

Measurement Results

No.1-2398/21-01-10_Annex_MR

Test logging

This document is electronically signed and valid without handwritten signature.
For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Document authorized:

Jörg Warken
Lab Manager
Radio Communications

Table of Content

EUT Information	3
FCC Part 15.247 Maximum Peak Conducted Output Power FHSS ~ BT Classic Basic rate	4
FCC Part 15.247 Number Of Hopping Channels FHSS ~ BT Classic Basic rate	8
FCC Part 15.247 Carrier Frequency Separation FHSS ~ BT Classic Basic rate	13
FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate	16
FCC Part 15.247 TX Spurious Conducted ~ BT Classic Basic rate	26

EUT Information

EUT DEFINITION	
Manufacturer	Sonova Communications AG
Type	Phonak Earbuds TWE21
Serial Number	Sample right earbud
Setup Number	1.0
Version SW	NI
Version FW	0.9.3
Version HW	VP2
Comment 1	USB powered UART
Comment 2	
Temperature [°C] Min	5
Temperature [°C] Nom	20
Temperature [°C] Max	40
Voltage [V] Min	3.1
Voltage [V] Nom	3.8
Voltage [V] Max	4.35

FCC Part 15.247 Maximum Peak Conducted Output Power FHSS ~ BT Classic Basic rate

Test References	
TC Start	17.06.2021 08:24:19
Ambit Temp [°C] Humidity [rel%]	25.4 51
System Version	3.0.1.4
Test Specification	FCC Part 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	Yes
Longest Supported Packet Type	DH5
RF Supported	Basic Rate True EDR Pi/4DQPSK False EDR 8DPSK False
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-30,1321.3008K30/103809,3.70	
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171	
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI	

Test at TX 2402 MHz

RESULT: Reference Power cond.

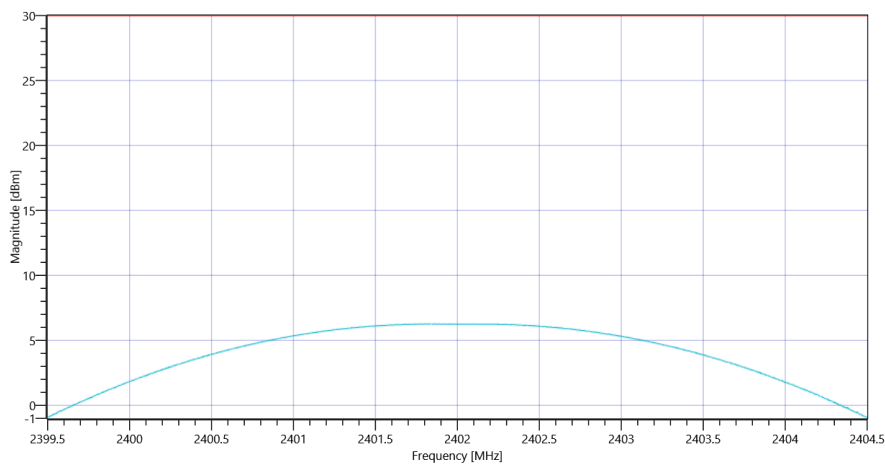
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.40	dBm	INFO
Ref. Frequency	---	---	2401.900	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.40 10.59 25
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	6.26	dBm	PASS
Peak Power	---	1000	4.226686	mW	PASS
Frequency at Peak	---	---	2401.955	MHz	INFO



FCC Part 15.247 Maximum Peak Conducted Output Power FHSS ~ BT Classic Basic rate

Test at TX 2441 MHz

RESULT: Reference Power cond.

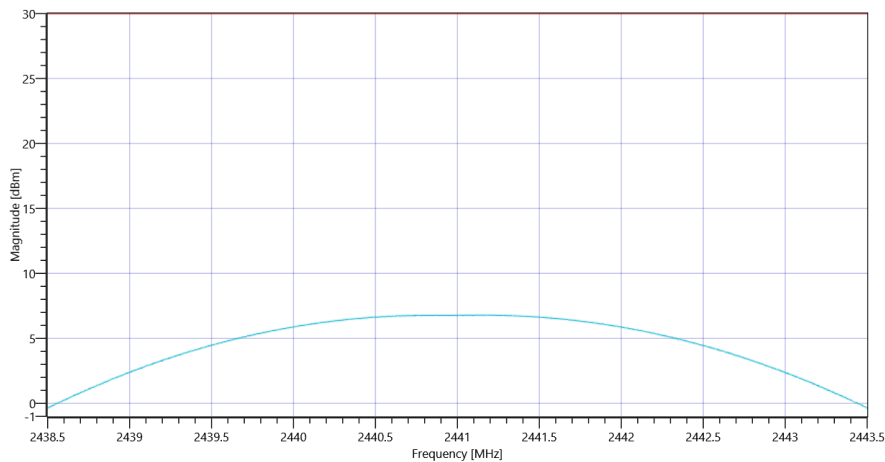
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.85	dBm	INFO
Ref. Frequency	---	---	2441.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.85 10.6 25
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	6.79	dBm	PASS
Peak Power	---	1000	4.775293	mW	PASS
Frequency at Peak	---	---	2441.11	MHz	INFO



FCC Part 15.247 Maximum Peak Conducted Output Power FHSS ~ BT Classic Basic rate

Test at TX 2480 MHz

RESULT: Reference Power cond.

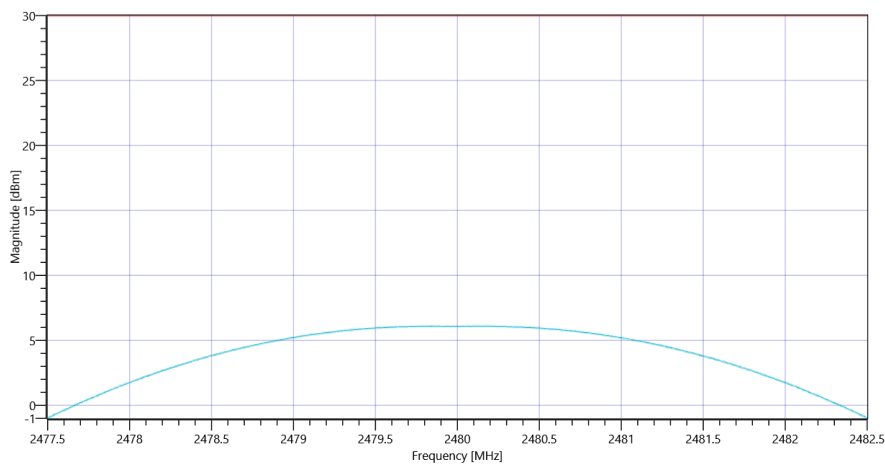
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.12	dBm	INFO
Ref. Frequency	---	---	2480.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.12 10.65 25
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	6.09	dBm	PASS
Peak Power	---	1000	4.064433	mW	PASS
Frequency at Peak	---	---	2479.82	MHz	INFO



FCC Part 15.247 Maximum Peak Conducted Output Power FHSS ~ BT Classic Basic rate

General verdict

PASS

FCC Part 15.247 Number Of Hopping Channels FHSS ~ BT Classic Basic rate

Test References	
TC Start	17.06.2021 08:26:02
Ambit Temp [°C] Humidity [rel%]	25.5 51
System Version	3.0.1.4
Test Specification	FCC Part 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	Yes
Longest Supported Packet Type	DH5
RF Supported	Basic Rate True EDR Pi/4DQPSK False EDR 8DPSK False
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-30,1321.3008K30/103809,3.70	
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171	
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI	

Test at TX hopping MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	7.08	dBm	INFO
Ref. Frequency	---	---	2449.090	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	12.08 10.6 20
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

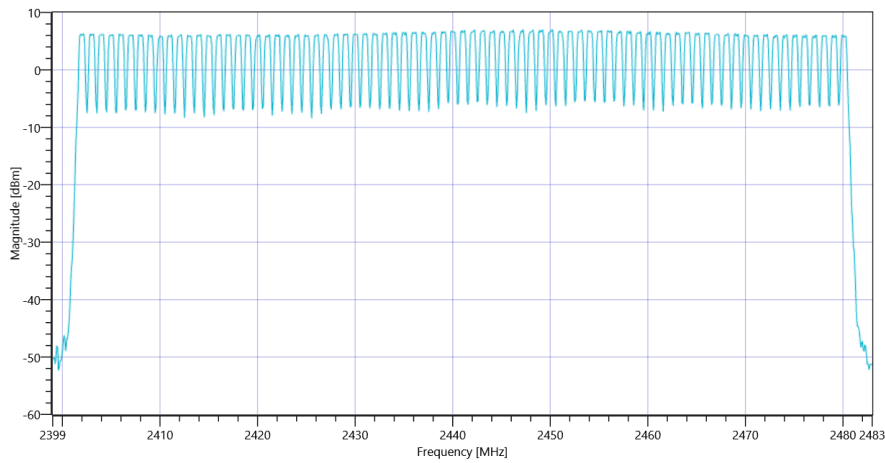
RESULT

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
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

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
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
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

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
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
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

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Hopp channel (rounded)	---	---	2477	MHz	INFO
Hopp channel (rounded)	---	---	2478	MHz	INFO
Hopp channel (rounded)	---	---	2479	MHz	INFO
Hopp channel (rounded)	---	---	2480	MHz	INFO
Σ Hopping channels	15	---	79	Number	PASS



FCC Part 15.247 Number Of Hopping Channels FHSS ~ BT Classic Basic rate

General verdict	PASS
-----------------	------

FCC Part 15.247 Carrier Frequency Separation FHSS ~ BT Classic Basic rate

Test References	
TC Start	17.06.2021 08:26:58
Ambit Temp [°C] Humidity [rel%]	25.6 51
System Version	3.0.1.4
Test Specification	FCC Part 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	Yes
Longest Supported Packet Type	DH5
RF Supported	Basic Rate True EDR Pi/4DQPSK False EDR 8DPSK False
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-30,1321.3008K30/103809,3.70	
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171	
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI	

Test at TX hopping MHz

RESULT: Reference Power cond.

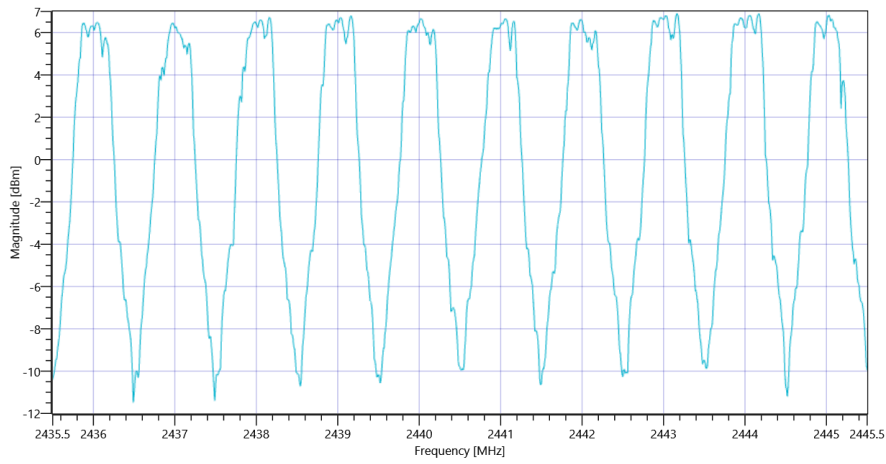
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	7.04	dBm	INFO
Ref. Frequency	---	---	2448.190	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	12.04 10.6 20
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
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



FCC Part 15.247 Carrier Frequency Separation FHSS ~ BT Classic Basic rate

General verdict

PASS

FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate

Test References	
TC Start	17.06.2021 08:29:06
Ambit Temp [°C] Humidity [rel%]	25.7 50
System Version	3.0.1.4
Test Specification	FCC Part 15.247
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	Yes
Longest Supported Packet Type	DH5
RF Supported	Basic Rate True EDR Pi/4DQPSK False EDR 8DPSK False
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-30,1321.3008K30/103809,3.70	
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171	
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI	

Test at TX 2402 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.24	dBm	INFO
Ref. Frequency	---	---	2401.900	MHz	INFO

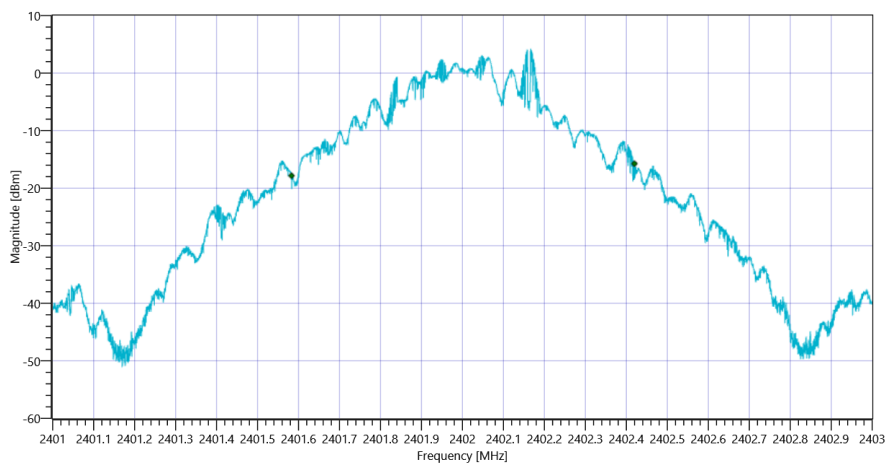
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.24 10.59 20
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

RESULT

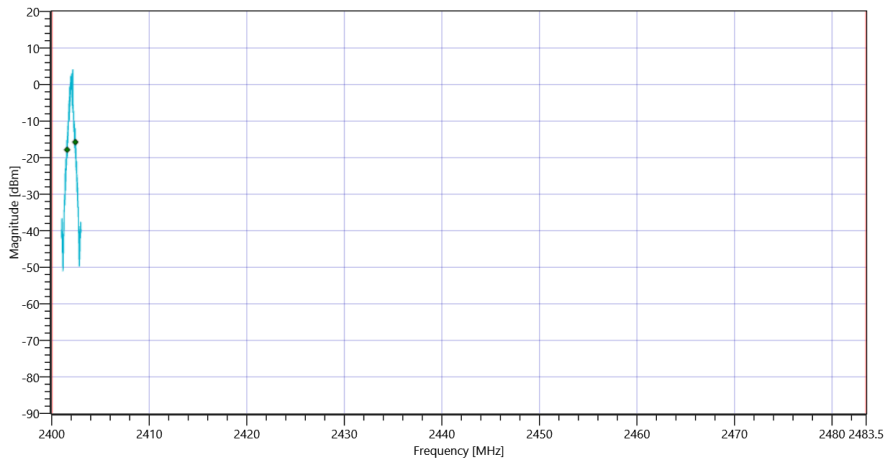
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	836.916	kHz	INFO
T1 99%	2400.000000	---	2401.5828	MHz	PASS
T2 99%	---	2483.500000	2402.4198	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate 99PCT

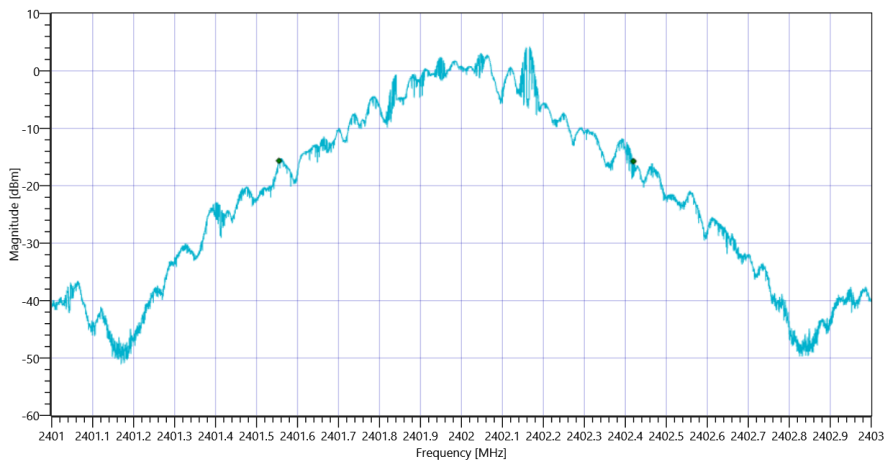
Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate

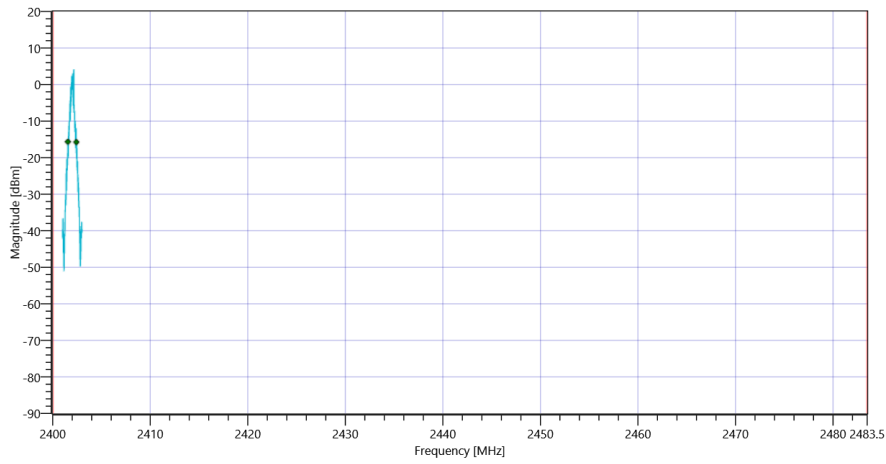
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	865	kHz	INFO
T1 20dB	2400.000000	---	2401.5546	MHz	PASS
T2 20dB	---	2483.500000	2402.4198	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate 20dB

Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate

Test at TX 2441 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.66	dBm	INFO
Ref. Frequency	---	---	2441.100	MHz	INFO

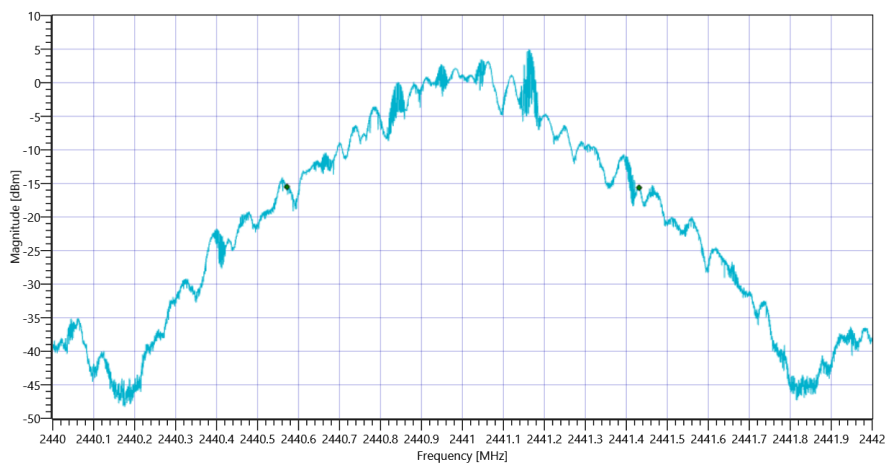
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.66 10.6 20
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

RESULT

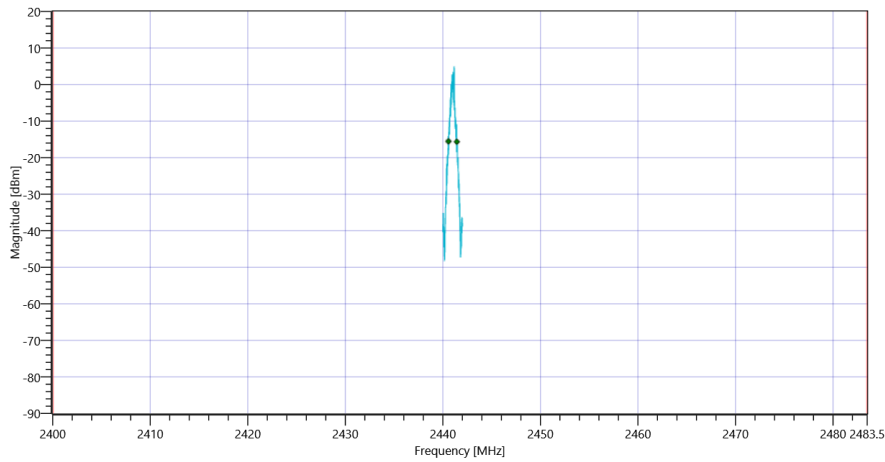
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	859.114	kHz	INFO
T1 99%	2400.000000	---	2440.5718	MHz	PASS
T2 99%	---	2483.500000	2441.4310	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate 99PCT

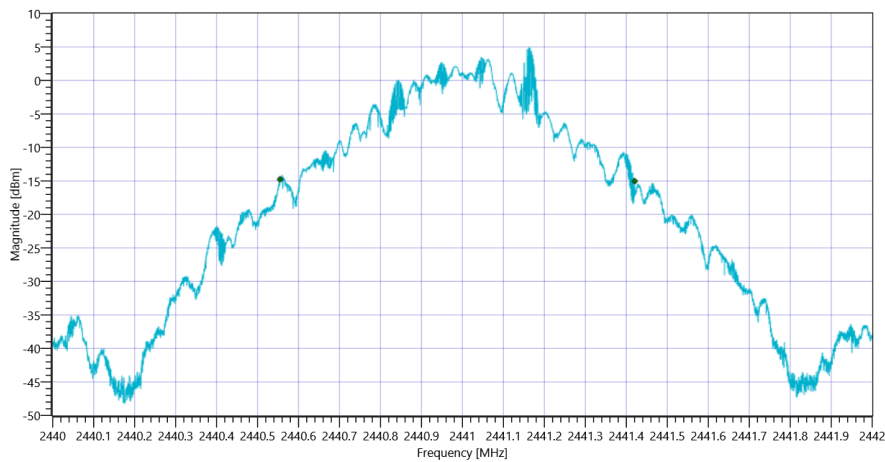
Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate

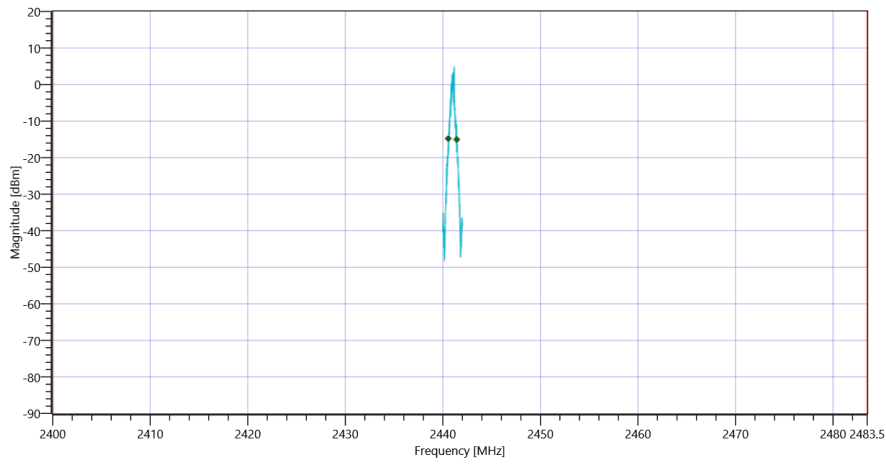
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	866	kHz	INFO
T1 20dB	2400.000000	---	2440.5548	MHz	PASS
T2 20dB	---	2483.500000	2441.4204	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate 20dB

Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate

Test at TX 2480 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	5.94	dBm	INFO
Ref. Frequency	---	---	2480.100	MHz	INFO

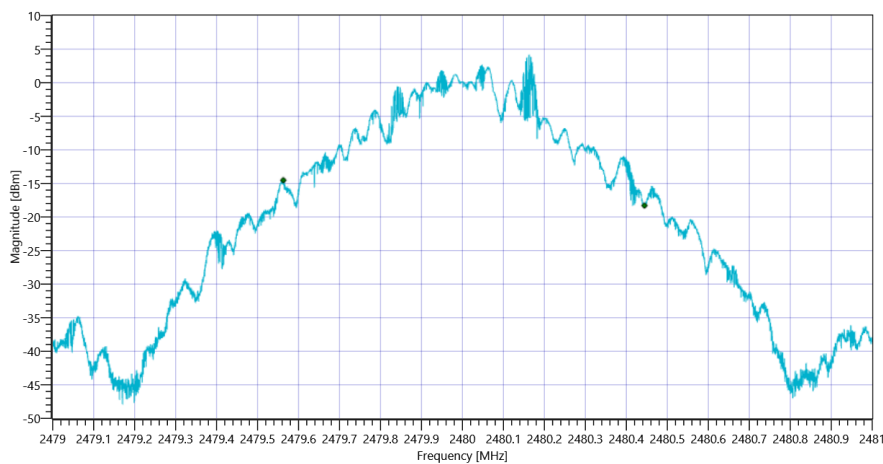
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.94 10.65 20
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

RESULT

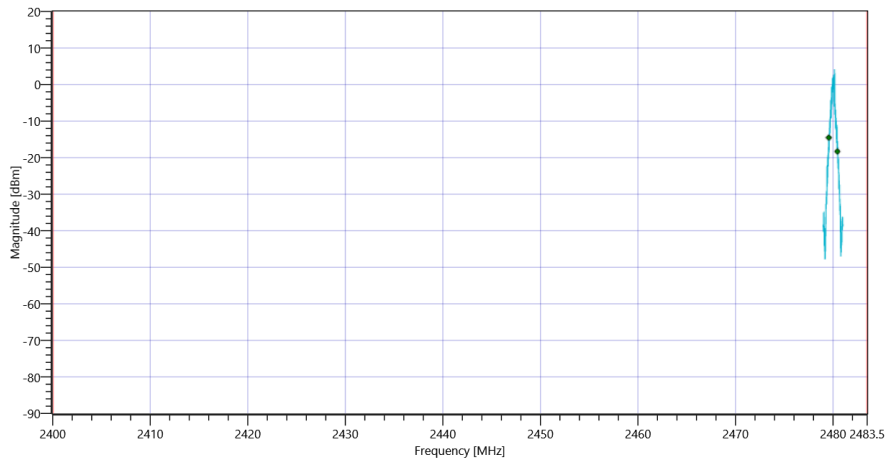
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	881.312	kHz	INFO
T1 99%	2400.000000	---	2479.5628	MHz	PASS
T2 99%	---	2483.500000	2480.4442	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate 99PCT

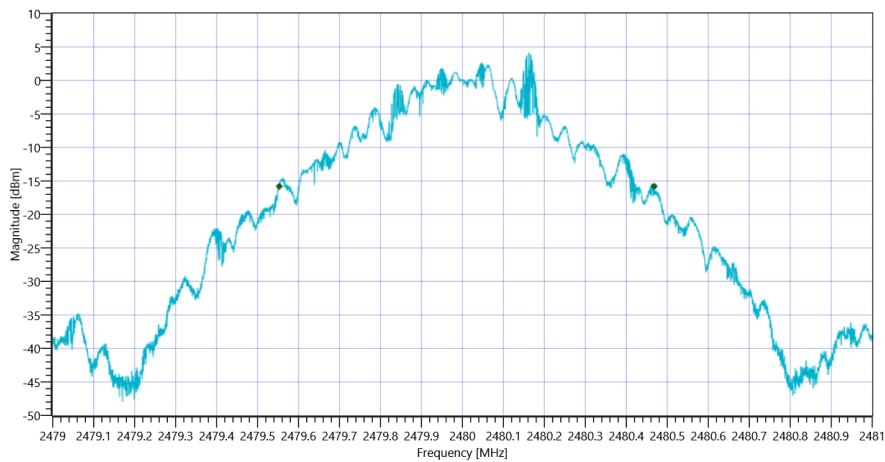
Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate

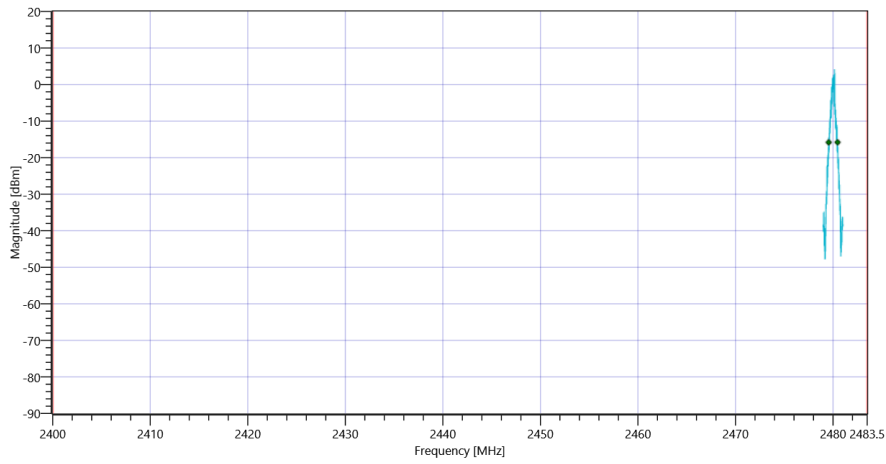
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	915	kHz	INFO
T1 20dB	2400.000000	---	2479.5530	MHz	PASS
T2 20dB	---	2483.500000	2480.4682	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate 20dB

Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT Classic Basic rate

General verdict

PASS

FCC Part 15.247 TX Spurious Conducted ~ BT Classic Basic rate

Test References	
TC Start	17.06.2021 08:31:56
Ambit Temp [°C] Humidity [rel%]	25.8 50
System Version	3.0.1.4
Test Specification	FCC Part 15.247
Test Method	IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable.
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	Yes
Longest Supported Packet Type	DH5
RF Supported	Basic Rate True EDR Pi/4DQPSK False EDR 8DPSK False
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-30,1321.3008K30/103809,3.70	
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171	
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI	

Test at TX 2402 MHz

RESULT: Reference Power cond.

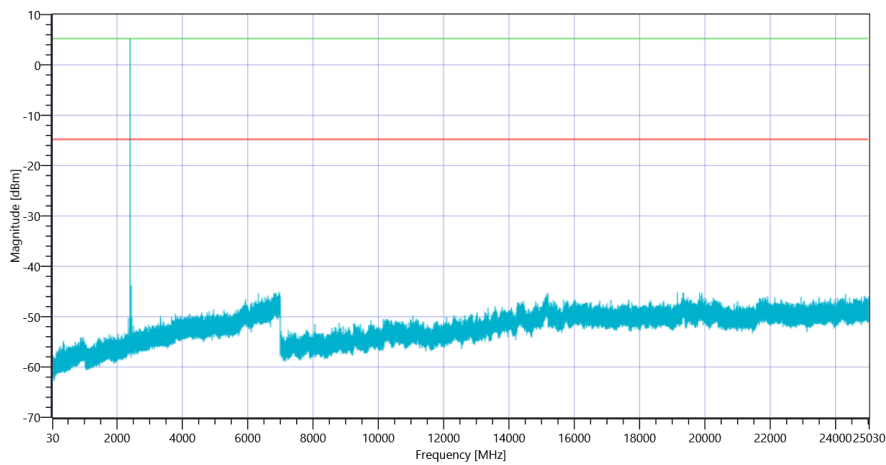
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.15	dBm	INFO
Ref. Frequency	---	---	2401.800	MHz	INFO

READ SA SETTINGS:

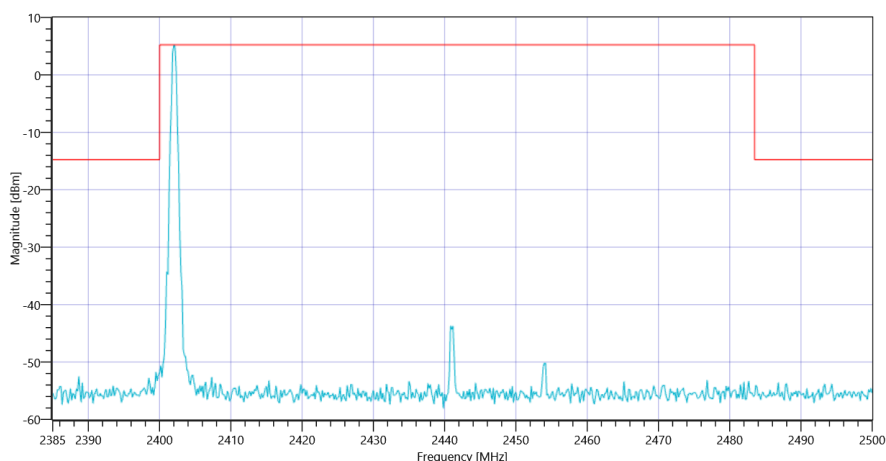
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	6.15 0 25
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2402.00 MHz	---	---	5.24	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 6965.833 MHz	0	---	30.33	dB	INFO



FCC Part 15.247 TX Spurious Conducted ~ BT Classic Basic rate 2402



FCC Part 15.247 TX Spurious Conducted ~ BT Classic Basic rate 2402

Test at TX 2441 MHz

RESULT: Reference Power cond.

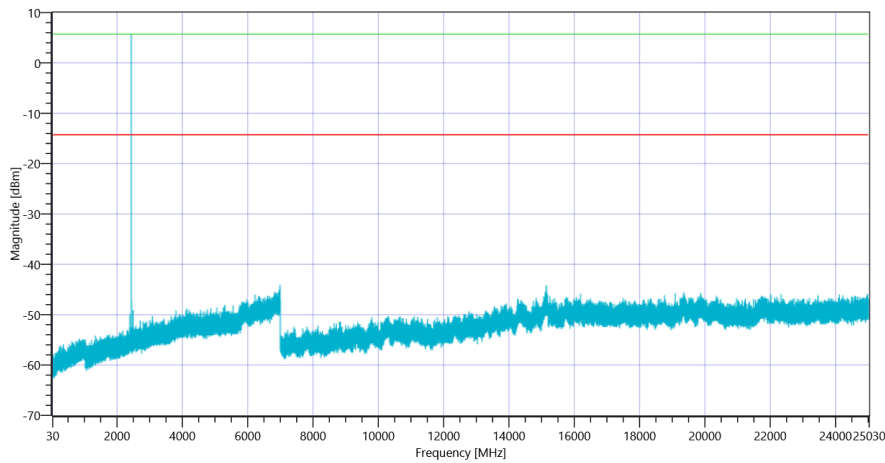
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.49	dBm	INFO
Ref. Frequency	---	---	2441.200	MHz	INFO

READ SA SETTINGS:

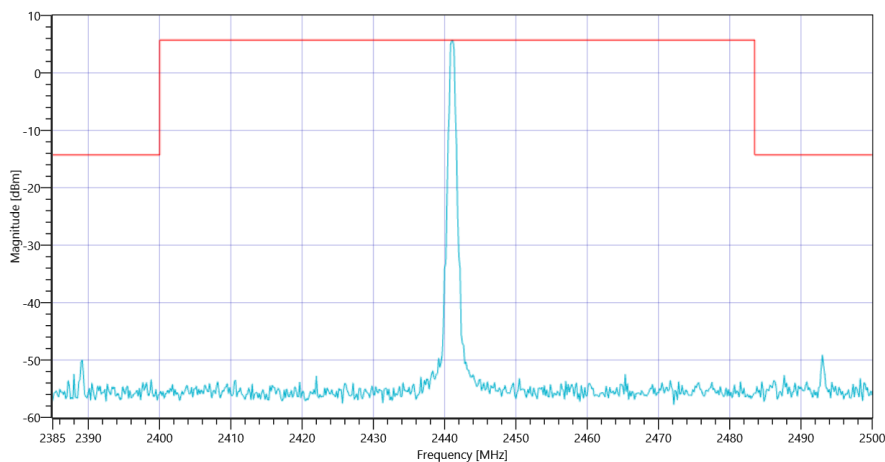
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	6.49 0 25
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2441.17 MHz	---	---	5.71	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 6995.167 MHz	0	---	29.77	dB	INFO



FCC Part 15.247 TX Spurious Conducted ~ BT Classic Basic rate 2441



FCC Part 15.247 TX Spurious Conducted ~ BT Classic Basic rate 2441

Test at TX 2480 MHz

RESULT: Reference Power cond.

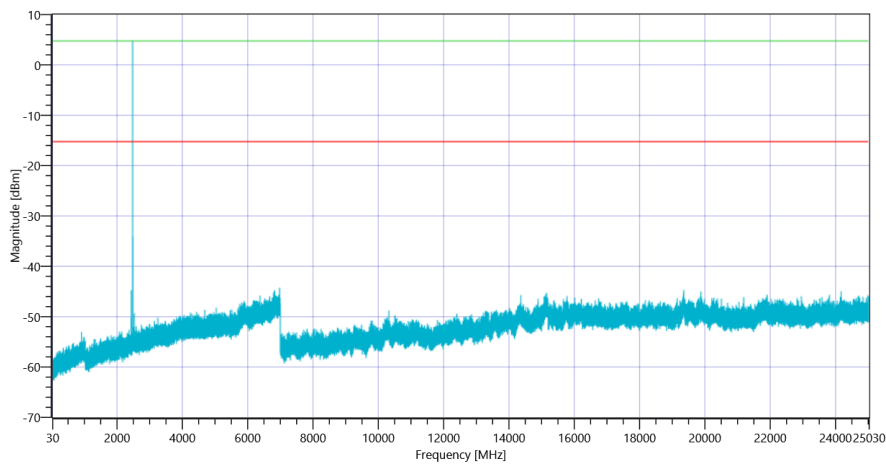
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	5.76	dBm	INFO
Ref. Frequency	---	---	2480.200	MHz	INFO

READ SA SETTINGS:

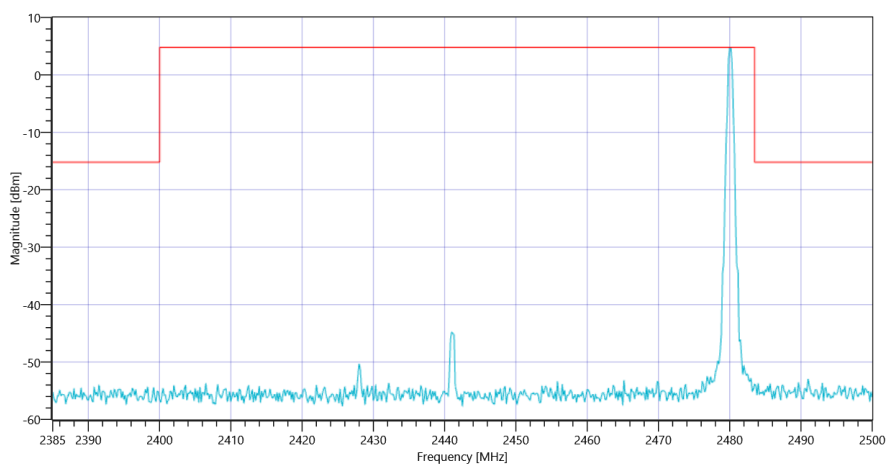
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	5.76 0 25
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2480.00 MHz	---	---	4.78	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 30 MHz	0	---	-141.57	dB	INFO



FCC Part 15.247 TX Spurious Conducted ~ BT Classic Basic rate 2480



FCC Part 15.247 TX Spurious Conducted ~ BT Classic Basic rate 2480

General verdict

PASS

- END OF DOCUMENT -
