

Measurement Results

No.1-5147/22-01-05_Annex_MR

Test logging

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Document authorized:

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Radio Communications

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

Test References

TC Start	19.12.2022 14:29:54
Ambit Temp [°C] Humidity [rel%]	26.5 21
System Version	3.3.3.0
Test Specification	FCC 15.247 -
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.1 RBW ≥ DTS Bandwidth
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Conducted DTS - BT LE 1 Msps
Add. 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 TWO 33 2400 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]	0.5
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.

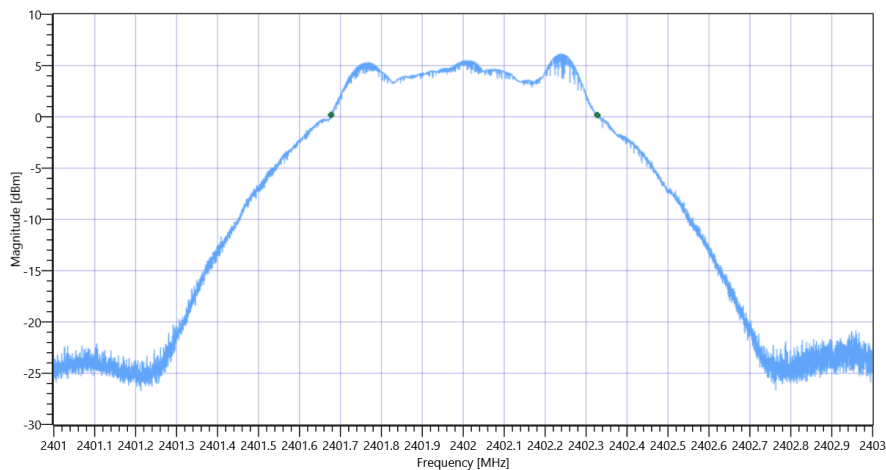
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.32	dBm	INFO
Ref. Frequency	---	---	2402.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.32 11.09 20
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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	650	kHz	INFO



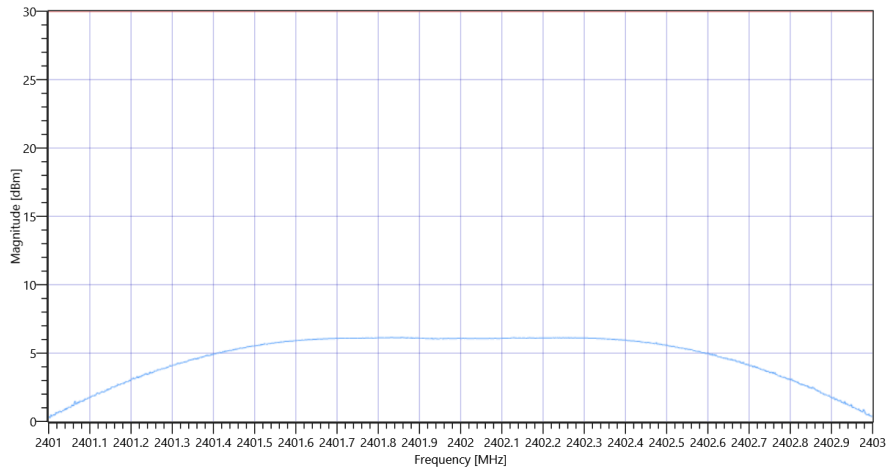
FCC 15.247 # Maximum peak conducted output power DTS ~ BT LE 1 Msps DTS BW

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.32 11.09 25
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

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	6.14	dBm	PASS
Peak Power	---	1000	4.111497	mW	PASS
Frequency at Peak	---	---	2401.852	MHz	INFO



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

Test at TX 2440 MHz

RESULT: Reference Power cond.

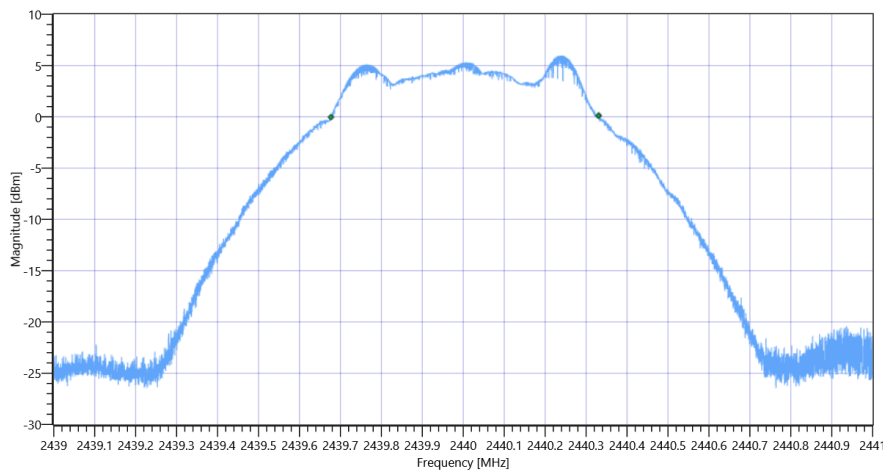
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.15	dBm	INFO
Ref. Frequency	---	---	2440.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.15 11.16 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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	654	kHz	INFO



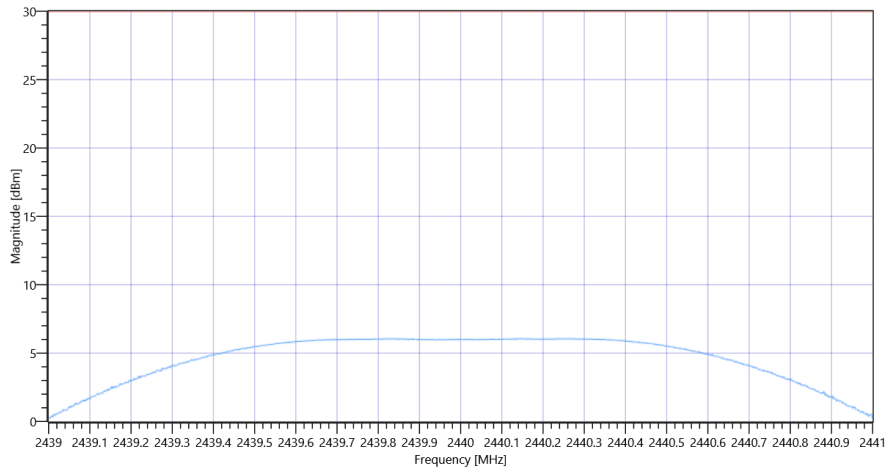
FCC 15.247 # Maximum peak conducted output power DTS ~ BT LE 1 Msps DTS BW

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.15 11.16 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

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	6.05	dBm	PASS
Peak Power	---	1000	4.02717	mW	PASS
Frequency at Peak	---	---	2440.142	MHz	INFO



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

Test at TX 2480 MHz

RESULT: Reference Power cond.

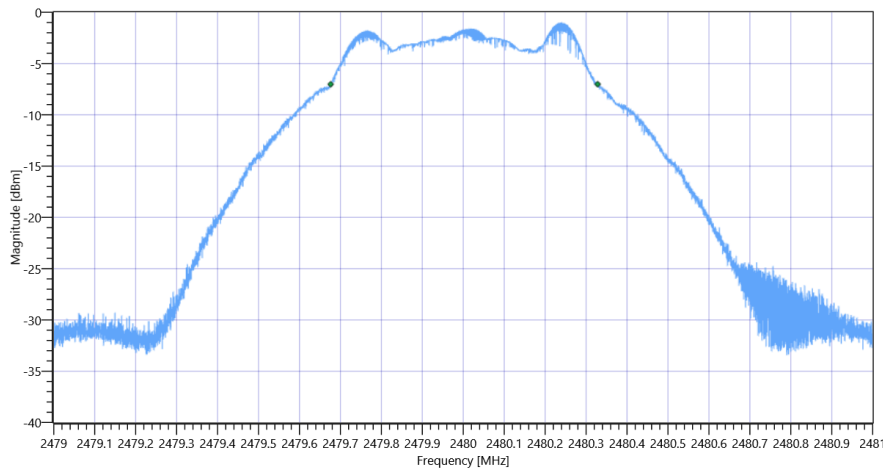
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	-0.86	dBm	INFO
Ref. Frequency	---	---	2480.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	4.14 11.21 10
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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	652	kHz	INFO



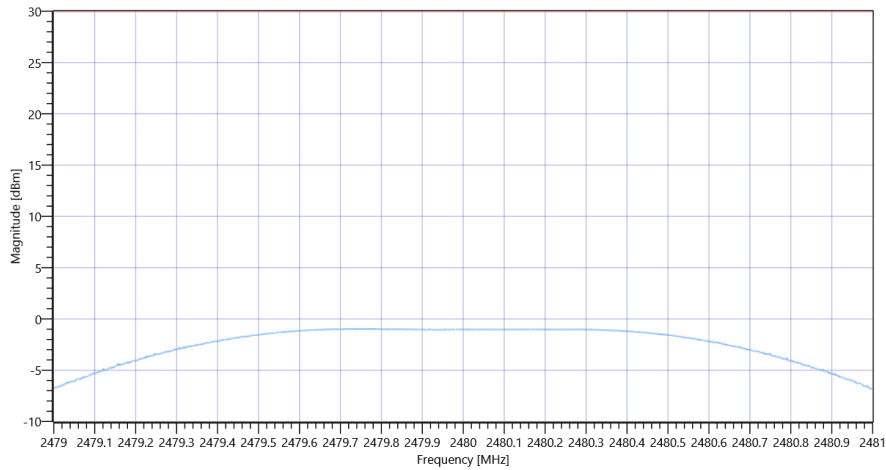
FCC 15.247 # Maximum peak conducted output power DTS ~ BT LE 1 Msps DTS BW

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	9.14 11.21 15
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

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	-0.98	dBm	PASS
Peak Power	---	1000	0.797995	mW	PASS
Frequency at Peak	---	---	2479.744	MHz	INFO



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

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

Test References

TC Start	19.12.2022 14:32:33
Ambit Temp [°C] Humidity [rel%]	26.5 21
System Version	3.3.3.0
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Bandwidth 6dB DTS - BT LE 1 Msp
Add. 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 TWO 33 2400 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]	0.5
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

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

Test Equipment

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.

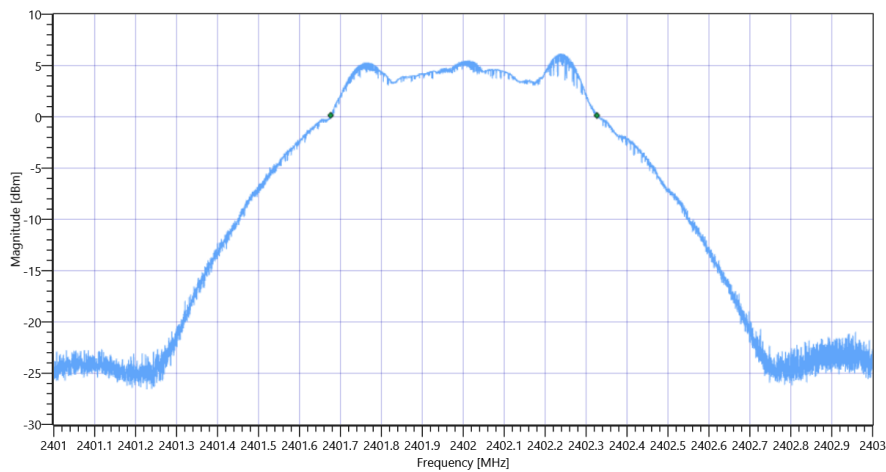
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.31	dBm	INFO
Ref. Frequency	---	---	2402.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.31 11.09 20
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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	650	kHz	PASS



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

Test at TX 2440 MHz

RESULT: Reference Power cond.

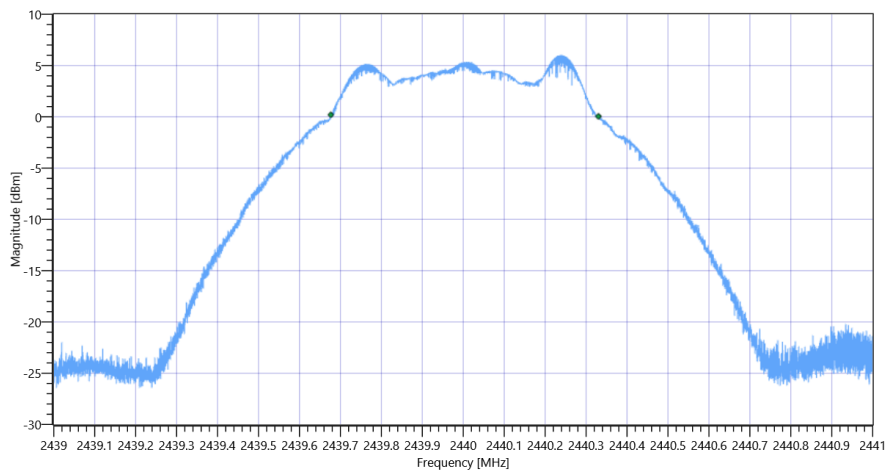
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.17	dBm	INFO
Ref. Frequency	---	---	2440.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.17 11.16 20
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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	654	kHz	PASS



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

Test at TX 2480 MHz

RESULT: Reference Power cond.

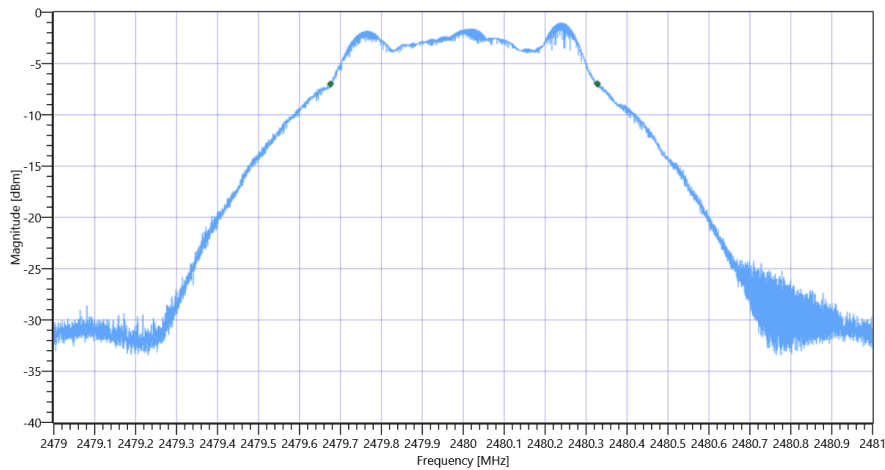
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	-0.87	dBm	INFO
Ref. Frequency	--	--	2480.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	4.13 11.21 10
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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	--	652	kHz	PASS



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

FCC 15.247 # Peak power spectral density DTS ~ BT LE 1 Msps

Test References

TC Start	19.12.2022 14:34:19
Ambit Temp [°C] Humidity [rel%]	26.5 21
System Version	3.3.3.0
Test Specification	FCC 15.247 -
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission
TC Version	0.0.1
My Description	FCC 15.247 Peak Power Spectral Density DTS - BT LE 1 Msps
Add. 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 TWO 33 2400 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]	0.5
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.

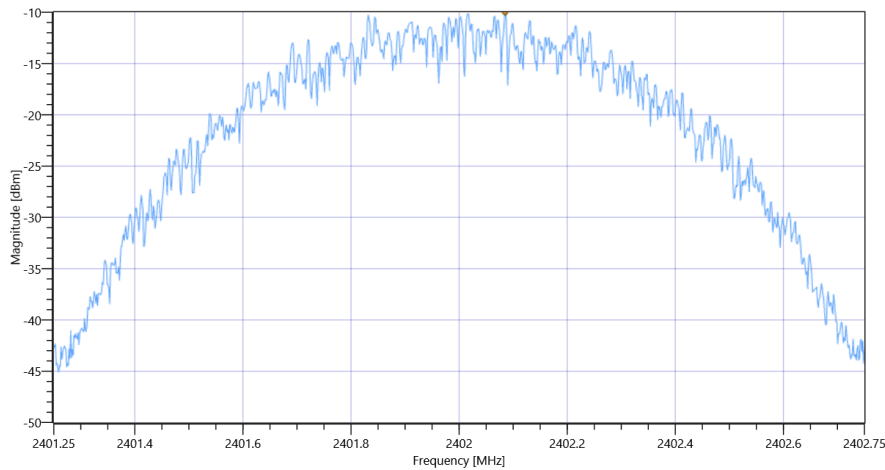
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.31	dBm	INFO
Ref. Frequency	---	---	2402.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.31 11.09 20
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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-10.02	dBm/3KHz	PASS



FCC 15.247 # Peak power spectral density DTS ~ BT LE 1 Msps

Test at TX 2440 MHz

RESULT: Reference Power cond.

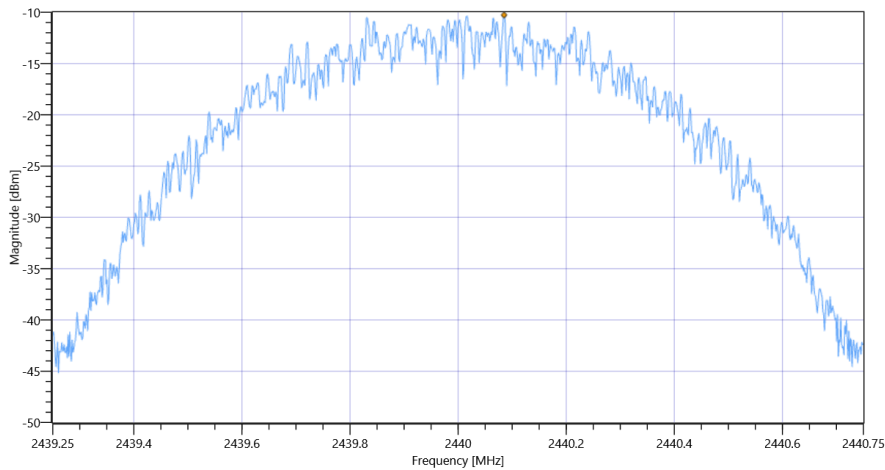
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.14	dBm	INFO
Ref. Frequency	---	---	2440.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.14 11.16 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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-10.27	dBm/3KHz	PASS



FCC 15.247 # Peak power spectral density DTS ~ BT LE 1 Msps

Test at TX 2480 MHz

RESULT: Reference Power cond.

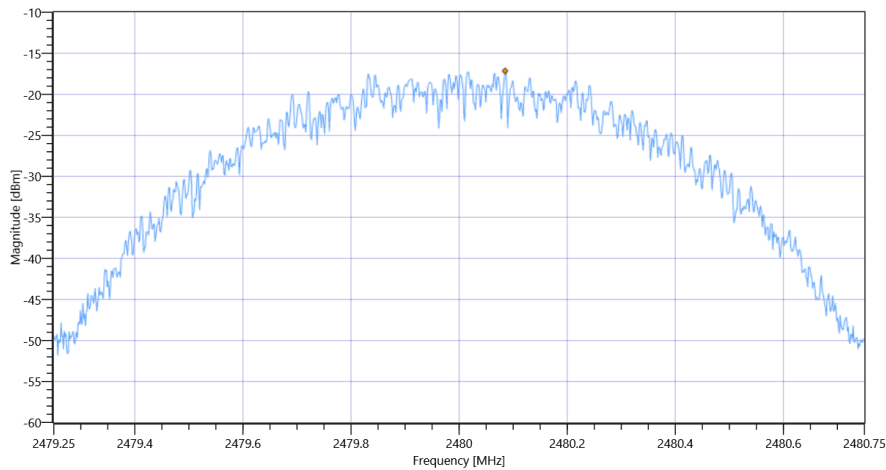
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	-0.83	dBm	INFO
Ref. Frequency	---	---	2480.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	4.17 11.21 10
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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-17.15	dBm/3KHz	PASS



FCC 15.247 # Peak power spectral density DTS ~ BT LE 1 Msps

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

Test References

TC Start	19.12.2022 14:36:32
Ambit Temp [°C] Humidity [rel%]	26.5 21
System Version	3.3.3.0
Test Specification	FCC 15.247, ISED RSS247 -
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - BT LE 1 Msps
Add. 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 TWO 33 2400 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]	0.5
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.	---	---	6.31	dBm	INFO
Ref. Frequency	---	---	2402.300	MHz	INFO

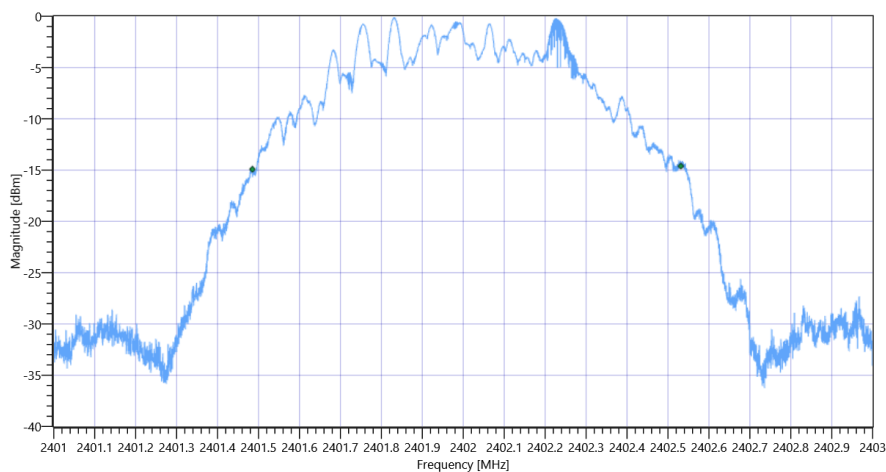
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.31 11.09 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

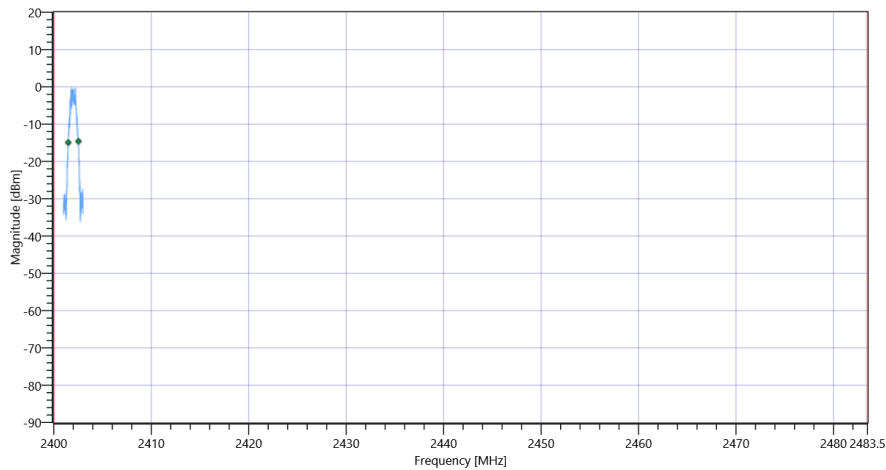
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1046.000	kHz	INFO
T1 99%	2400.000000	---	2401.4851	MHz	PASS
T2 99%	---	2483.500000	2402.5313	MHz	PASS

Plot: Bandwidth only



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

Plot: Bandwidth within Band

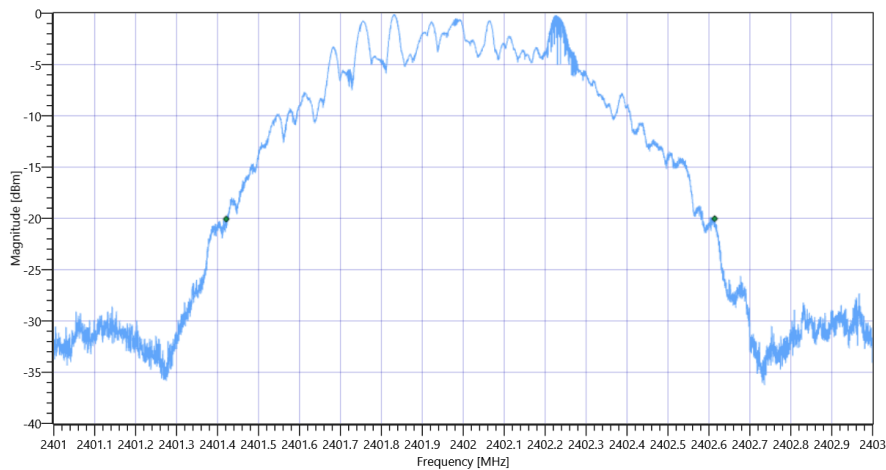


FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ BT LE 1 Msp

RESULT

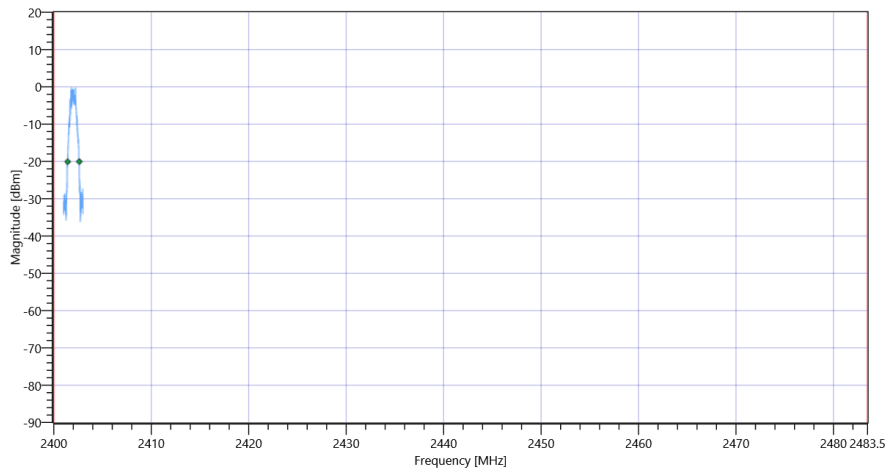
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1193	kHz	INFO
T1 20dB	2400.000000	---	2401.4210	MHz	PASS
T2 20dB	---	2483.500000	2402.6140	MHz	PASS

Plot: Bandwidth only



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

Plot: Bandwidth within Band



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

Test at TX 2440 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.17	dBm	INFO
Ref. Frequency	---	---	2440.300	MHz	INFO

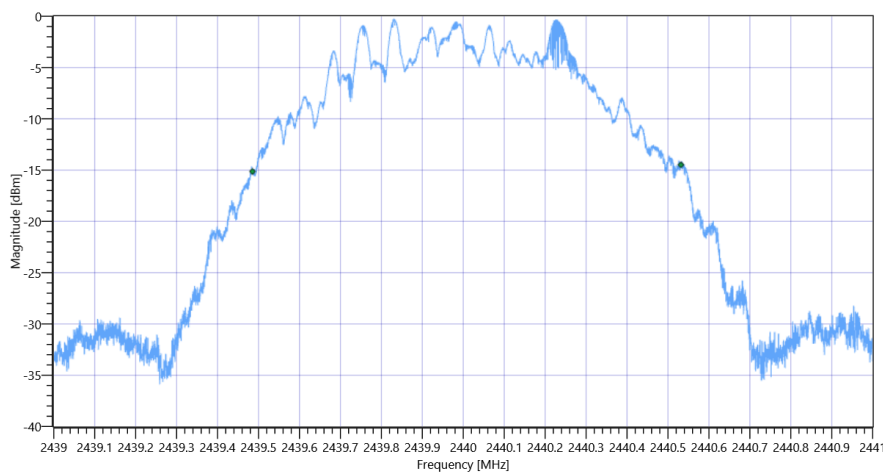
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.17 11.16 20
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

RESULT

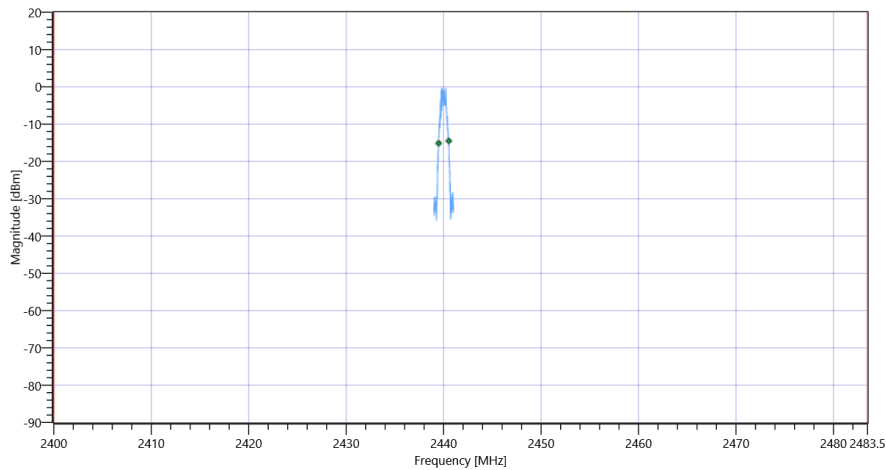
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1046.000	kHz	INFO
T1 99%	2400.000000	---	2439.4853	MHz	PASS
T2 99%	---	2483.500000	2440.5315	MHz	PASS

Plot: Bandwidth only



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

Plot: Bandwidth within Band

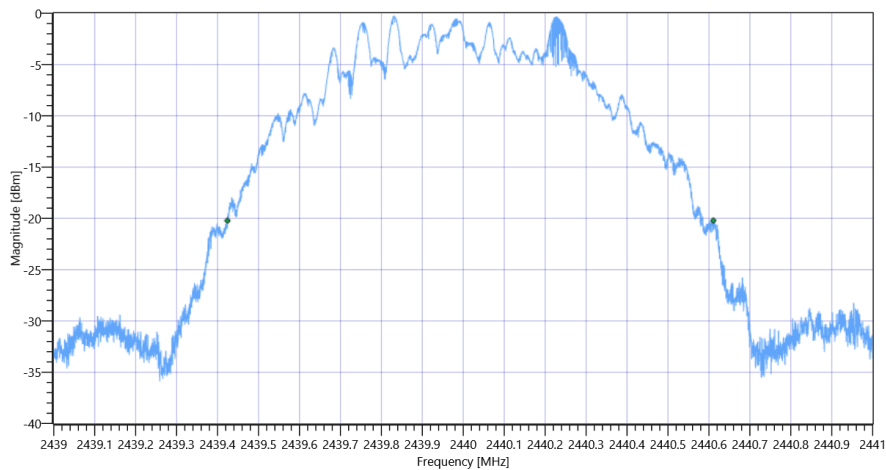


FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ BT LE 1 MspS

RESULT

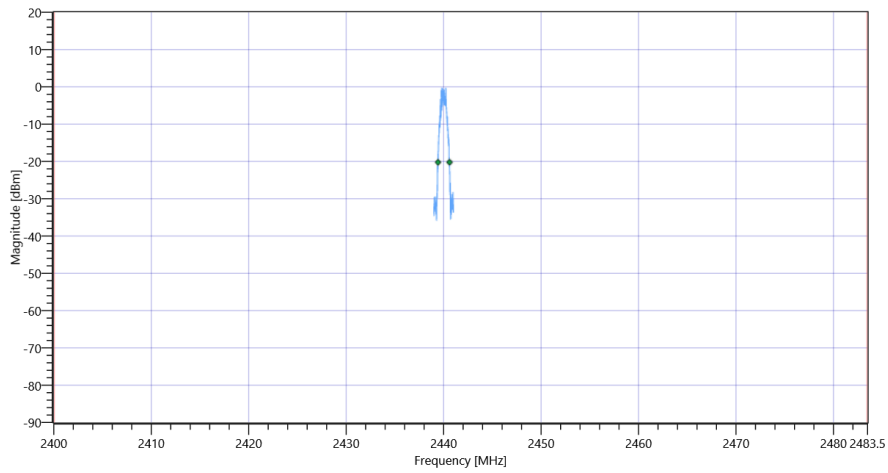
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1187	kHz	INFO
T1 20dB	2400.000000	---	2439.4240	MHz	PASS
T2 20dB	---	2483.500000	2440.6108	MHz	PASS

Plot: Bandwidth only



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

Plot: Bandwidth within Band



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

Test at TX 2480 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	-0.88	dBm	INFO
Ref. Frequency	---	---	2480.200	MHz	INFO

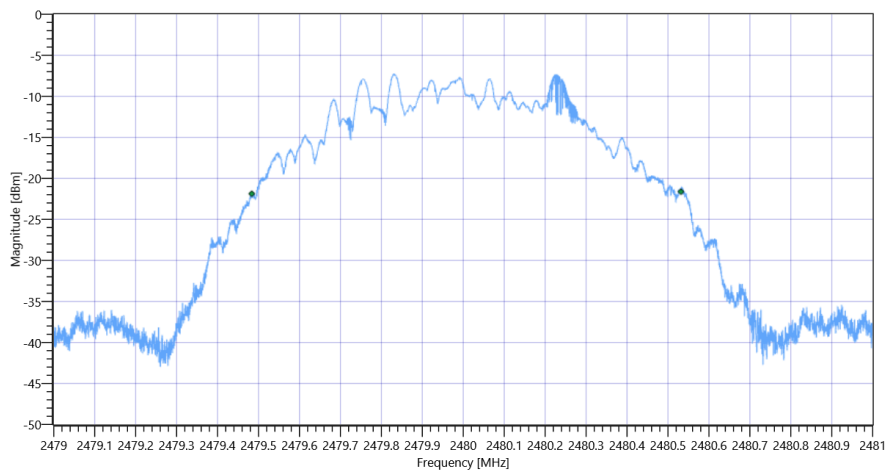
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	4.12 11.21 10
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

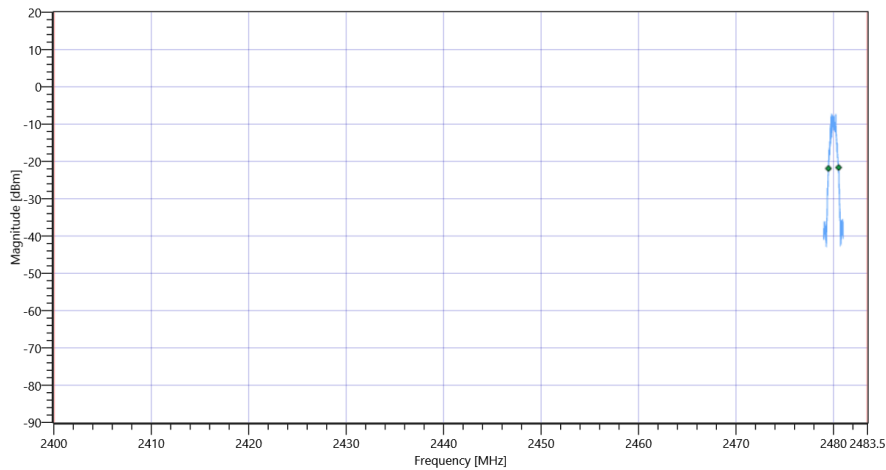
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1048.000	kHz	INFO
T1 99%	2400.000000	---	2479.4835	MHz	PASS
T2 99%	---	2483.500000	2480.5315	MHz	PASS

Plot: Bandwidth only



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

Plot: Bandwidth within Band

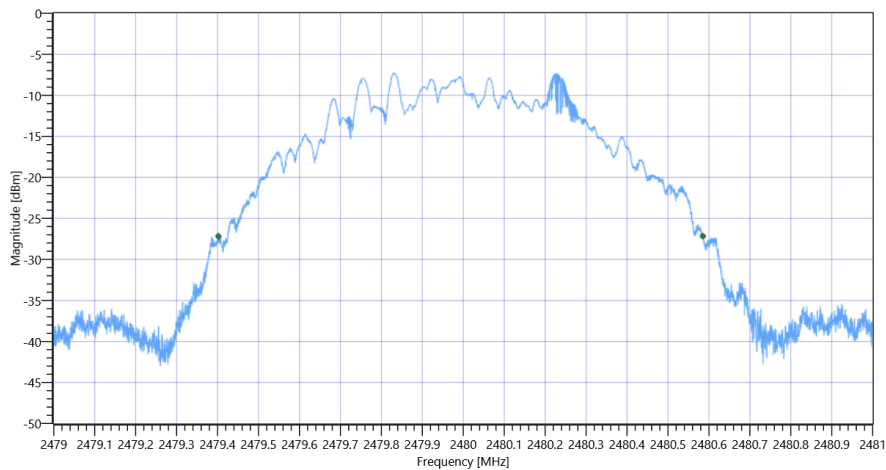


FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ BT LE 1 Msps

RESULT

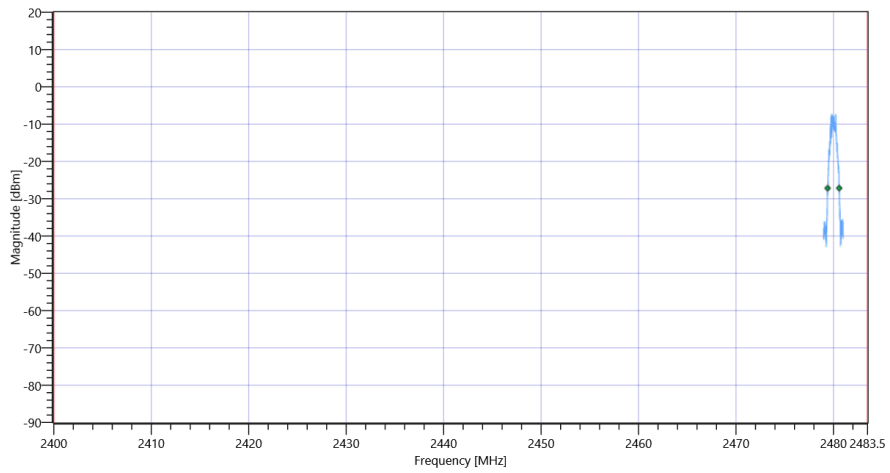
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1183	kHz	INFO
T1 20dB	2400.000000	---	2479.4018	MHz	PASS
T2 20dB	---	2483.500000	2480.5852	MHz	PASS

Plot: Bandwidth only



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

Plot: Bandwidth within Band



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

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

Test References

TC Start	19.12.2022 14:39:29
Ambit Temp [°C] Humidity [rel%]	26.5 21
System Version	3.3.3.0
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 DTS - BT LE 1 Msps
Add. 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 TWO 33 2400 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]	0.5
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.

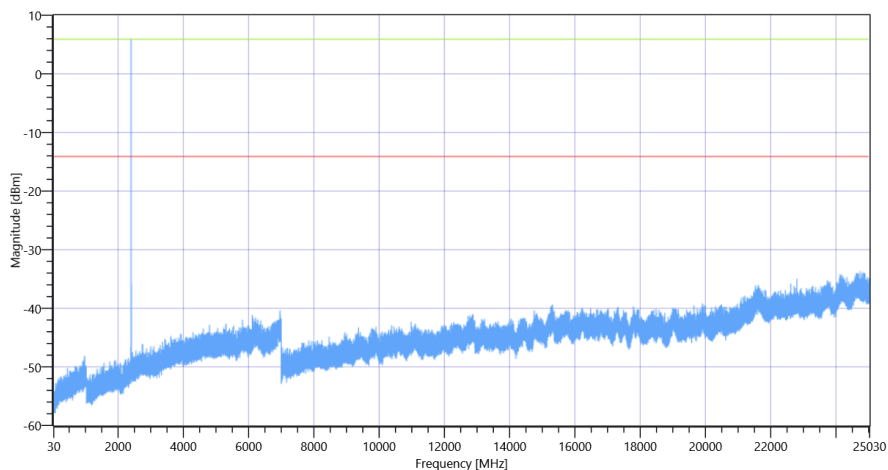
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.32	dBm	INFO
Ref. Frequency	---	---	2402.200	MHz	INFO

READ SA SETTINGS:

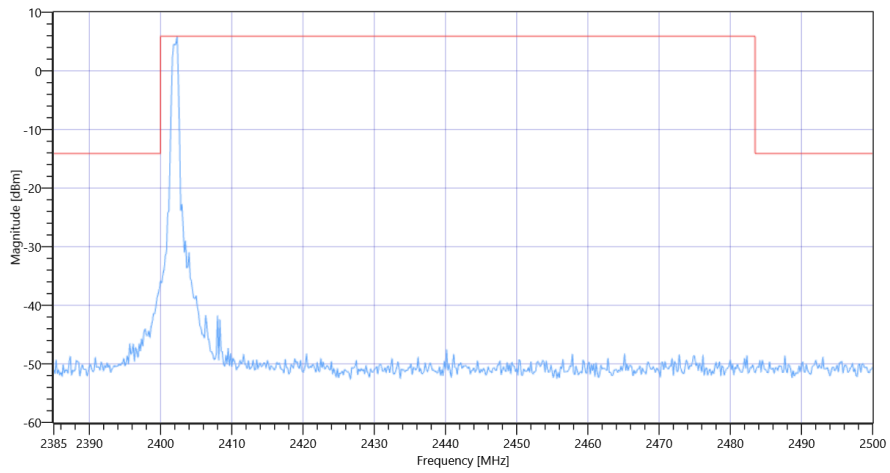
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	6.32 0 25
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	200 25 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2402.33 MHz	---	---	5.88	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 24743 MHz	0	---	19.56	dB	INFO



FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 1 Msps 2402



FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 1 Msps 2402

Test at TX 2440 MHz

RESULT: Reference Power cond.

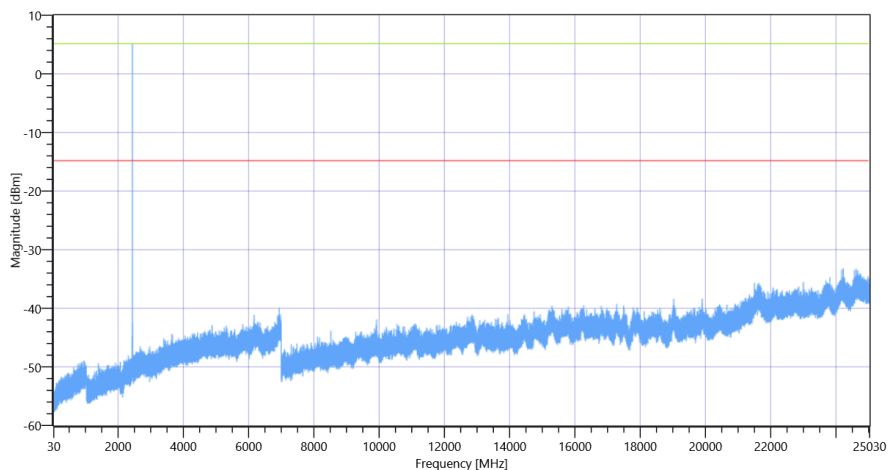
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	6.16	dBm	INFO
Ref. Frequency	--	--	2440.300	MHz	INFO

READ SA SETTINGS:

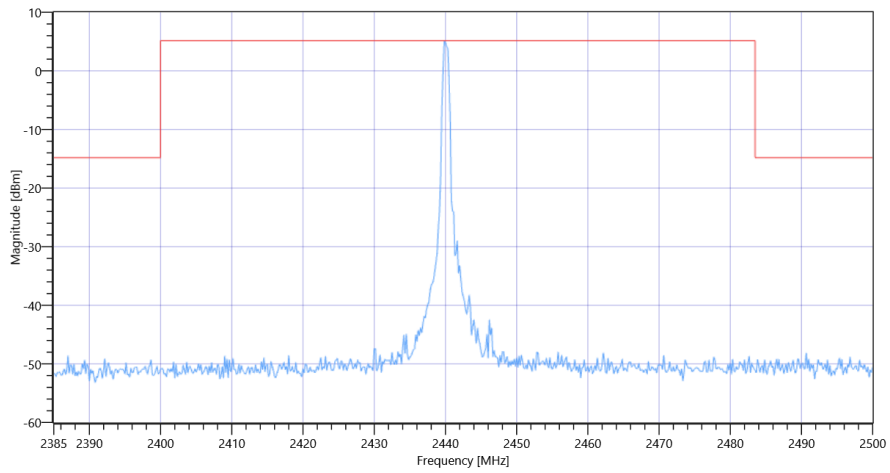
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	6.16 0 25
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	200 25 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2439.83 MHz	--	--	5.16	dBm	INFO
No peaks detected	--	--			PASS
Lowest margin to limit 24220.667 MHz	0	--	18.3	dB	INFO



FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 1 Msps 2440



FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 1 Msps 2440

Test at TX 2480 MHz

RESULT: Reference Power cond.

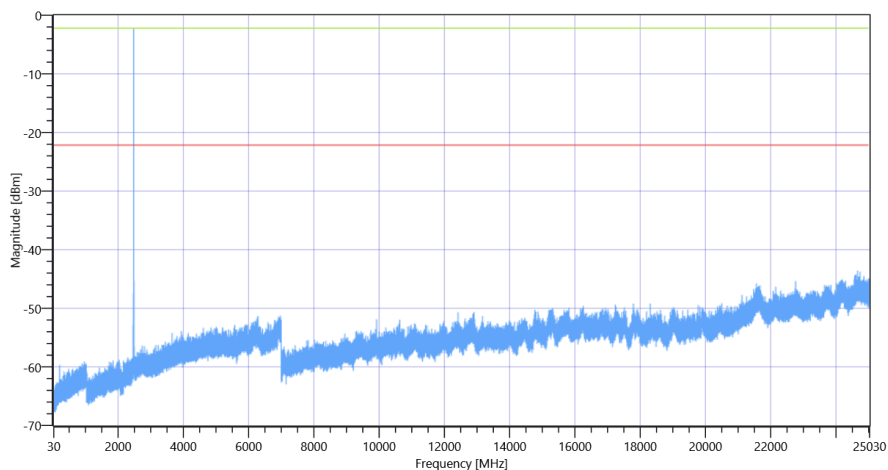
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	-0.85	dBm	INFO
Ref. Frequency	---	---	2480.300	MHz	INFO

READ SA SETTINGS:

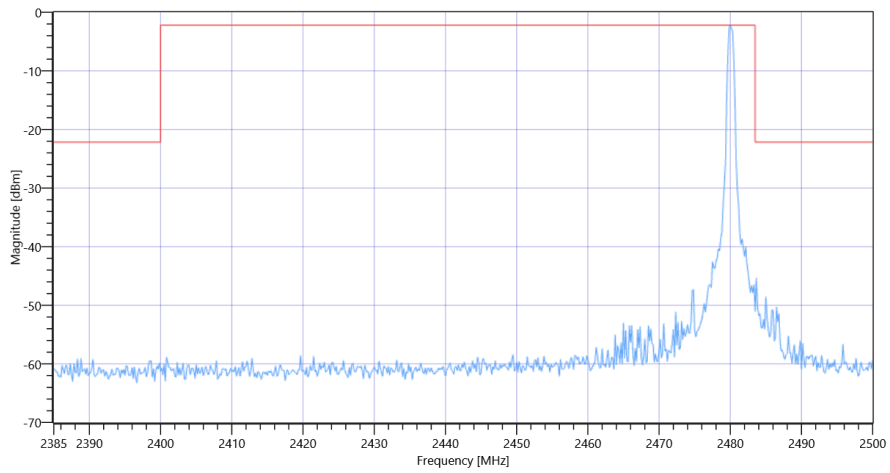
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-0.85 0 15
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	200 25 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2480.00 MHz	---	---	-2.19	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 24657.167 MHz	0	---	21.37	dB	INFO



FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 1 Msps 2480



FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 1 Msps 2480

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

Test References

TC Start	19.12.2022 15:03:04
Ambit Temp [°C] Humidity [rel%]	26.6 21
System Version	3.3.3.0
Test Specification	FCC 15.247 -
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.1 RBW ≥ DTS Bandwidth
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Conducted DTS - BT LE 2 Msps
Add. 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 TWO 33 2400 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]	0.5
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 2404 MHz

RESULT: Reference Power cond.

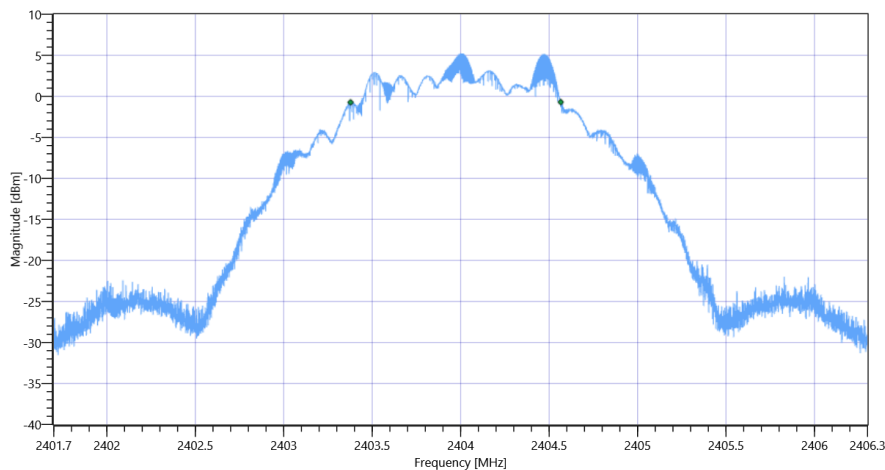
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.41	dBm	INFO
Ref. Frequency	---	---	2404.500	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.41 11.1 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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	1188	kHz	INFO



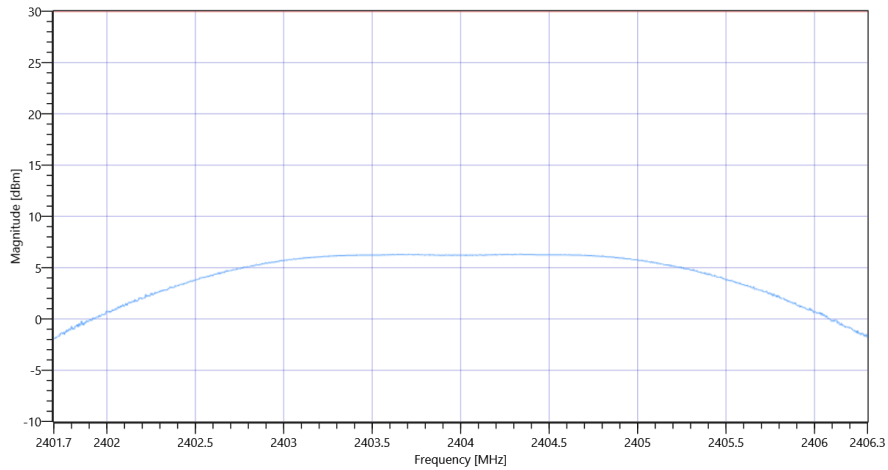
FCC 15.247 # Maximum peak conducted output power DTS ~ BT LE 2 Msps DTS BW

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.41 11.1 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

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	6.3	dBm	PASS
Peak Power	---	1000	4.265795	mW	PASS
Frequency at Peak	---	---	2404.331	MHz	INFO



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

Test at TX 2440 MHz

RESULT: Reference Power cond.

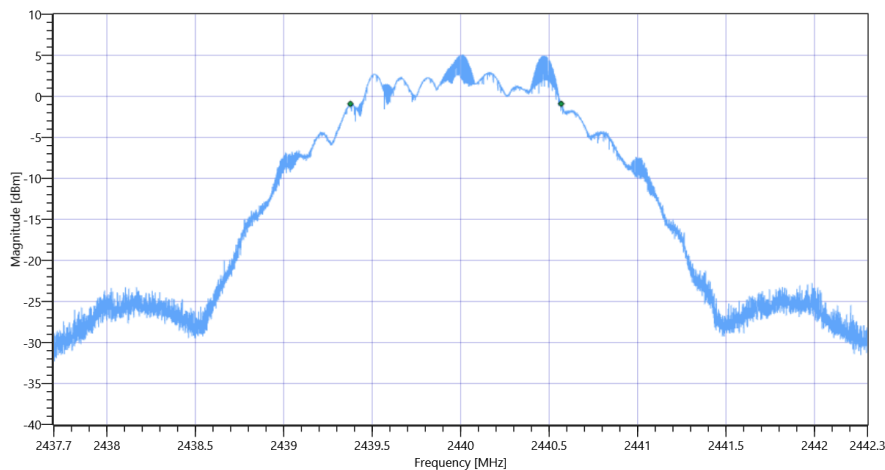
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.17	dBm	INFO
Ref. Frequency	---	---	2440.500	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.17 11.16 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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	1191	kHz	INFO



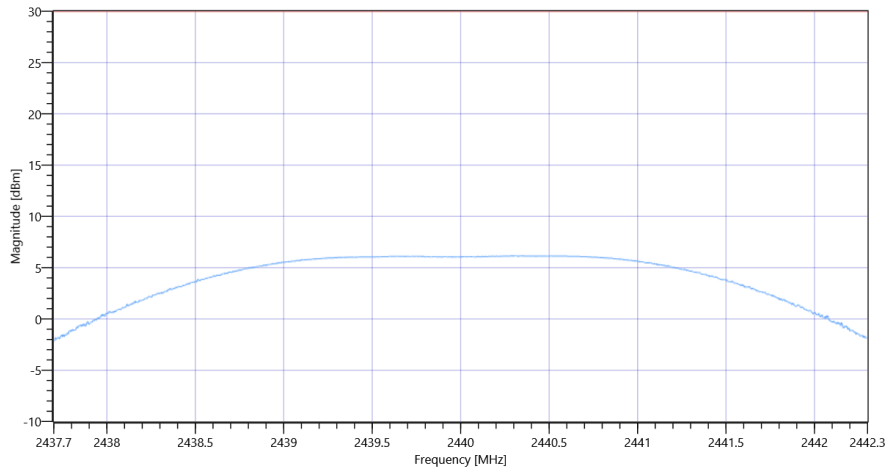
FCC 15.247 # Maximum peak conducted output power DTS ~ BT LE 2 Msps DTS BW

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.17 11.16 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

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	6.15	dBm	PASS
Peak Power	---	1000	4.120975	mW	PASS
Frequency at Peak	---	---	2440.29	MHz	INFO



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

Test at TX 2478 MHz

RESULT: Reference Power cond.

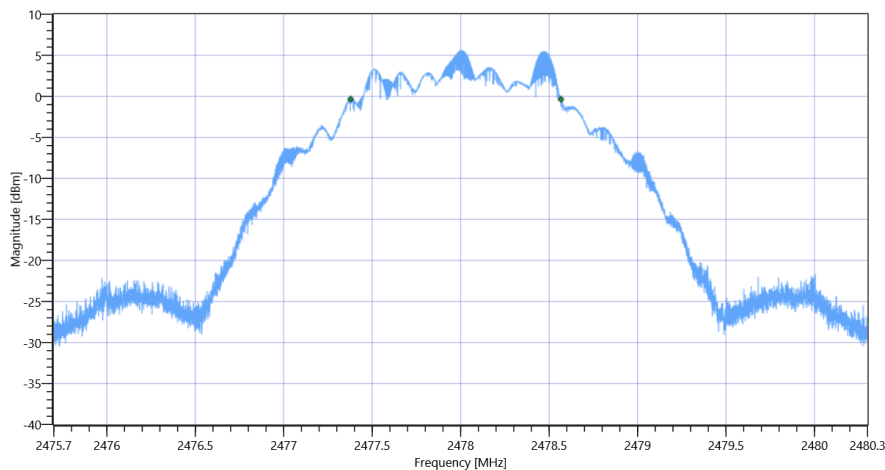
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.75	dBm	INFO
Ref. Frequency	---	---	2478.500	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.75 11.2 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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	---	---	1189	kHz	INFO



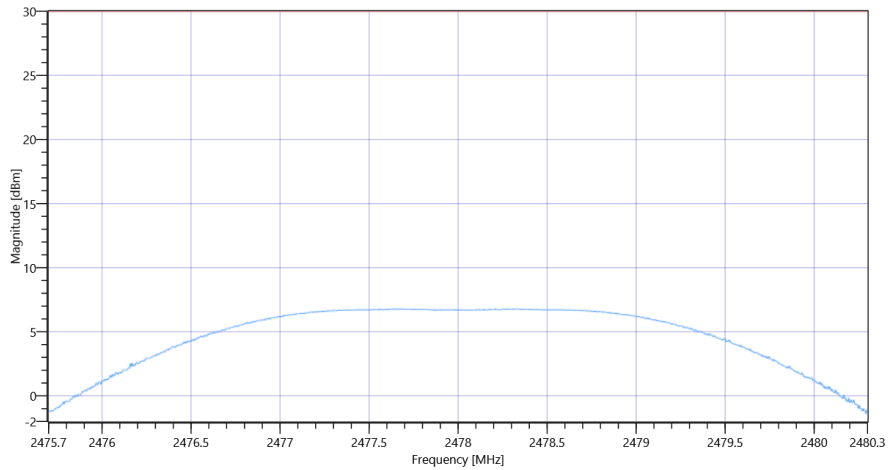
FCC 15.247 # Maximum peak conducted output power DTS ~ BT LE 2 Msps DTS BW

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.75 11.2 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

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	30.00	6.78	dBm	PASS
Peak Power	---	1000	4.76431	mW	PASS
Frequency at Peak	---	---	2477.692	MHz	INFO



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

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

Test References

TC Start	19.12.2022 15:05:45
Ambit Temp [°C] Humidity [rel%]	26.7 21
System Version	3.3.3.0
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Bandwidth 6dB DTS - BT LE 2 Msp
Add. 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 TWO 33 2400 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]	0.5
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

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

Test Equipment

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

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

Test at TX 2404 MHz

RESULT: Reference Power cond.

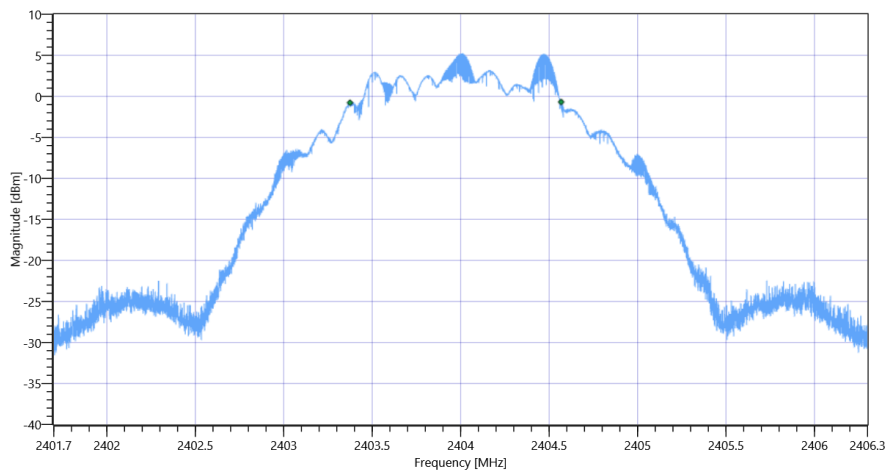
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.40	dBm	INFO
Ref. Frequency	---	---	2404.500	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.40 11.1 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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	1194	kHz	PASS



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

Test at TX 2440 MHz

RESULT: Reference Power cond.

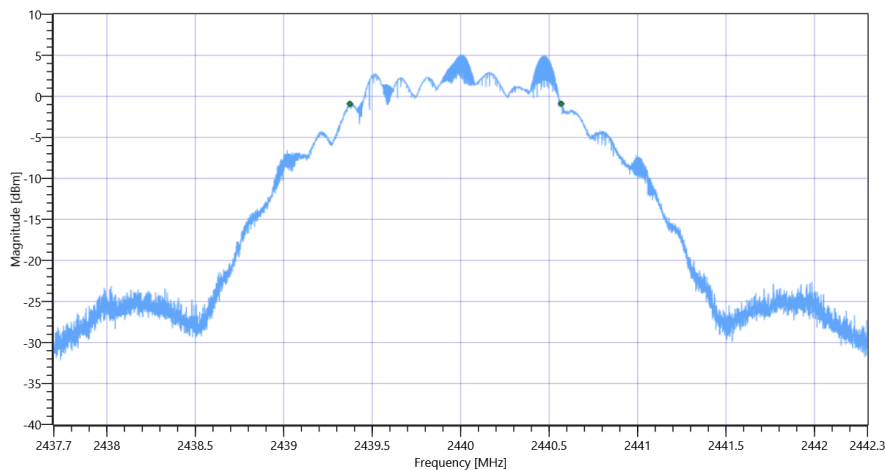
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.22	dBm	INFO
Ref. Frequency	---	---	2440.500	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.22 11.16 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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	1195	kHz	PASS



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

Test at TX 2478 MHz

RESULT: Reference Power cond.

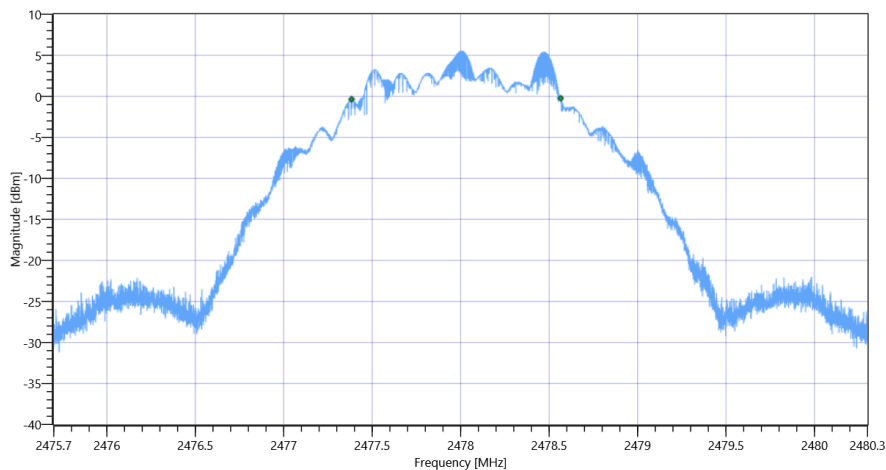
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.79	dBm	INFO
Ref. Frequency	---	---	2478.500	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.79 11.2 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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	1182	kHz	PASS



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

FCC 15.247 # Peak power spectral density DTS ~ BT LE 2 Msps

Test References

TC Start	19.12.2022 15:07:31
Ambit Temp [°C] Humidity [rel%]	26.7 21
System Version	3.3.3.0
Test Specification	FCC 15.247 -
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission
TC Version	0.0.1
My Description	FCC 15.247 Peak Power Spectral Density DTS - BT LE 2 Msps
Add. 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 TWO 33 2400 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]	0.5
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 2404 MHz

RESULT: Reference Power cond.

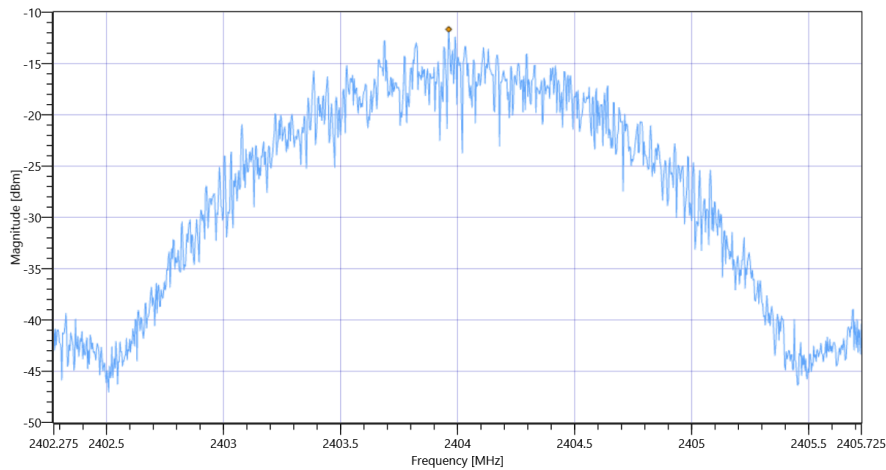
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.43	dBm	INFO
Ref. Frequency	---	---	2404.500	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.43 11.1 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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-11.66	dBm/3KHz	PASS



FCC 15.247 # Peak power spectral density DTS ~ BT LE 2 Msps

Test at TX 2440 MHz

RESULT: Reference Power cond.

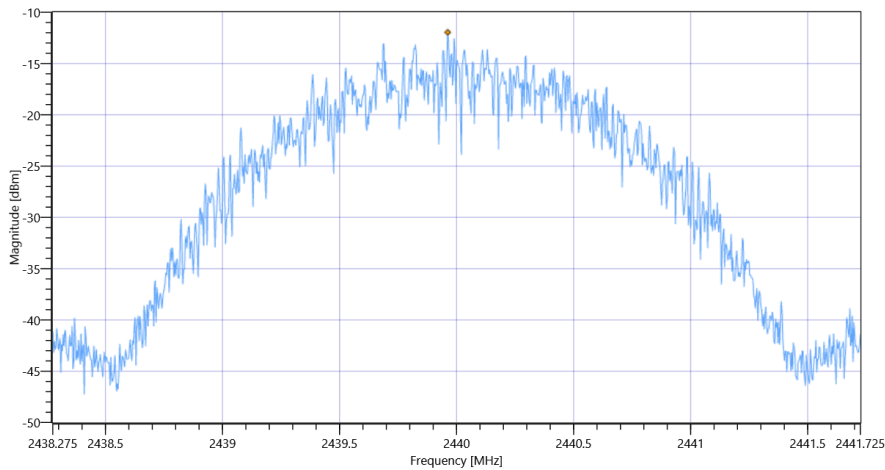
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.22	dBm	INFO
Ref. Frequency	---	---	2440.500	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.22 11.16 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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-11.95	dBm/3KHz	PASS



FCC 15.247 # Peak power spectral density DTS ~ BT LE 2 Msps

Test at TX 2478 MHz

RESULT: Reference Power cond.

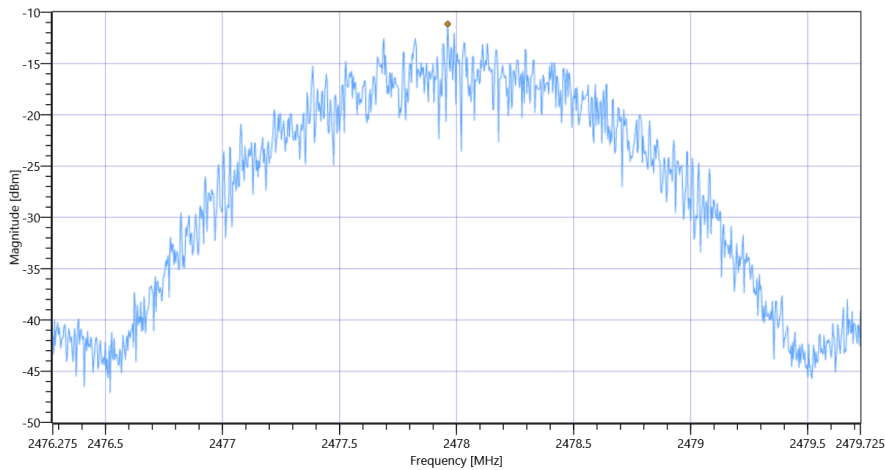
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.73	dBm	INFO
Ref. Frequency	---	---	2478.500	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.73 11.2 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

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-11.14	dBm/3KHz	PASS



FCC 15.247 # Peak power spectral density DTS ~ BT LE 2 Msps

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

Test References

TC Start	19.12.2022 15:09:46
Ambit Temp [°C] Humidity [rel%]	26.7 21
System Version	3.3.3.0
Test Specification	FCC 15.247, ISED RSS247 -
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - BT LE 2 Msps
Add. 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 TWO 33 2400 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]	0.5
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 2404 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.44	dBm	INFO
Ref. Frequency	---	---	2404.500	MHz	INFO

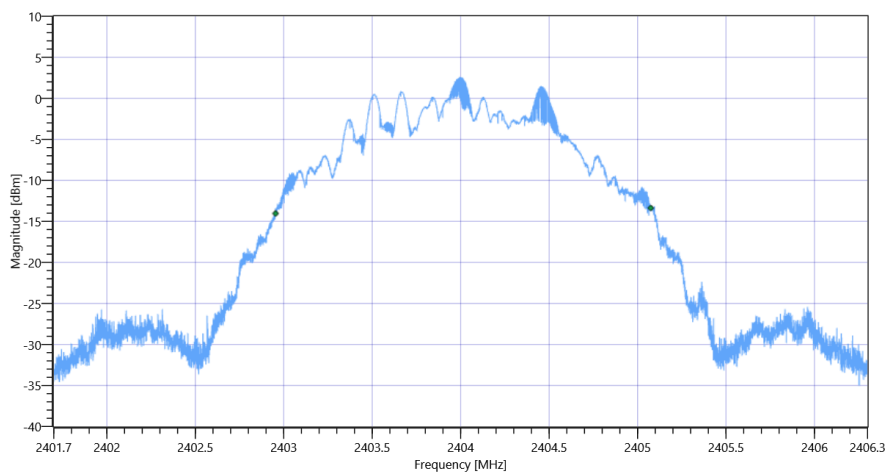
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.44 11.1 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

RESULT

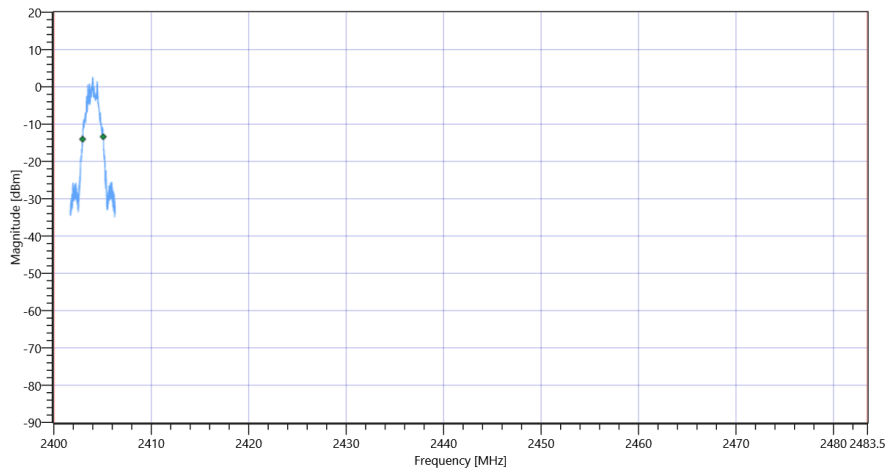
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	2121.000	kHz	INFO
T1 99%	2400.000000	---	2402.9536	MHz	PASS
T2 99%	---	2483.500000	2405.0745	MHz	PASS

Plot: Bandwidth only



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

Plot: Bandwidth within Band

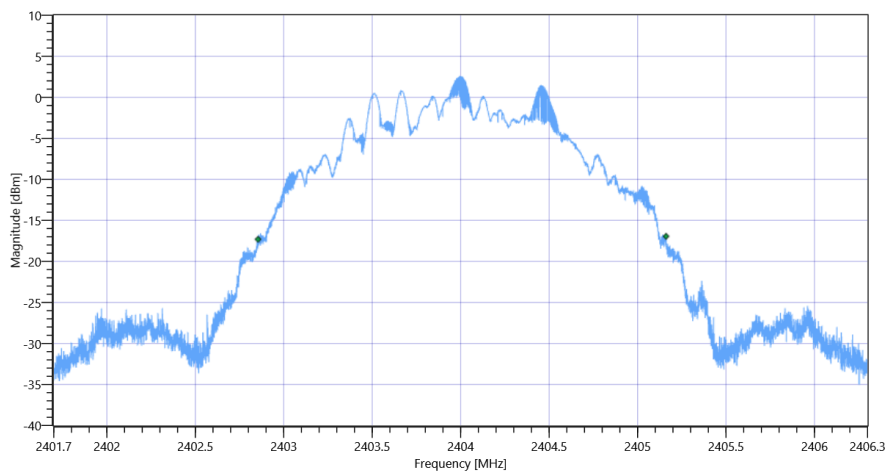


FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ BT LE 2 Msp

RESULT

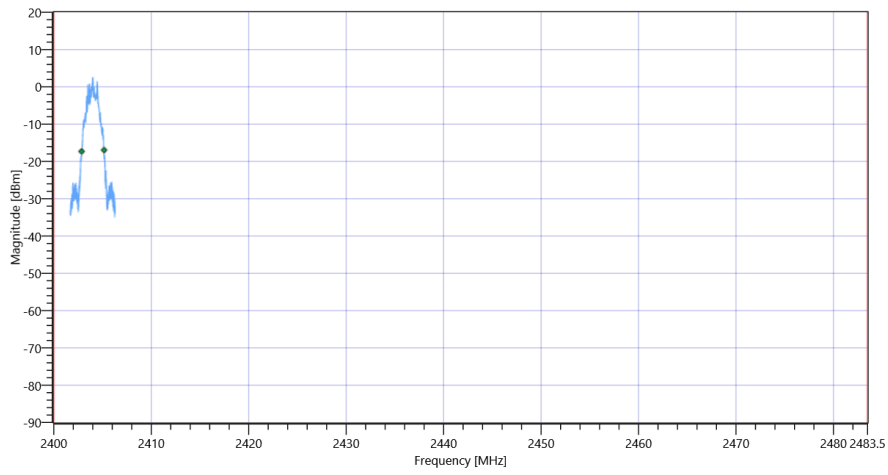
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	2306	kHz	INFO
T1 20dB	2400.000000	---	2402.8546	MHz	PASS
T2 20dB	---	2483.500000	2405.1610	MHz	PASS

Plot: Bandwidth only



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

Plot: Bandwidth within Band



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

Test at TX 2440 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.21	dBm	INFO
Ref. Frequency	---	---	2440.500	MHz	INFO

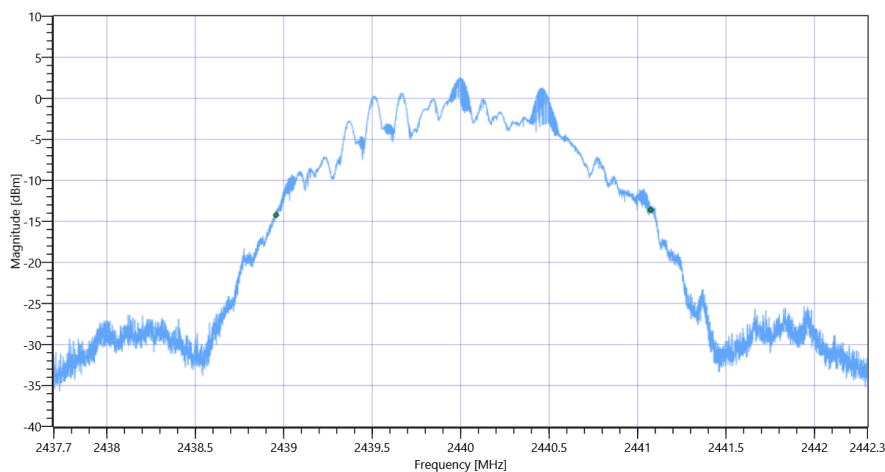
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.21 11.16 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

RESULT

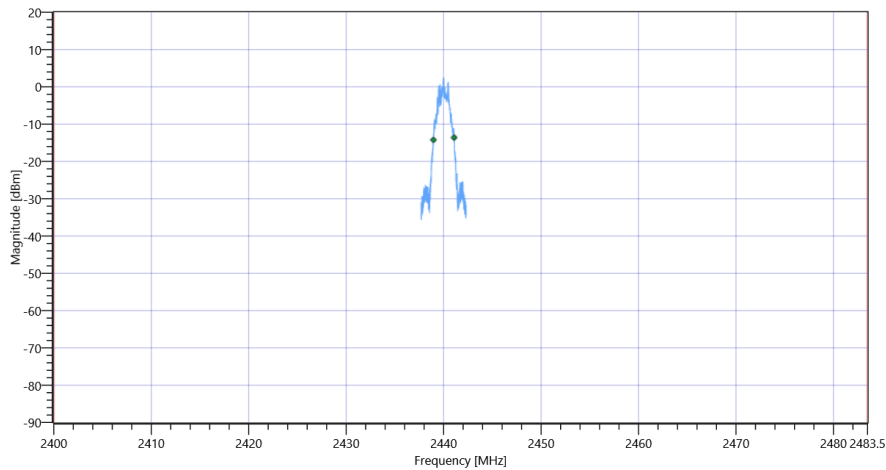
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	2118.000	kHz	INFO
T1 99%	2400.000000	---	2438.9564	MHz	PASS
T2 99%	---	2483.500000	2441.0740	MHz	PASS

Plot: Bandwidth only



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

Plot: Bandwidth within Band

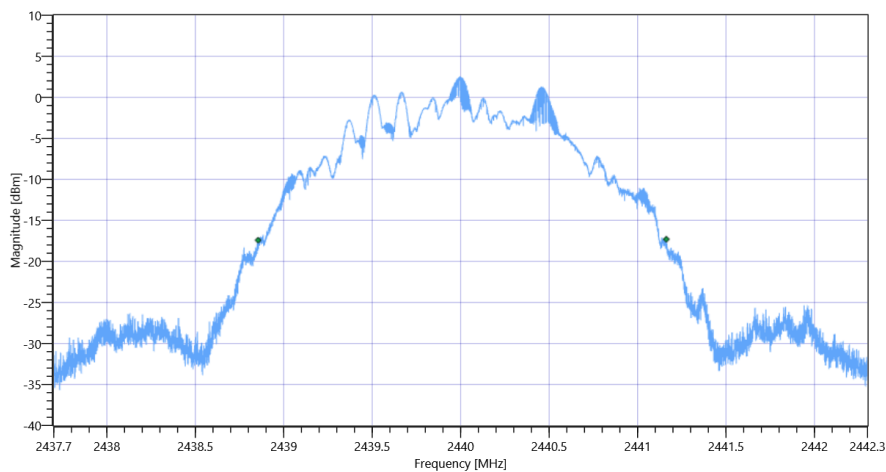


FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ BT LE 2 MspS

RESULT

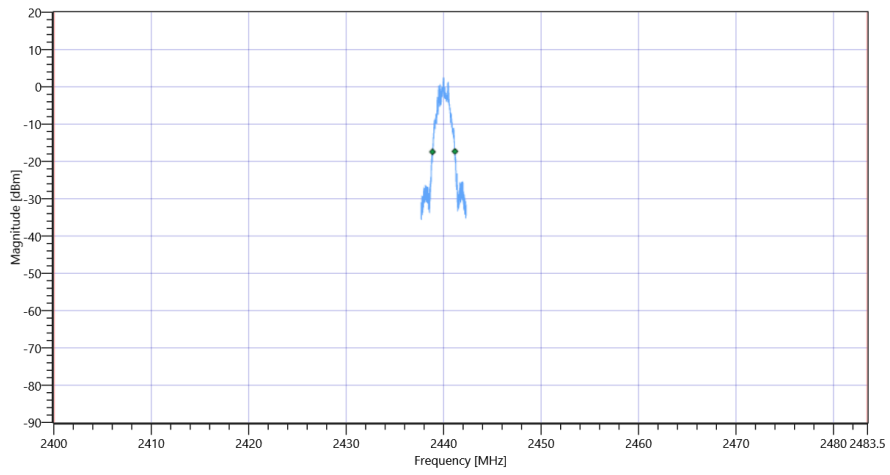
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	2307	kHz	INFO
T1 20dB	2400.000000	---	2438.8551	MHz	PASS
T2 20dB	---	2483.500000	2441.1624	MHz	PASS

Plot: Bandwidth only



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

Plot: Bandwidth within Band



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

Test at TX 2478 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.77	dBm	INFO
Ref. Frequency	---	---	2478.500	MHz	INFO

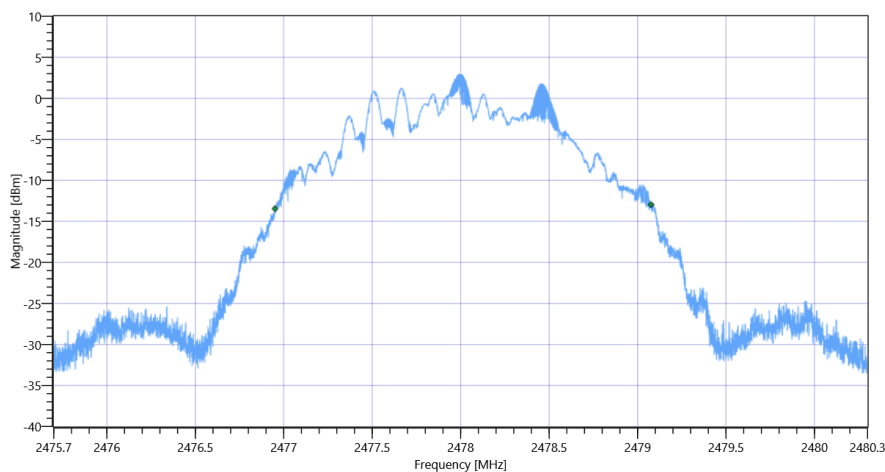
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.77 11.2 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

RESULT

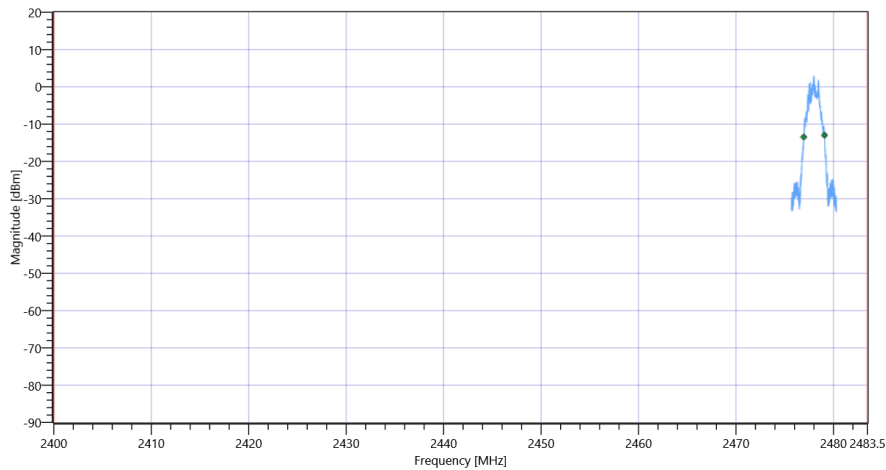
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	2125.000	kHz	INFO
T1 99%	2400.000000	---	2476.9504	MHz	PASS
T2 99%	---	2483.500000	2479.0758	MHz	PASS

Plot: Bandwidth only



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

Plot: Bandwidth within Band

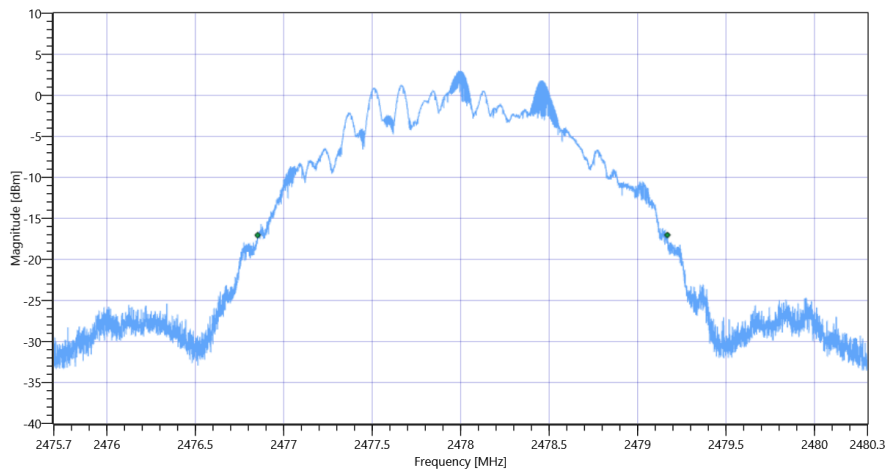


FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ BT LE 2 Msps

RESULT

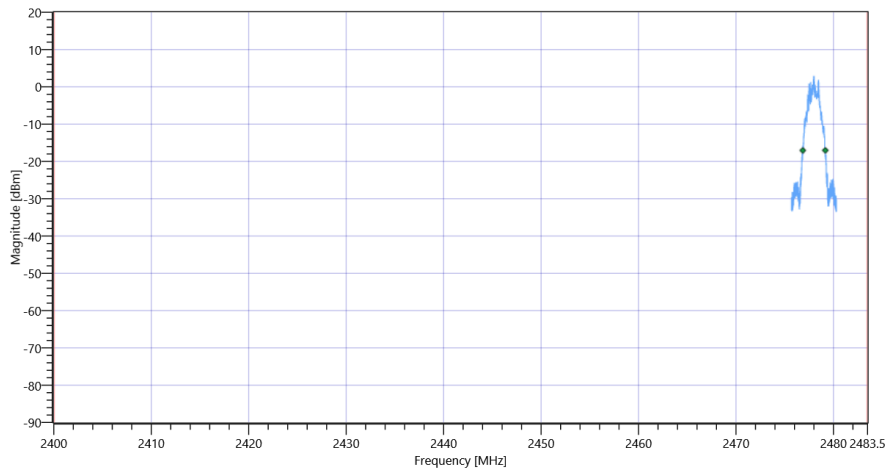
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	2316	kHz	INFO
T1 20dB	2400.000000	---	2476.8523	MHz	PASS
T2 20dB	---	2483.500000	2479.1684	MHz	PASS

Plot: Bandwidth only



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

Plot: Bandwidth within Band



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

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

Test References

TC Start	19.12.2022 15:12:45
Ambit Temp [°C] Humidity [rel%]	26.7 21
System Version	3.3.3.0
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 DTS - BT LE 2 Msps
Add. 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 TWO 33 2400 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]	0.5
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 2404 MHz

RESULT: Reference Power cond.

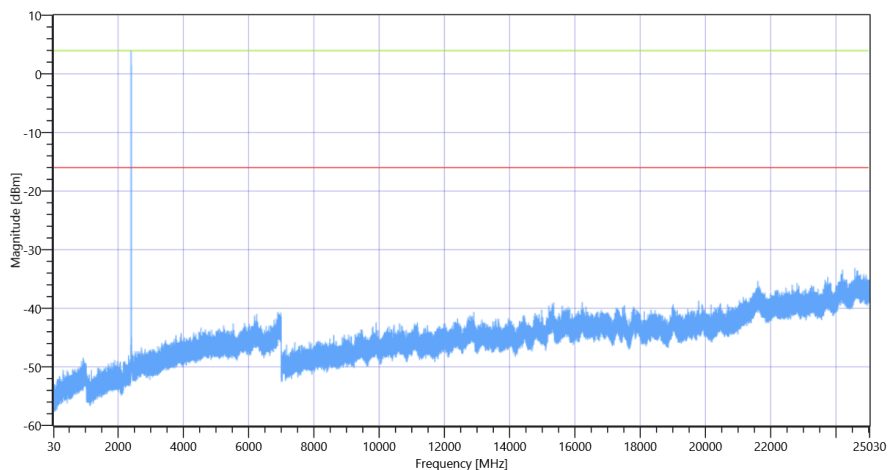
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.40	dBm	INFO
Ref. Frequency	---	---	2404.500	MHz	INFO

READ SA SETTINGS:

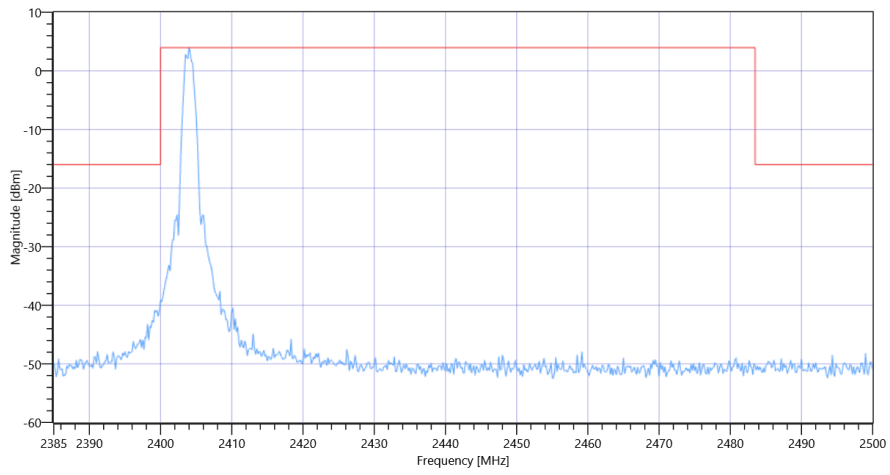
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	6.40 0 25
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	200 25 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2404.00 MHz	---	---	3.98	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 30 MHz	0	---	-145.5	dB	INFO



FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 2 Msps 2404



FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 2 MspS 2404

Test at TX 2440 MHz

RESULT: Reference Power cond.

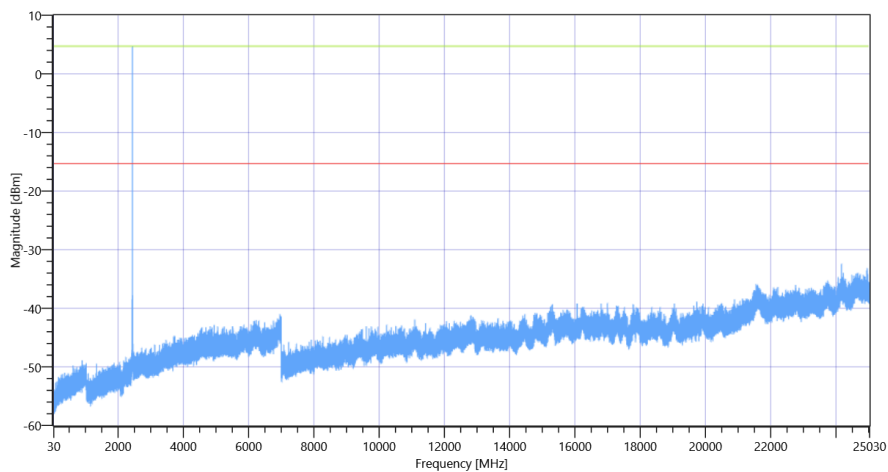
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.25	dBm	INFO
Ref. Frequency	---	---	2440.500	MHz	INFO

READ SA SETTINGS:

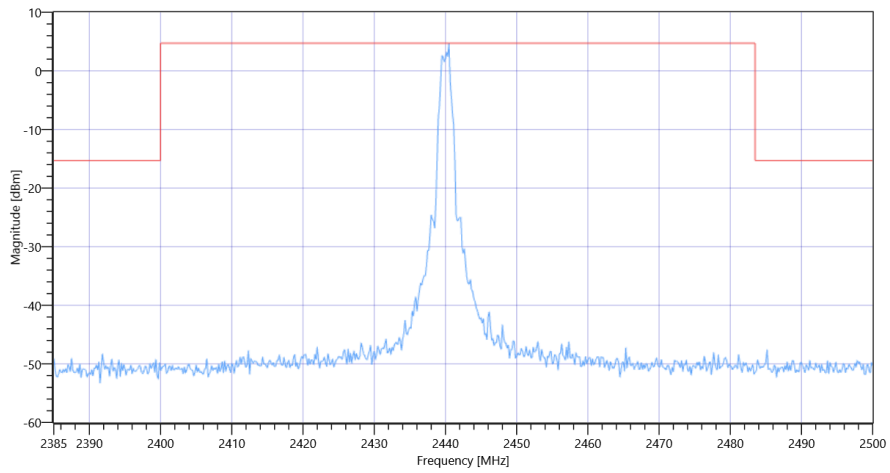
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	6.25 0 25
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	200 25 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2440.50 MHz	---	---	4.72	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 30 MHz	0	---	-144.89	dB	INFO



FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 2 Msps 2440



FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 2 Msps 2440

Test at TX 2478 MHz

RESULT: Reference Power cond.

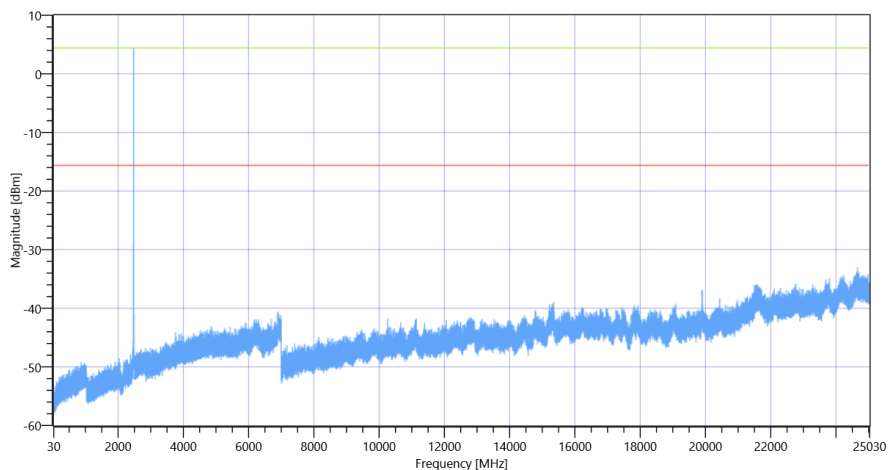
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	--	--	6.77	dBm	INFO
Ref. Frequency	--	--	2478.500	MHz	INFO

READ SA SETTINGS:

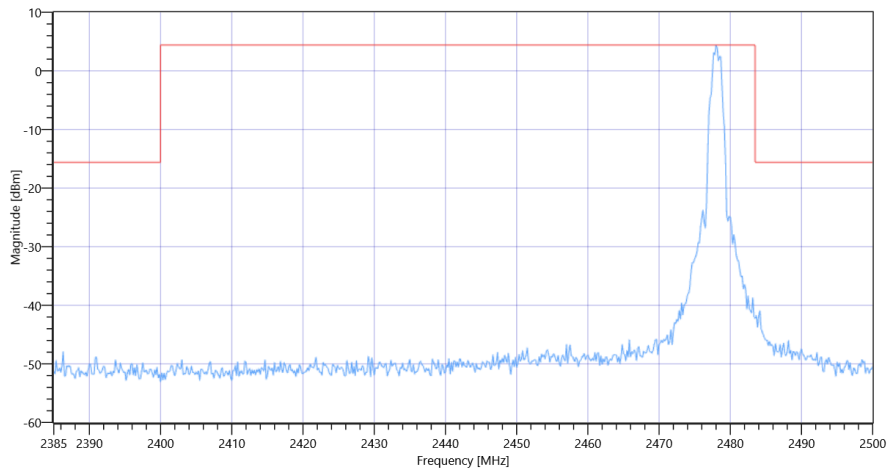
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	6.77 0 25
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	200 25 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2478.00 MHz	--	--	4.40	dBm	INFO
No peaks detected	--	--			PASS
Lowest margin to limit 24657 MHz	0	--	17.4	dB	INFO



FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 2 Msps 2478



FCC 15.247 # TX spurious conducted 20dBc ~ BT LE 2 Msps 2478

Common 2G4 # Peak output power 3MHz/3MHz ~ BT LE 1 Msps

Test References

TC Start	19.12.2022 13:22:31
Ambit Temp [°C] Humidity [rel%]	26.4 22
System Version	3.3.3.0
Test Specification	Common 2G4 - none
Test Method	
TC Version	0.0.1
My Description	Peak Output Power conducted 3MHz/3MHz - BT LE 1 Msps
Add. 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 TWO 33 2400 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]	0.5
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

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

Test Equipment

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.

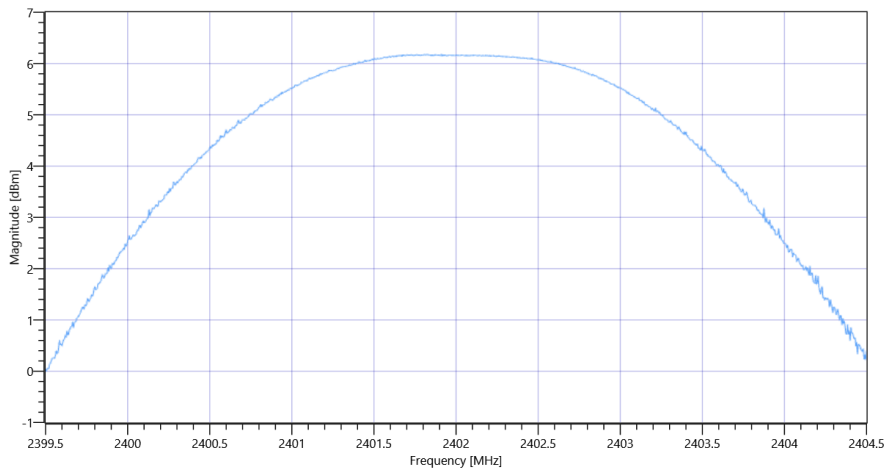
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.25	dBm	INFO
Ref. Frequency	---	---	2402.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.25 11.09 25
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

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	---	6.18	dBm	INFO
Peak Power	---	---	4.14954	mW	INFO
Frequency at Peak	---	---	2401.91	MHz	INFO



Common 2G4 # Peak output power 3MHz-3MHz ~ BT LE 1 Msps

Test at TX 2440 MHz

RESULT: Reference Power cond.

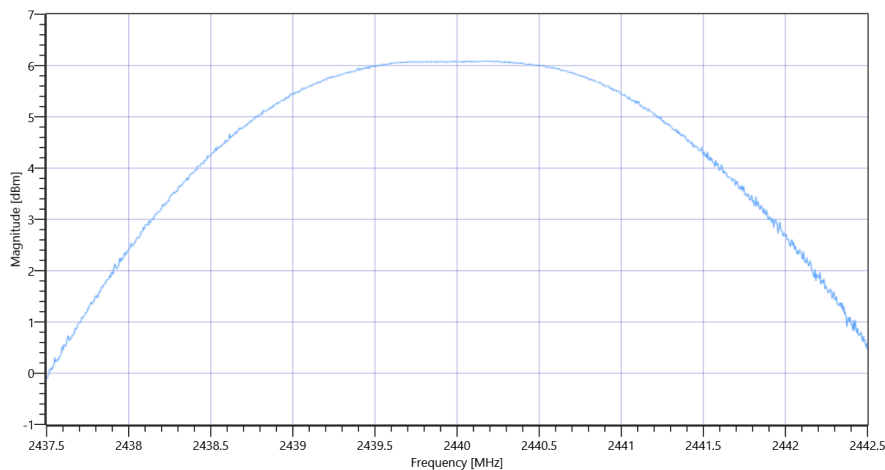
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	6.11	dBm	INFO
Ref. Frequency	---	---	2440.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.11 11.16 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

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	---	6.09	dBm	INFO
Peak Power	---	---	4.064433	mW	INFO
Frequency at Peak	---	---	2440.185	MHz	INFO



Common 2G4 # Peak output power 3MHz-3MHz ~ BT LE 1 Msps

Test at TX 2480 MHz

RESULT: Reference Power cond.

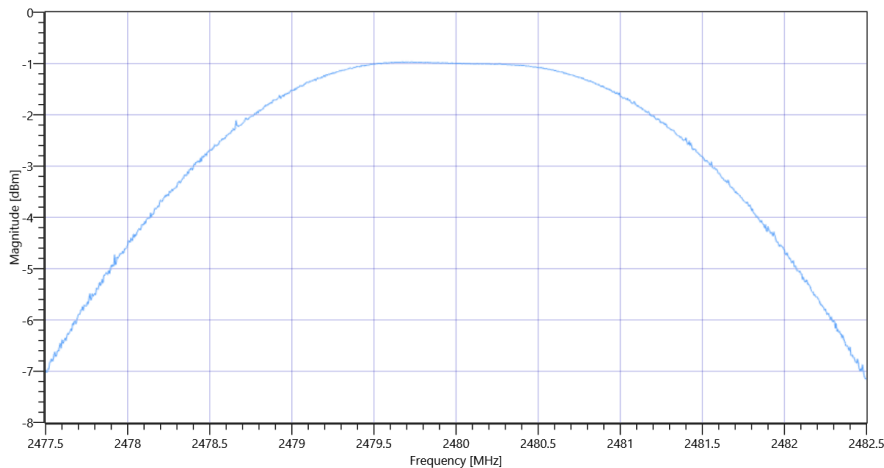
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	-0.87	dBm	INFO
Ref. Frequency	---	---	2480.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	9.13 11.21 15
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

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	---	-0.97	dBm	INFO
Peak Power	---	---	0.799834	mW	INFO
Frequency at Peak	---	---	2479.675	MHz	INFO



Common 2G4 # Peak output power 3MHz-3MHz ~ BT LE 1 Msps

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