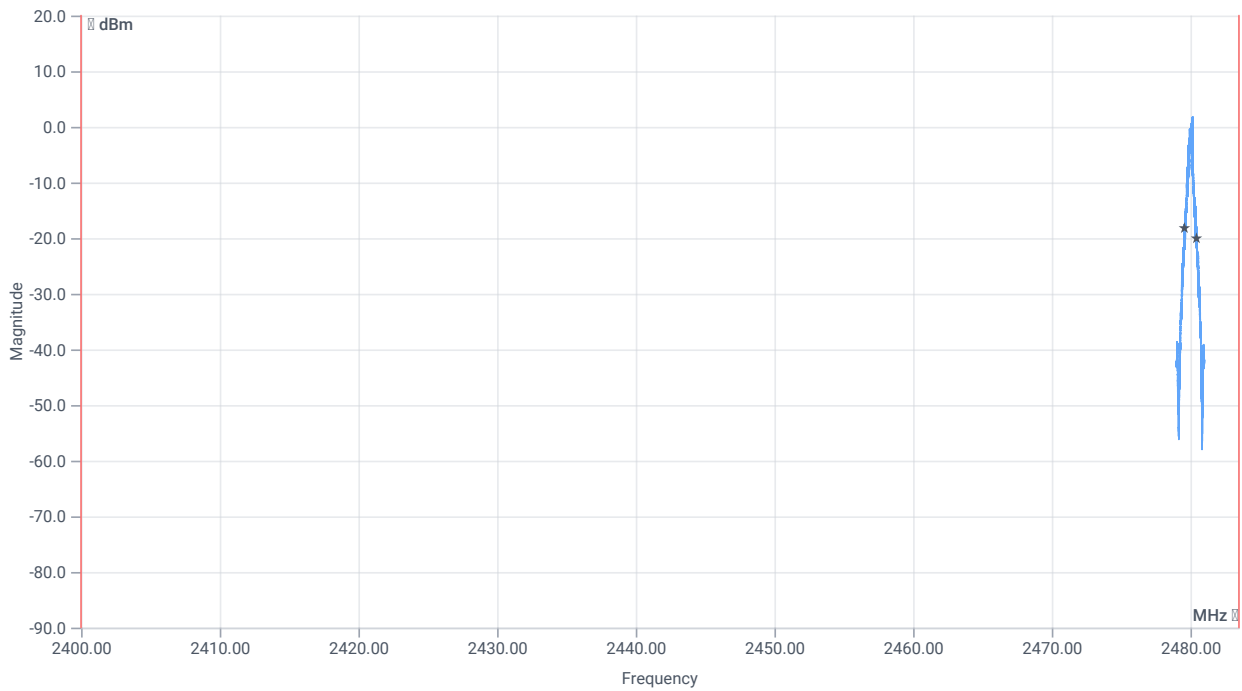
RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	3.81	dBm	INFO
Ref. Frequency	---	---	2480.000	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	8.81 11.21 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

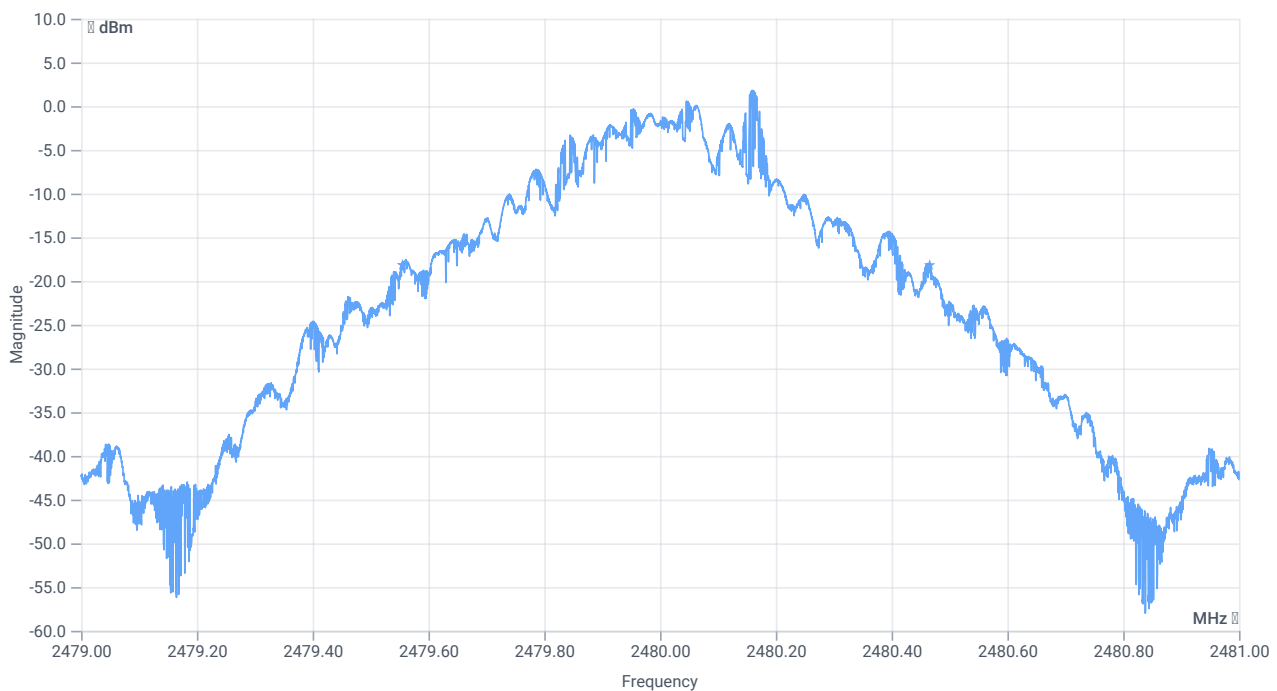




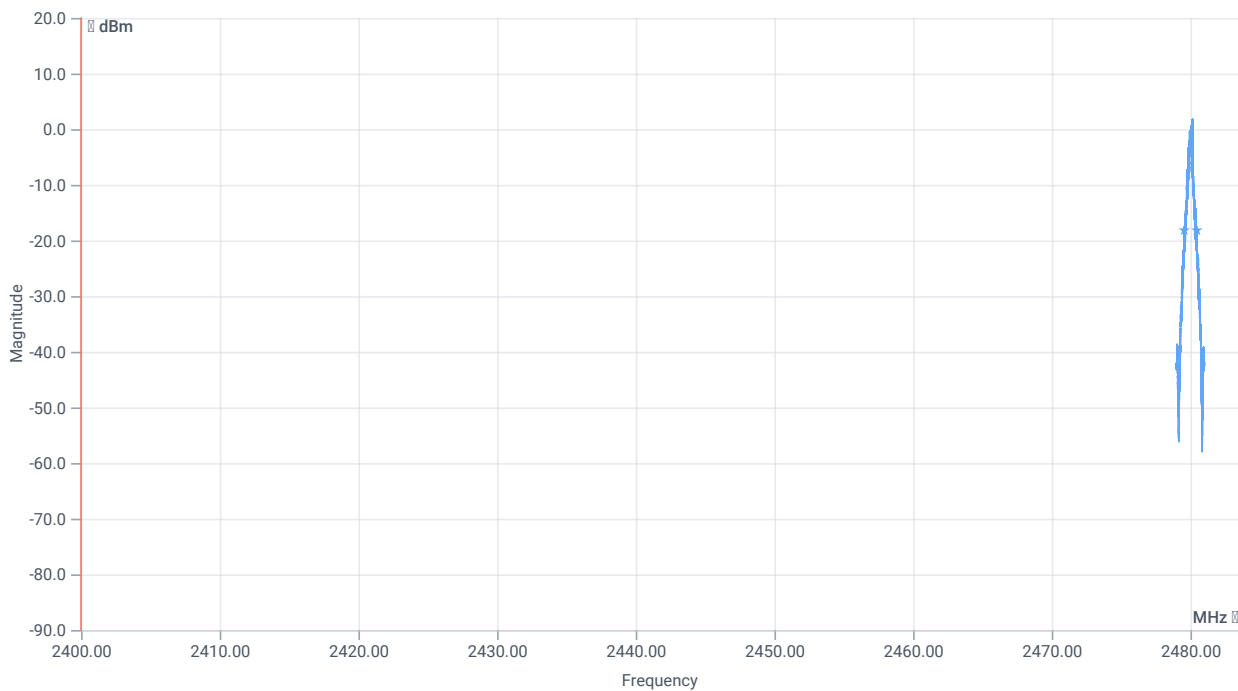
BW within Band 99PCT

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	869.000	kHz	INFO
T1 99%	2400.000000	---	2479.5668	MHz	PASS
T2 99%	---	2483.500000	2480.4360	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	911	kHz	INFO
T1 20dB	2400.000000	---	2479.5550	MHz	PASS
T2 20dB	---	2483.500000	2480.4658	MHz	PASS

Verdict

PASS

FCC 15.247 # TX spurious conducted 20dBc ~ BT Classic Basic rate

Test References

TC Start	02.02.2023 10:38:59
Ambit Temp [°C] Humidity [rel%]	24.1 30
System Version	3.3.4.4
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 - BT Classic Basic Rate
Add. Information	

EUT Common Settings BT Classic

Intermodulation Value N	3
Image Freq. Low Mid High [MHz]	0 0 0
Power Class	1
Power Control	Enhanced
Longest Supported Packet Type	DH5
RF Supported	Basic Rate True EDR Pi/4DQPSK True EDR 8DPSK True
Testmode	LOOPback
Perform Inquiry	Yes
EUT BT Address (if Inquiry No)	0123456789AB
Signaling BT Address	BABEBEDADBAD
Switch Matrix & Pathcompensation enabled	Yes

Test Parameter

Technology to test	BT Classic Basic rate
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2441
Frequency high to test	True Freq [MHz] 2480
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	0.5
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

Test Equipment

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

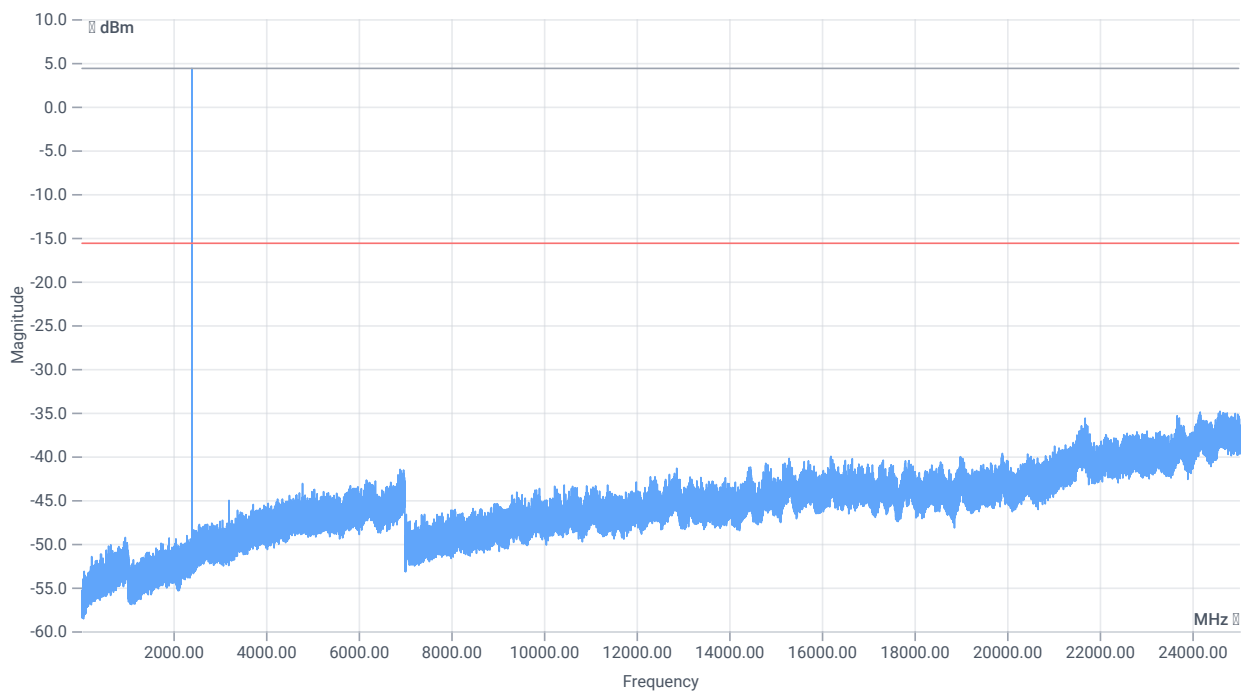
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.62

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

Test at TX 2402 MHz

RESULT: Reference Power cond.

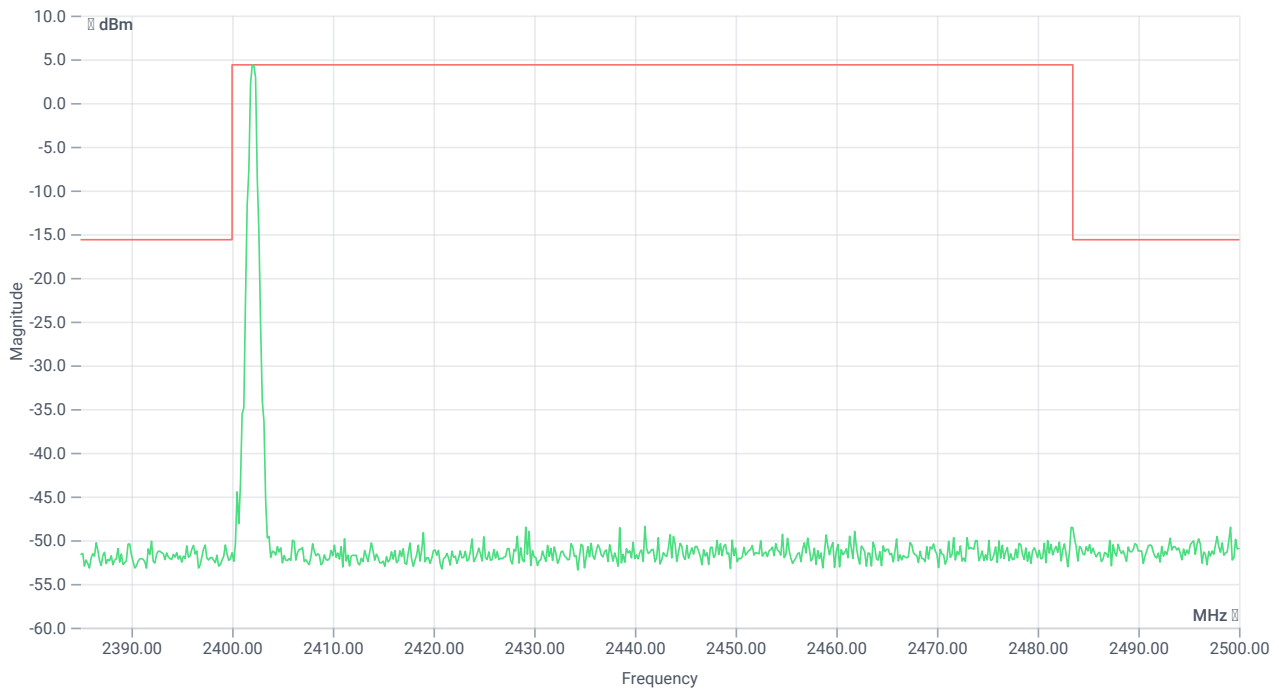
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	5.35	dBm	INFO
Ref. Frequency	---	---	2402.200	MHz	INFO



TX emissions

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	5.35 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 3001 SWE



TX emissions band zoomed

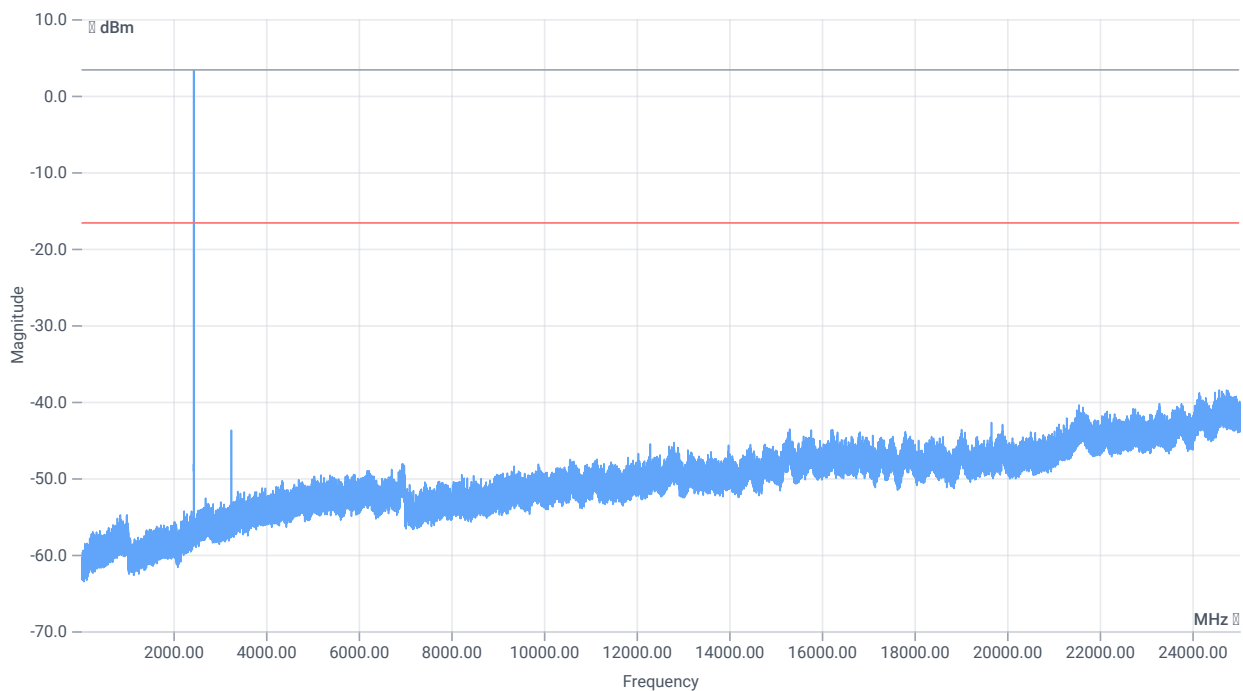
RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2402.00 MHz	---	---	4.36	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 24599.333 MHz	0	---	19.21	dB	INFO

Test at TX 2441 MHz

RESULT: Reference Power cond.

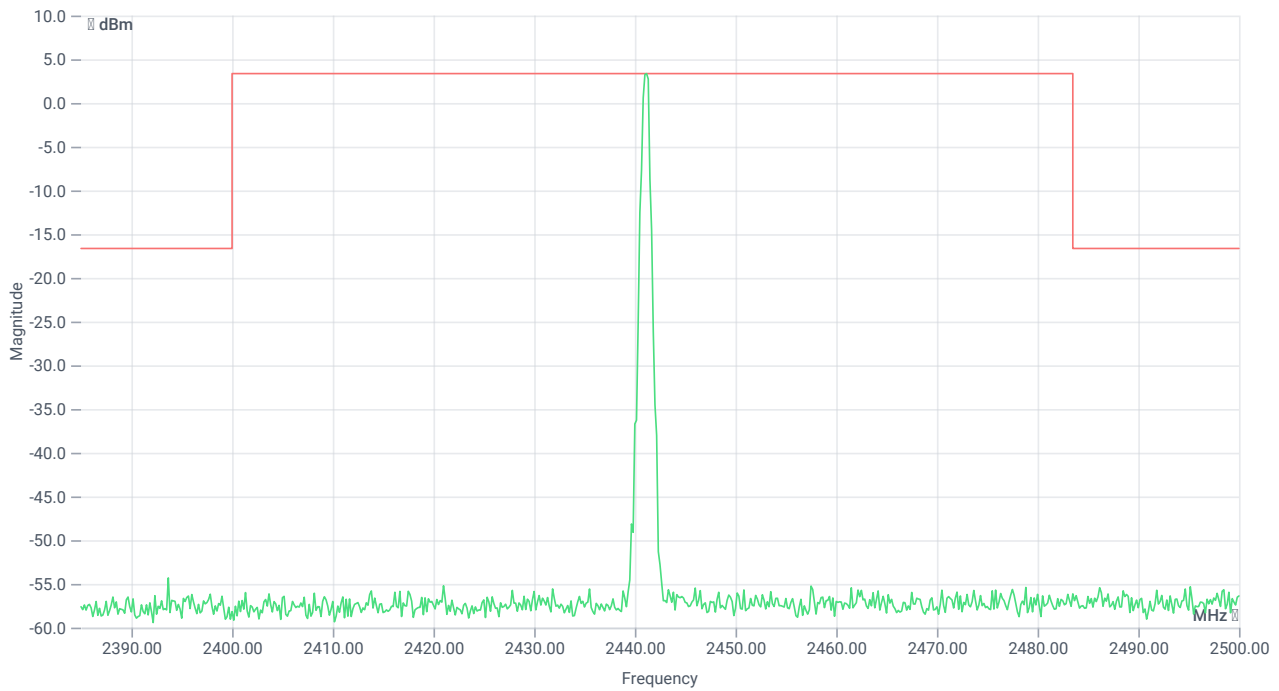
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	3.99	dBm	INFO
Ref. Frequency	---	---	2440.900	MHz	INFO



TX emissions

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	3.99 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 3001 SWE



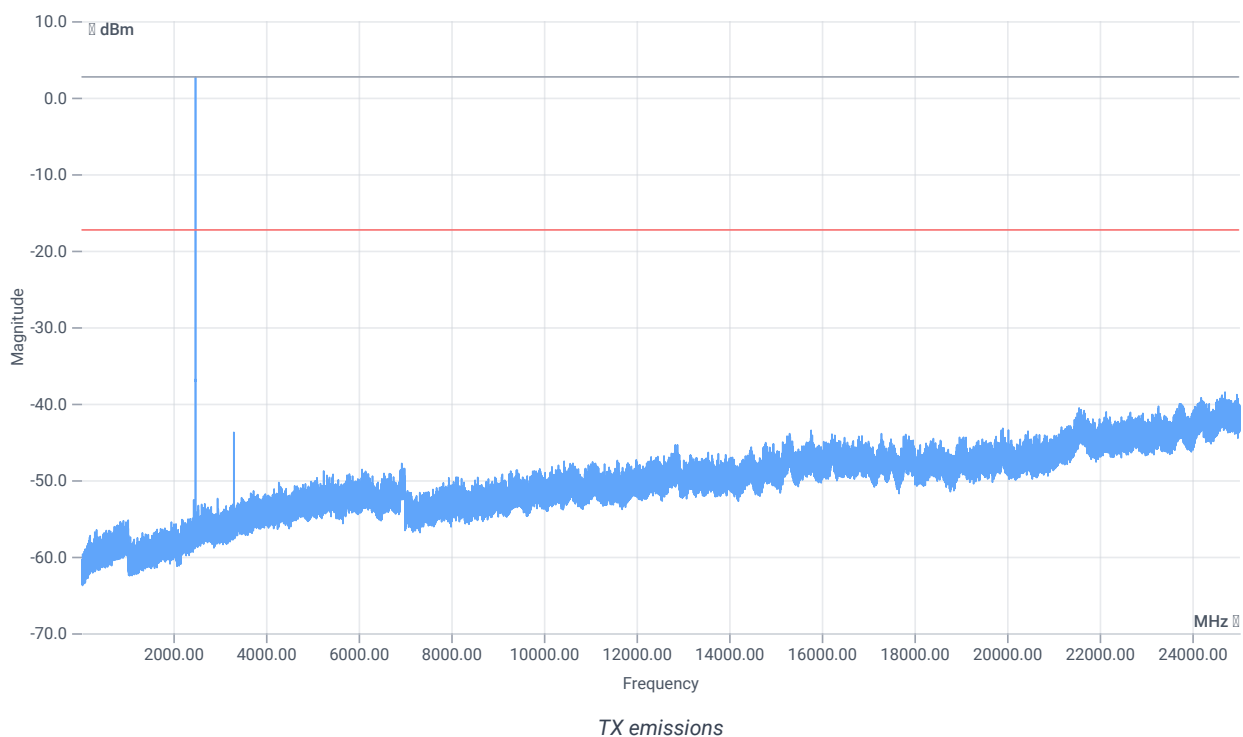
RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2441.17 MHz	---	---	3.36	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 24583.167 MHz	0	---	21.85	dB	INFO

Test at TX 2480 MHz

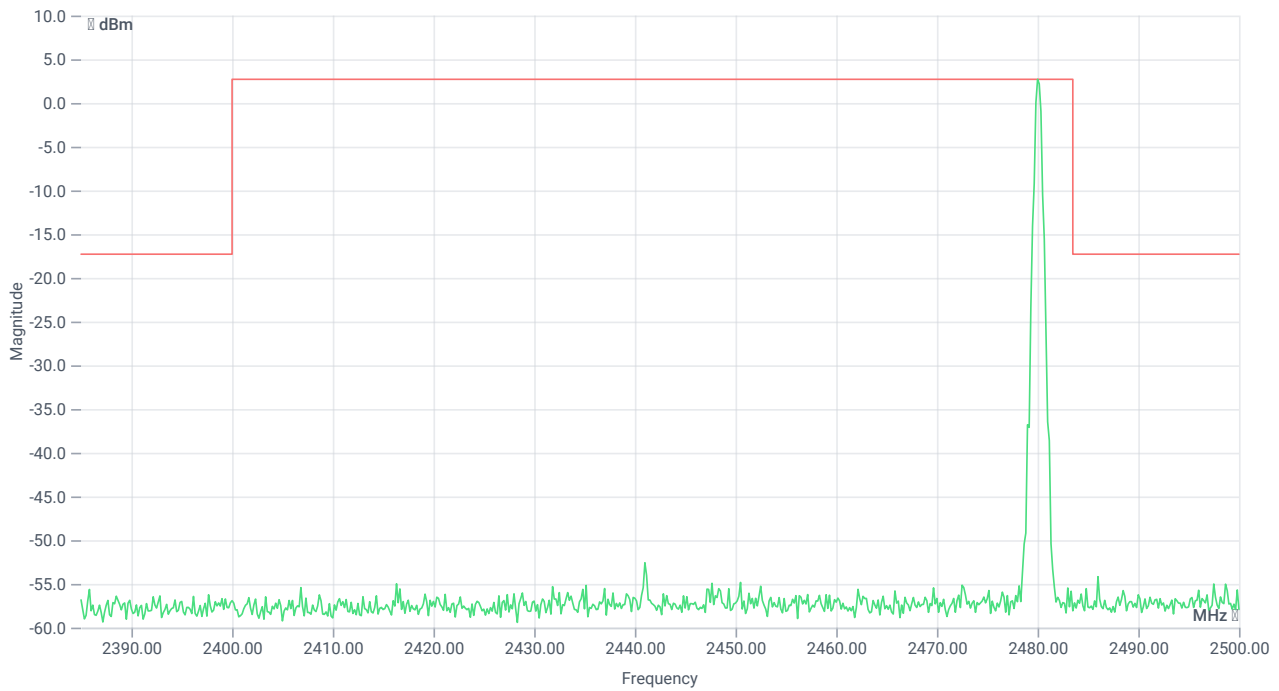
RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	3.64	dBm	INFO
Ref. Frequency	---	---	2479.900	MHz	INFO



READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	3.64 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 3001 SWE



RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2480.00 MHz	---	---	2.71	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 24707.667 MHz	0	---	21.19	dB	INFO

Verdict

PASS

FCC 15.247 # Maximum peak conducted output power FHSS ~ BT Classic EDR Pi/4DQPSK

Test References

TC Start	02.02.2023 10:59:00
Ambit Temp [°C] Humidity [rel%]	25.8 28
System Version	3.3.4.4
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Conducted FHSS - BT Classic EDR Pi/4DQPSK
Add. Information	

EUT Common Settings BT Classic

Intermodulation Value N	3
Image Freq. Low Mid High [MHz]	0 0 0
Power Class	1
Power Control	Enhanced
Longest Supported Packet Type	DH5
RF Supported	Basic Rate True EDR Pi/4DQPSK True EDR 8DPSK True
Testmode	LOOPback
Perform Inquiry	Yes
EUT BT Address (if Inquiry No)	0123456789AB
Signaling BT Address	BABEBEDADBAD
Switch Matrix & Pathcompensation enabled	Yes

Test Parameter

Technology to test	BT Classic EDR Pi/4DQPSK
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2441
Frequency high to test	True Freq [MHz] 2480
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	0.5
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

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

Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.62

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

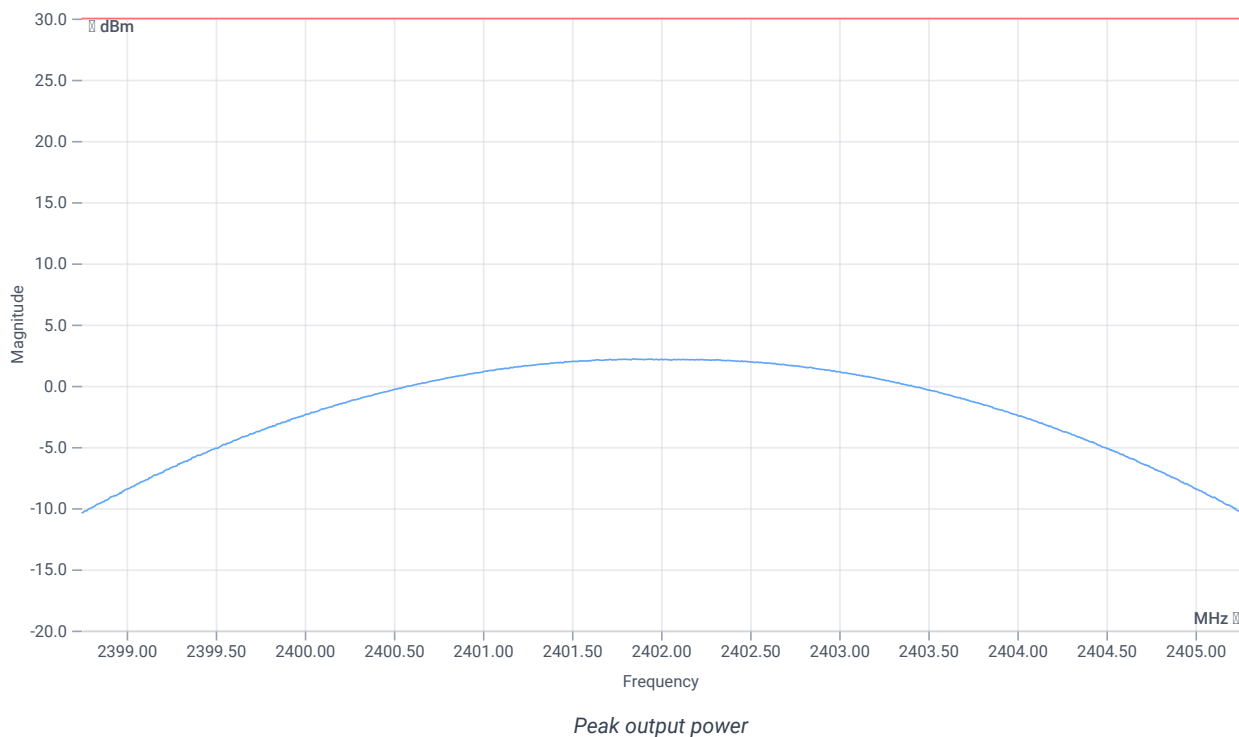
Test at TX 2402 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	1.32	dBm	INFO
Ref. Frequency	---	---	2402.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.32 11.09 20
Start [MHz] Stop [MHz]	2398.750 2405.250
RBW [MHz] VBW [MHz]	3.000000 10.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 SWE



RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	2.19	dBm	PASS
Peak Power	---	1000	1.65577	mW	PASS
Frequency at Peak	---	---	2401.948	MHz	INFO

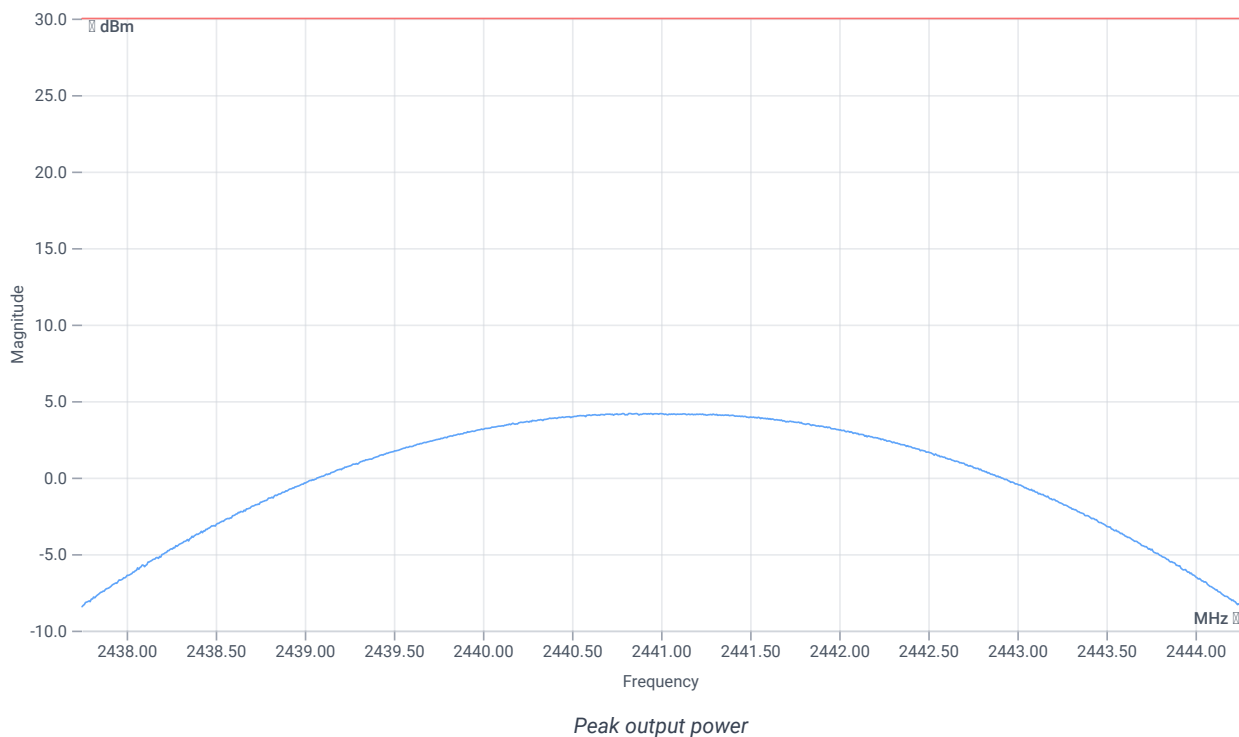
Test at TX 2441 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	2.68	dBm	INFO
Ref. Frequency	---	---	2441.100	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	12.68 11.16 20
Start [MHz] Stop [MHz]	2437.750 2444.250
RBW [MHz] VBW [MHz]	3.000000 10.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 SWE



RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	4.19	dBm	PASS
Peak Power	---	1000	2.624219	mW	PASS
Frequency at Peak	---	---	2440.825	MHz	INFO

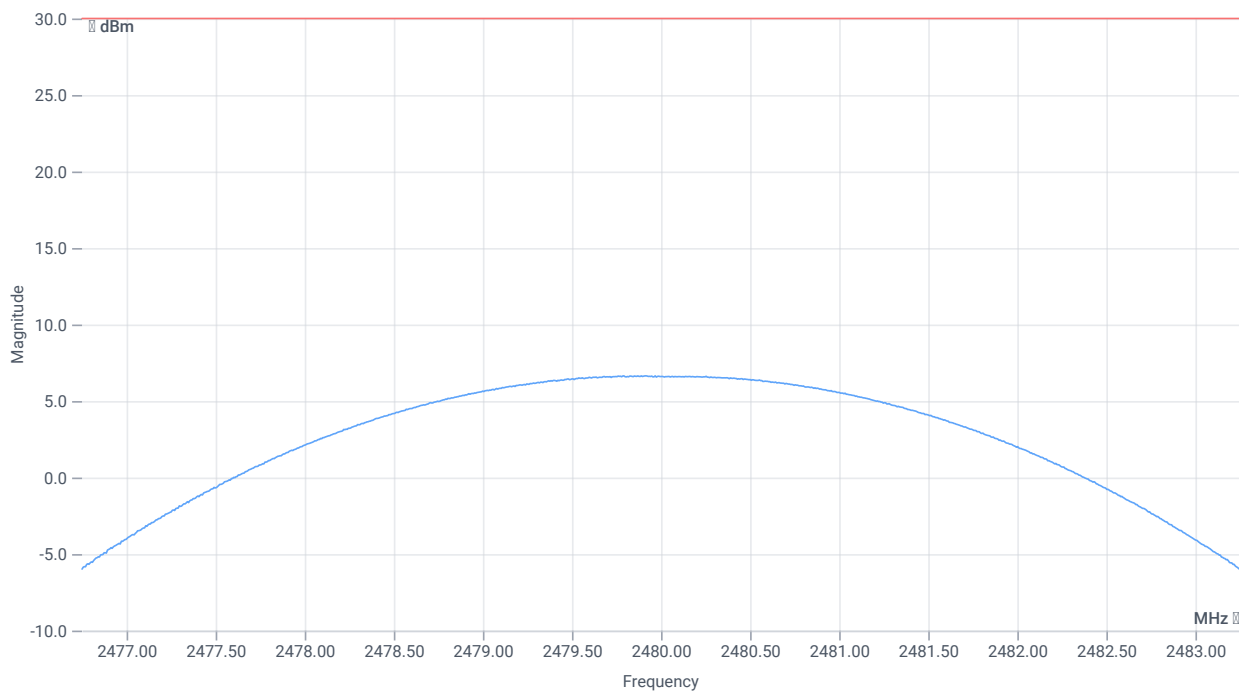
Test at TX 2480 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	5.67	dBm	INFO
Ref. Frequency	---	---	2480.000	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	15.67 11.21 20
Start [MHz] Stop [MHz]	2476.750 2483.250
RBW [MHz] VBW [MHz]	3.000000 10.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 SWE



RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	6.65	dBm	PASS
Peak Power	---	1000	4.62381	mW	PASS
Frequency at Peak	---	---	2479.916	MHz	INFO

Verdict

PASS

FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ BT Classic EDR Pi/4DQPSK

Test References

TC Start	02.02.2023 11:00:29
Ambit Temp [°C] Humidity [rel%]	25.9 28
System Version	3.3.4.4
Test Specification	FCC 15.247, ISED RSS247 -
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT - 20dB FHSS - BT Classic EDR Pi/4DQPSK
Add. Information	

EUT Common Settings BT Classic

Intermodulation Value N	3
Image Freq. Low Mid High [MHz]	0 0 0
Power Class	1
Power Control	Enhanced
Longest Supported Packet Type	DH5
RF Supported	Basic Rate True EDR Pi/4DQPSK True EDR 8DPSK True
Testmode	LOOPback
Perform Inquiry	Yes
EUT BT Address (if Inquiry No)	0123456789AB
Signaling BT Address	BABEBEDADBAD
Switch Matrix & Pathcompensation enabled	Yes

Test Parameter

Technology to test	BT Classic EDR Pi/4DQPSK
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2402
Frequency mid to test	True Freq [MHz] 2441
Frequency high to test	True Freq [MHz] 2480
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	0.5
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

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

Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/102550,4.0.62

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

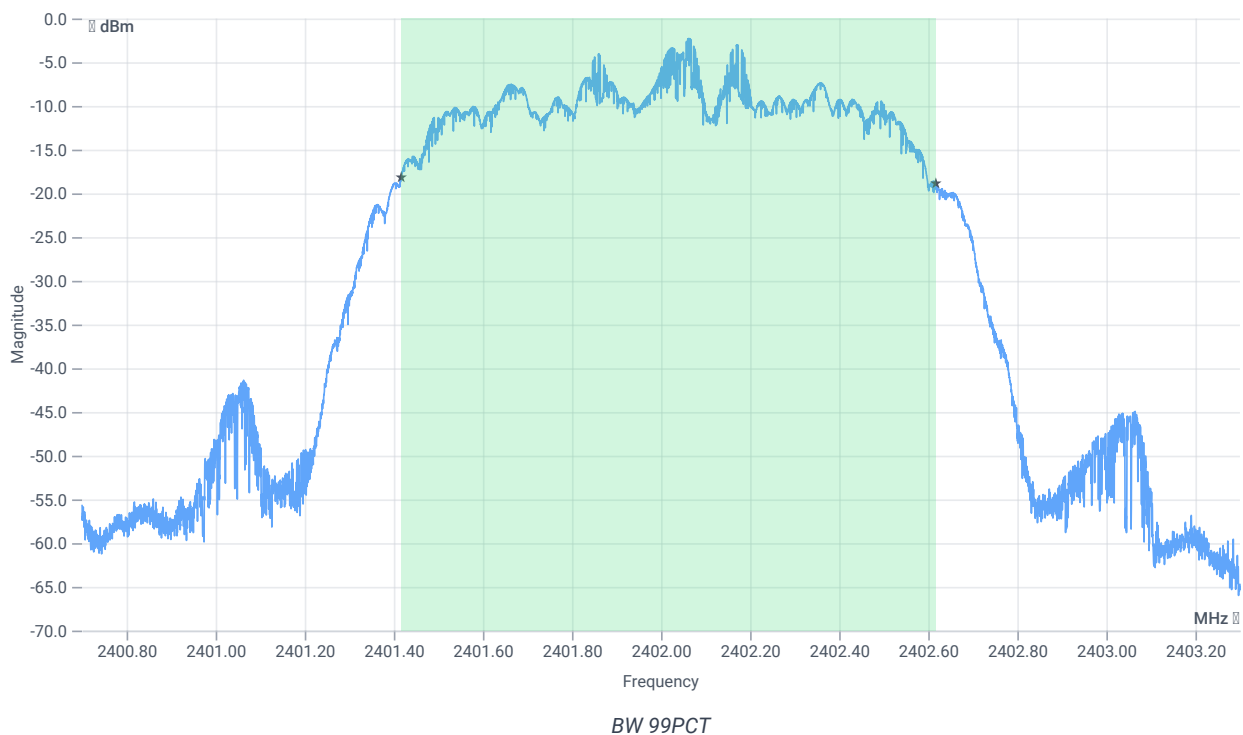
Test at TX 2402 MHz

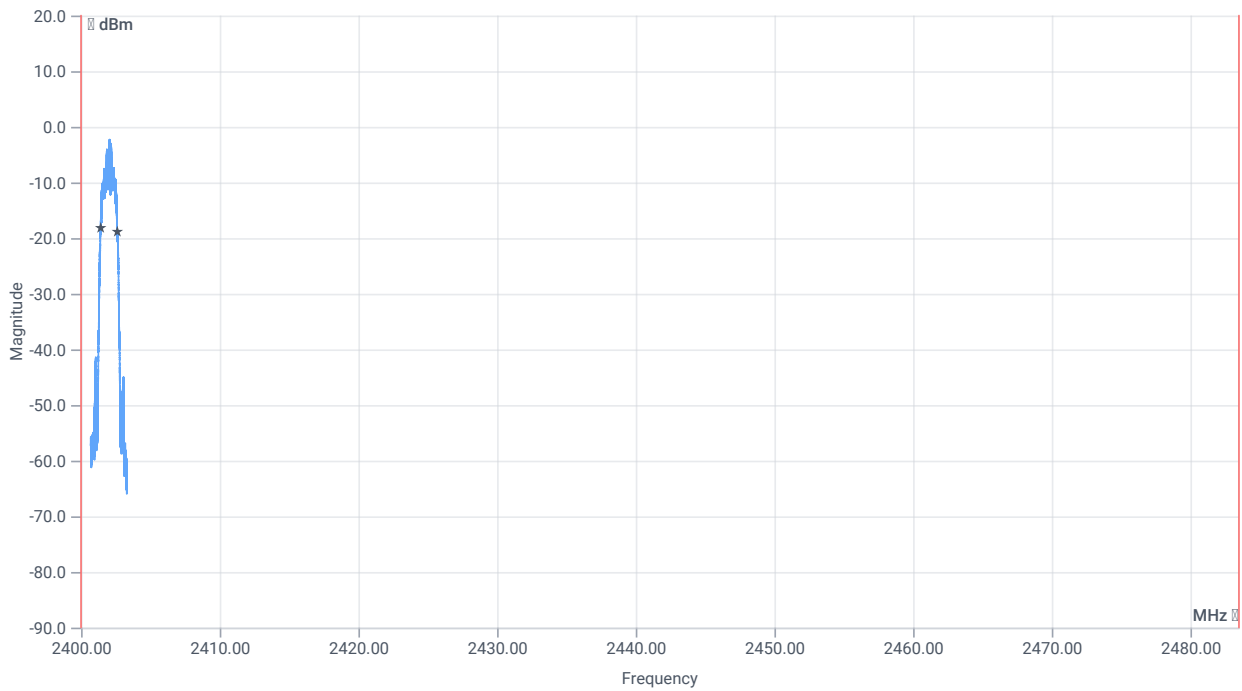
RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	0.99	dBm	INFO
Ref. Frequency	---	---	2402.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	5.99 11.09 10
Start [MHz] Stop [MHz]	2400.700 2403.300
RBW [MHz] VBW [MHz]	0.030000 0.100000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

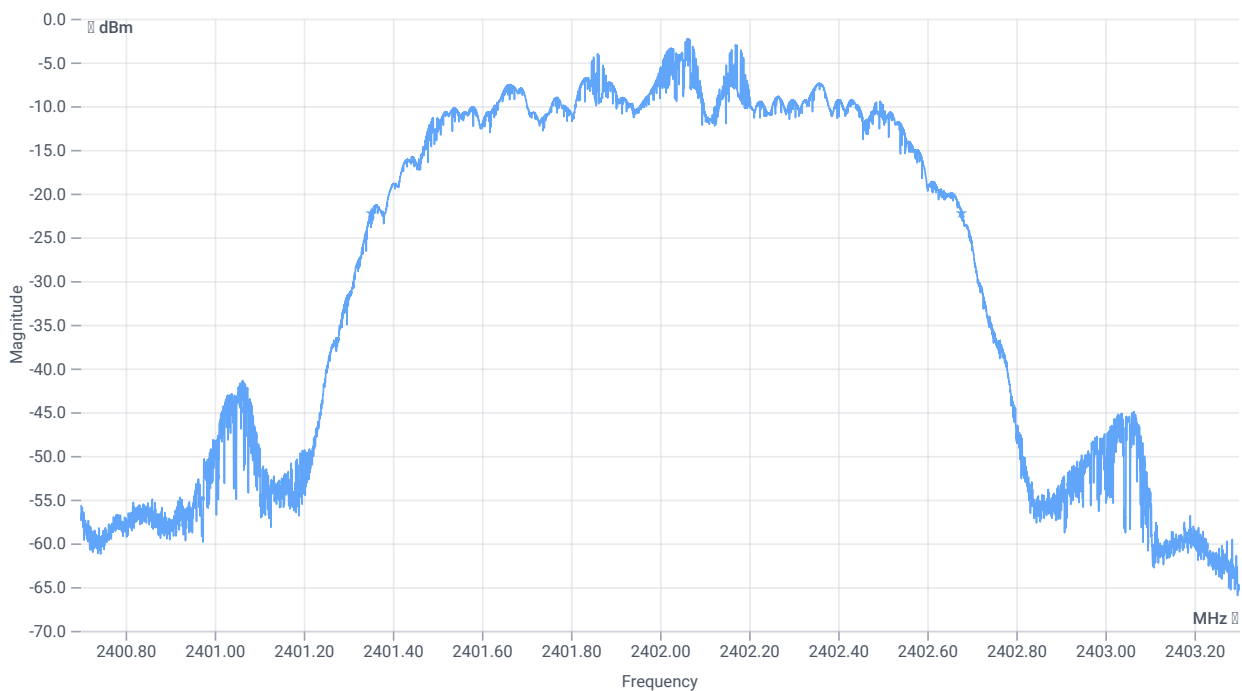




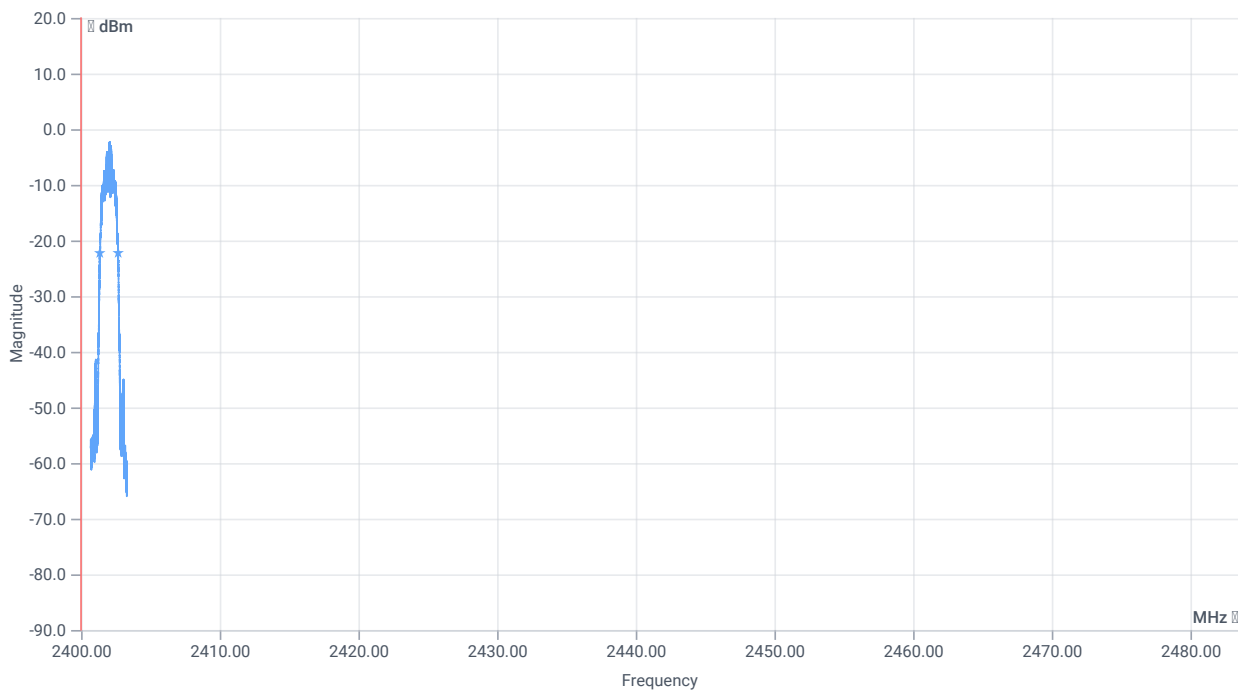
BW within Band 99PCT

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1201.000	kHz	INFO
T1 99%	2400.000000	---	2401.4166	MHz	PASS
T2 99%	---	2483.500000	2402.6172	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1325	kHz	INFO
T1 20dB	2400.000000	---	2401.3516	MHz	PASS
T2 20dB	---	2483.500000	2402.6770	MHz	PASS

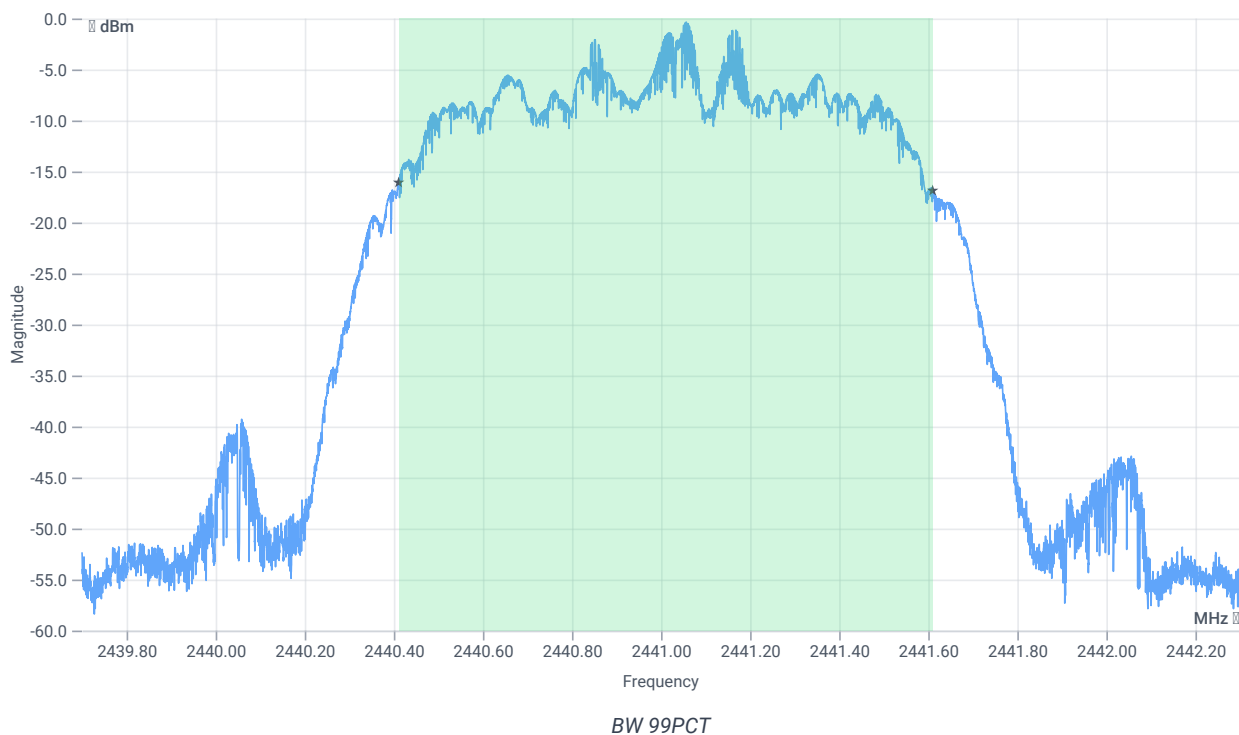
Test at TX 2441 MHz

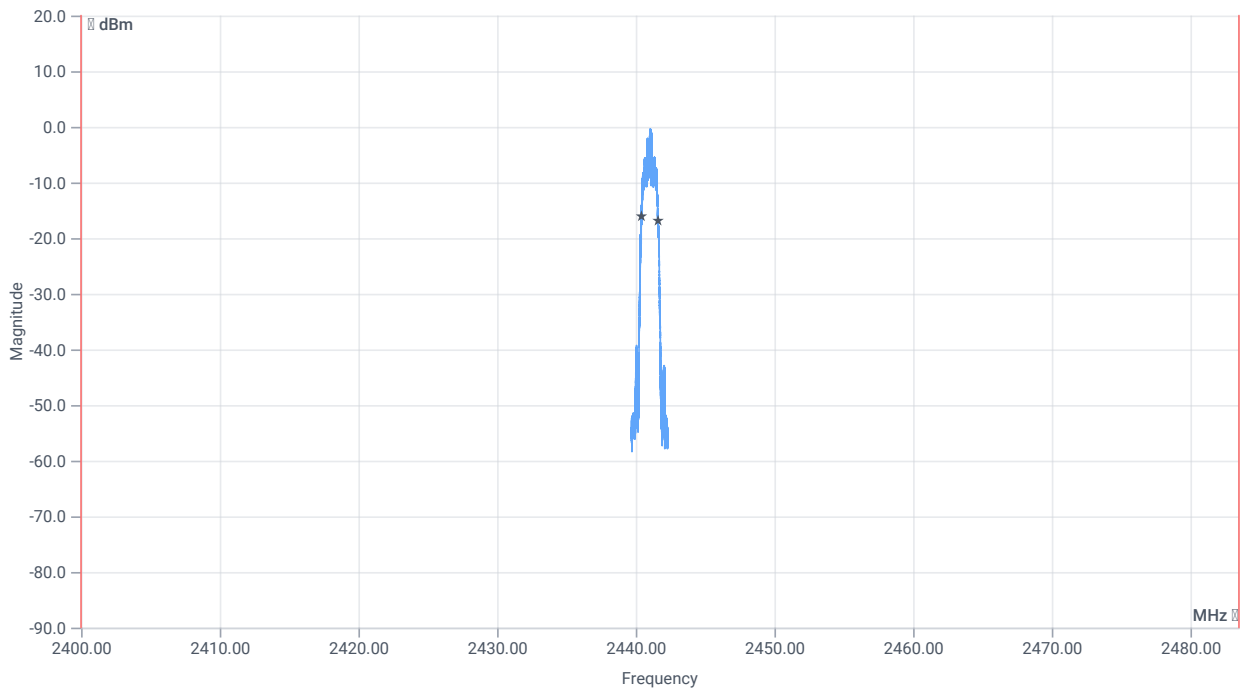
RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	3.05	dBm	INFO
Ref. Frequency	---	---	2441.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	8.05 11.16 15
Start [MHz] Stop [MHz]	2439.700 2442.300
RBW [MHz] VBW [MHz]	0.030000 0.100000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

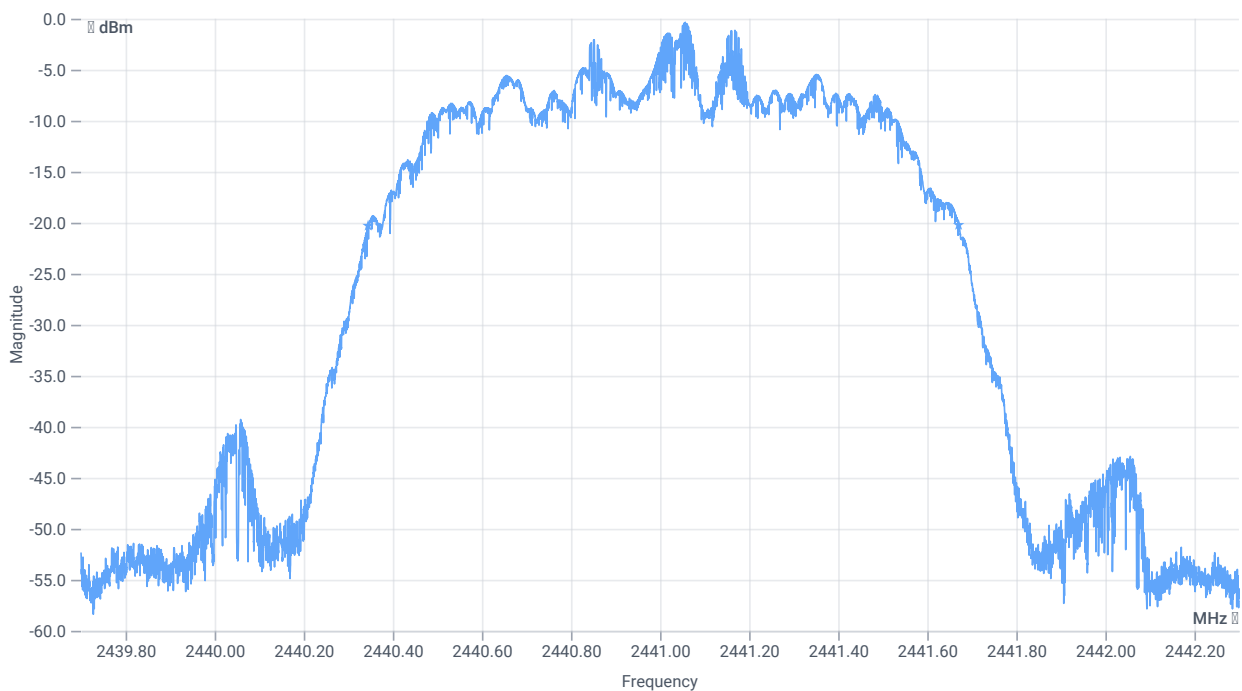




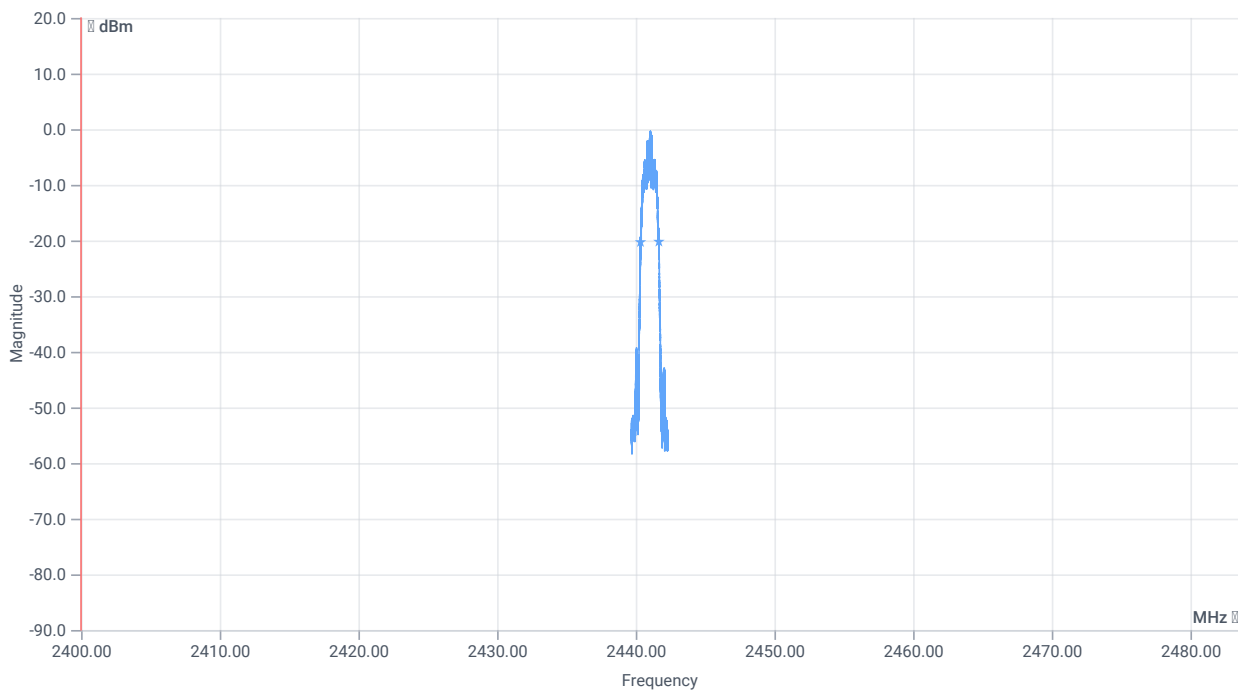
BW within Band 99PCT

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1199.000	kHz	INFO
T1 99%	2400.000000	---	2440.4109	MHz	PASS
T2 99%	---	2483.500000	2441.6099	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1326	kHz	INFO
T1 20dB	2400.000000	---	2440.3445	MHz	PASS
T2 20dB	---	2483.500000	2441.6705	MHz	PASS

Test at TX 2480 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	5.74	dBm	INFO
Ref. Frequency	---	---	2479.800	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.74 11.21 15
Start [MHz] Stop [MHz]	2478.700 2481.300
RBW [MHz] VBW [MHz]	0.030000 0.100000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

