# Measurement Results

No.1-1754/21-04-04_log1_conducted

## 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.

Test/s performed:

Andreas Curette
Testing Manager
Radio Communications

# Table of Content

# EUT Information

| EUT DEFINITION | |
|---|---|
| Manufacturer | Würth Elektronik eiSos GmbH & Co KG |
| Type | Proteus-E |
| Serial Number | Con1 |
| Setup Number | 1.0 |
| Version SW | NI |
| Version FW | NI |
| Version HW | 1.0 |
| Comment 1 | |
| Comment 2 | |
| Temperature [°C] Min | -40 |
| Temperature [°C] Nom | 20 |
| Temperature [°C] Max | 85 |
| Voltage [V] Min | 1.8 |
| Voltage [V] Nom | 3 |
| Voltage [V] Max | 3.6 |

# FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps

| Test References | |
|---|---|
| TC Start | 13.09.2021 10:43:53 |
| Ambit Temp [°C] \| Humidity [rel%] | 24.9 \| 45 |
| System Version | 3.0.1.7 |
| Test Specification | FCC Part 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 | WS_USB_RS232 \| TWO \| 11 \| 19200 \| 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 |
| Switched Path | EUT - SignalingUnit - SpectrumAnalyzer |

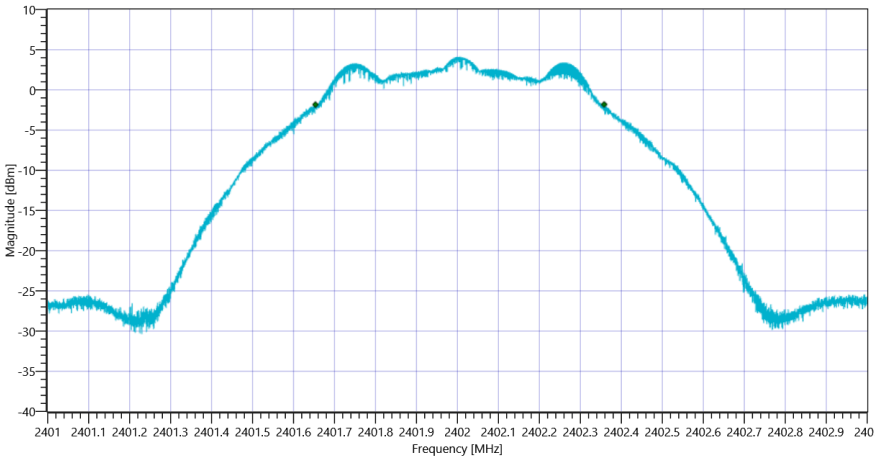
| Test Equipment |
|---|
| Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60 |
| Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI |

## Test at TX 2402 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.27 | dBm | INFO |
| Ref. Frequency | --- | --- | 2402.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.27 \| 10.16 \| 15 |
| Start [MHz] \| Stop [MHz] | 2401.000 \| 2403.000 |
| RBW [MHz] \| VBW [MHz] | 0.100000 \| 0.300000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 50 \| 200 \| 10001 \| SWE |

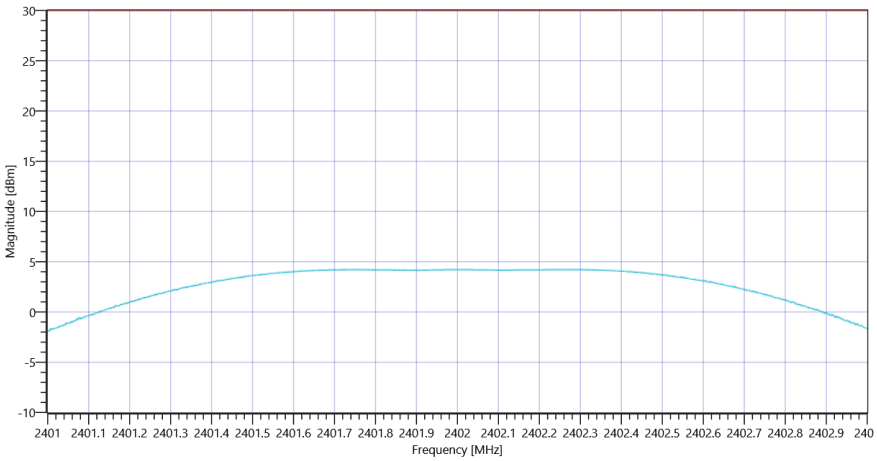
| DTS Bandwidth | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| DTS Bandwidth (6dB) | --- | --- | 705 | kHz | INFO |




*FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps DTS BW*

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 14.27 \| 10.16 \| 20 |
| Start [MHz] \| Stop [MHz] | 2401.000 \| 2403.000 |
| RBW [MHz] \| VBW [MHz] | 1.000000 \| 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 | 4.21 | dBm | PASS |
| Peak Power | --- | 1000 | 2.636331 | mW | PASS |
| Frequency at Peak | --- | --- | 2401.992 | MHz | INFO |



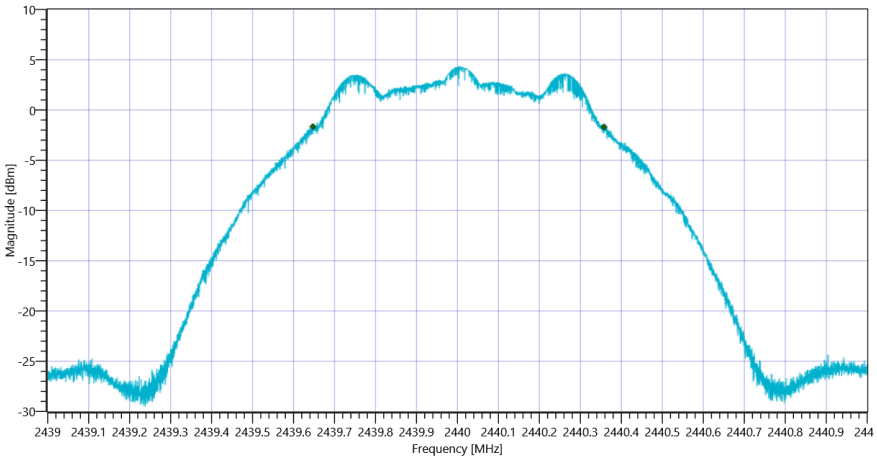

*FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps*

## Test at TX 2440 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.48 | dBm | INFO |
| Ref. Frequency | --- | --- | 2440.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.48 \| 10.24 \| 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 |

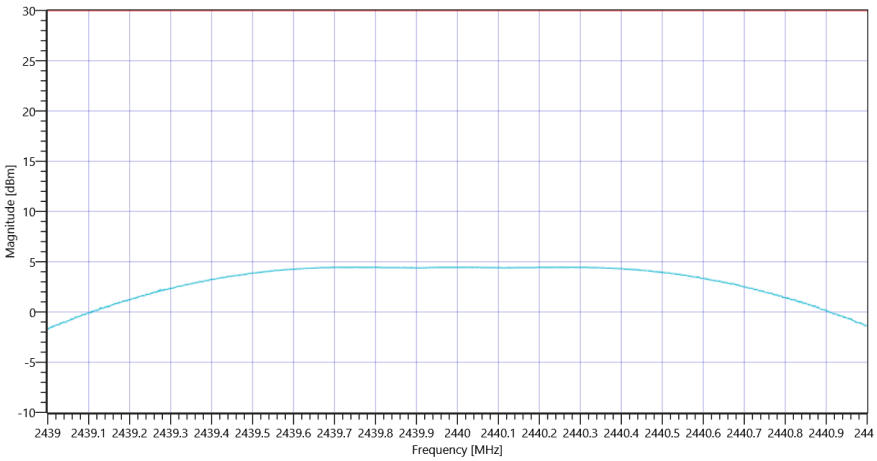
| DTS Bandwidth | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| DTS Bandwidth (6dB) | --- | --- | 711 | kHz | INFO |




*FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps DTS BW*

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 14.48 \| 10.24 \| 20 |
| Start [MHz] \| Stop [MHz] | 2439.000 \| 2441.000 |
| RBW [MHz] \| VBW [MHz] | 1.000000 \| 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 | 4.45 | dBm | PASS |
| Peak Power | --- | 1000 | 2.786121 | mW | PASS |
| Frequency at Peak | --- | --- | 2440.256 | MHz | INFO |



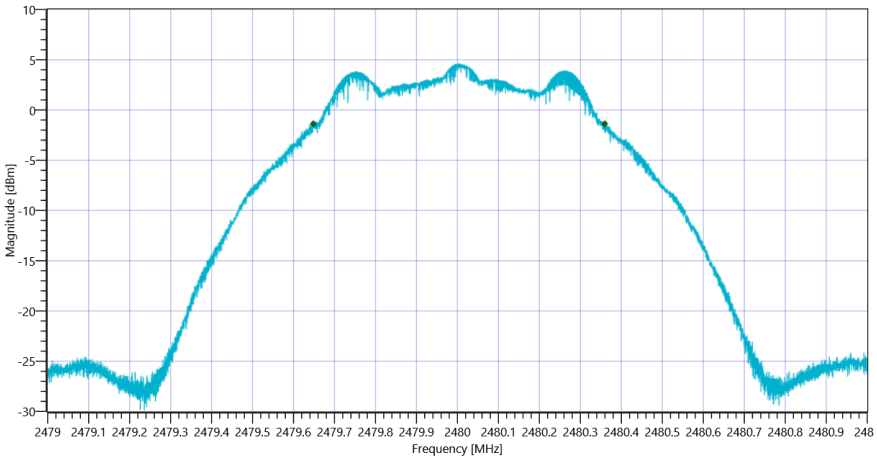

*FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps*

## Test at TX 2480 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.80 | dBm | INFO |
| Ref. Frequency | --- | --- | 2480.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.80 \| 10.3 \| 15 |
| Start [MHz] \| Stop [MHz] | 2479.000 \| 2481.000 |
| RBW [MHz] \| VBW [MHz] | 0.100000 \| 0.300000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 50 \| 200 \| 10001 \| SWE |

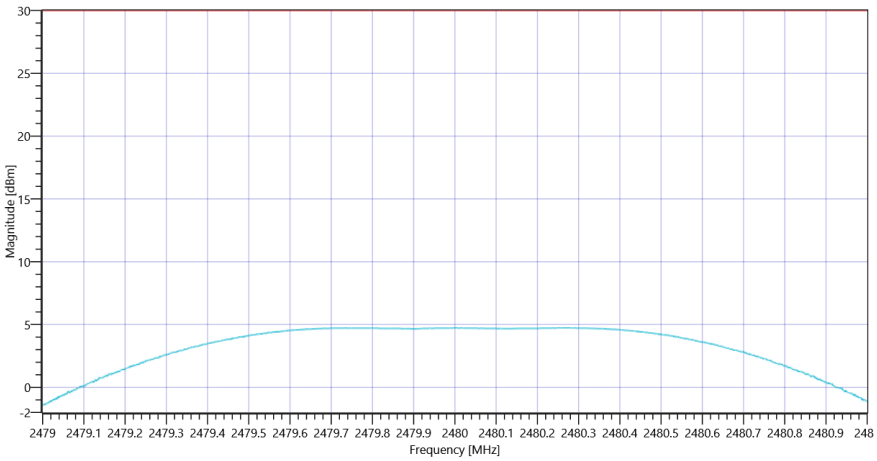
| DTS Bandwidth | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| DTS Bandwidth (6dB) | --- | --- | 711 | kHz | INFO |




*FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps DTS BW*

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 14.80 \| 10.3 \| 20 |
| Start [MHz] \| Stop [MHz] | 2479.000 \| 2481.000 |
| RBW [MHz] \| VBW [MHz] | 1.000000 \| 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 | 4.73 | dBm | PASS |
| Peak Power | --- | 1000 | 2.971666 | mW | PASS |
| Frequency at Peak | --- | --- | 2480.278 | MHz | INFO |




*FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 1 Msps*

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

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

| Test References | |
|---|---|
| TC Start | 13.09.2021 10:46:21 |
| Ambit Temp [°C] \| Humidity [rel%] | 25.0 \| 45 |
| System Version | 3.0.1.7 |
| Test Specification | FCC Part 15.247 |
| Test Method | 99 |
| TC Version | 0.0.1 |
| My Description | FCC 15.247 Bandwidth 6dB 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 | WS_USB_RS232 \| TWO \| 11 \| 19200 \| 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 |
| Switched Path | EUT - SignalingUnit - SpectrumAnalyzer |

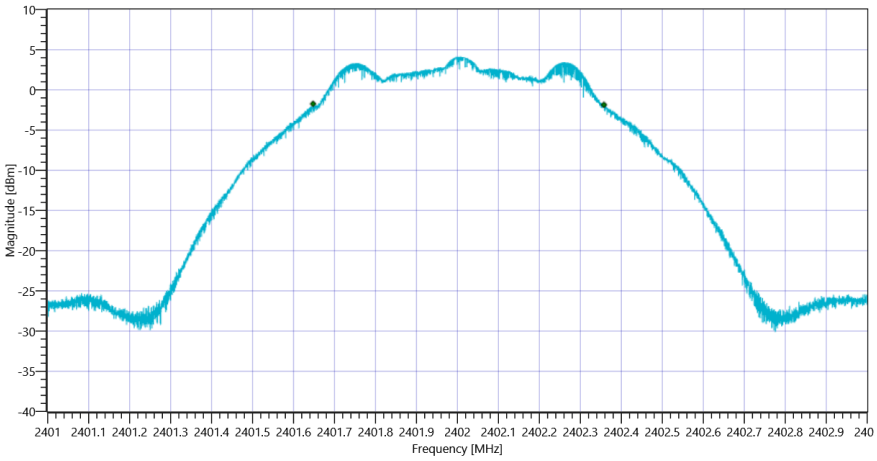
| Test Equipment |
|---|
| Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60 |
| Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI |

## Test at TX 2402 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.29 | dBm | INFO |
| Ref. Frequency | --- | --- | 2402.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.29 \| 10.16 \| 15 |
| Start [MHz] \| Stop [MHz] | 2401.000 \| 2403.000 |
| RBW [MHz] \| VBW [MHz] | 0.100000 \| 0.300000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 50 \| 200 \| 10001 \| SWE |

| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| DTS Bandwidth (6dB) | 500 | --- | 710 | kHz | PASS |



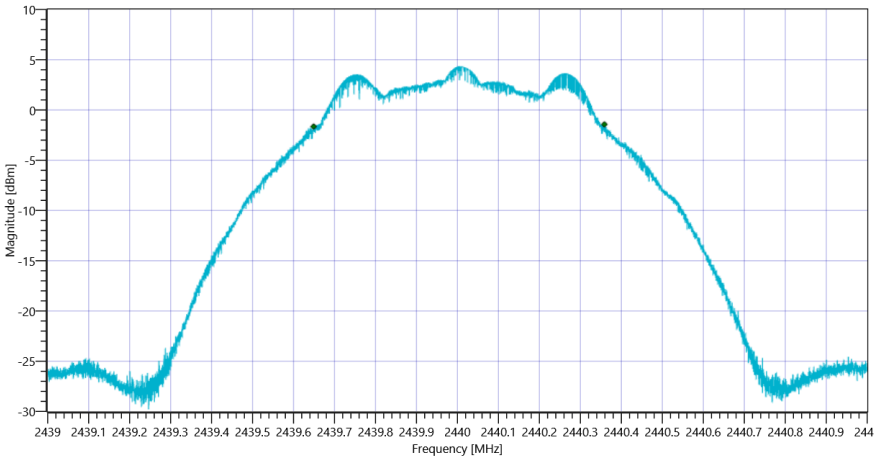

*FCC Part 15.247 Bandwidth 6dB DTS ~ BT LE 1 Msps*

## Test at TX 2440 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.56 | dBm | INFO |
| Ref. Frequency | --- | --- | 2440.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.56 \| 10.24 \| 15 |
| Start [MHz] \| Stop [MHz] | 2439.000 \| 2441.000 |
| RBW [MHz] \| VBW [MHz] | 0.100000 \| 0.300000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 50 \| 200 \| 10001 \| SWE |

| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| DTS Bandwidth (6dB) | 500 | --- | 710 | kHz | PASS |



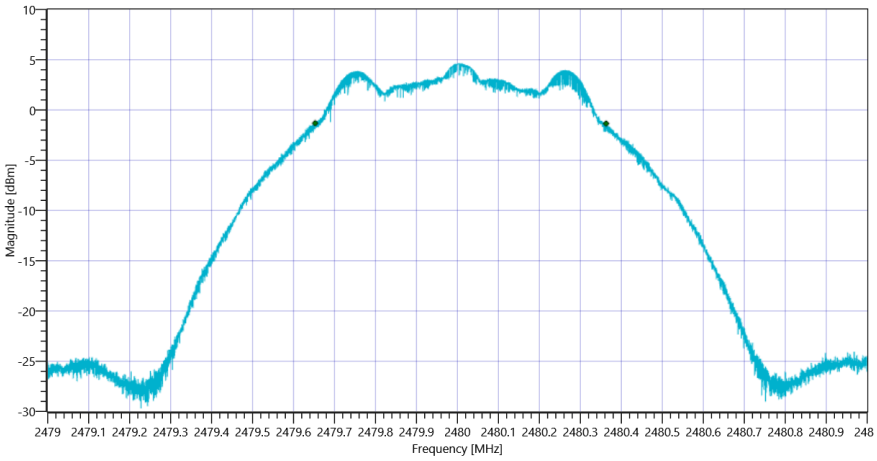

*FCC Part 15.247 Bandwidth 6dB DTS ~ BT LE 1 Msps*

## Test at TX 2480 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.80 | dBm | INFO |
| Ref. Frequency | --- | --- | 2480.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.80 \| 10.3 \| 15 |
| Start [MHz] \| Stop [MHz] | 2479.000 \| 2481.000 |
| RBW [MHz] \| VBW [MHz] | 0.100000 \| 0.300000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 50 \| 200 \| 10001 \| SWE |

| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| DTS Bandwidth (6dB) | 500 | --- | 710 | kHz | PASS |




*FCC Part 15.247 Bandwidth 6dB DTS ~ BT LE 1 Msps*

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

# FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 1 Msps

| Test References | |
|---|---|
| TC Start | 13.09.2021 10:47:55 |
| Ambit Temp [°C] \| Humidity [rel%] | 25.1 \| 45 |
| System Version | 3.0.1.7 |
| Test Specification | FCC Part 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 | WS_USB_RS232 \| TWO \| 11 \| 19200 \| 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 |
| Switched Path | EUT - SignalingUnit - SpectrumAnalyzer |

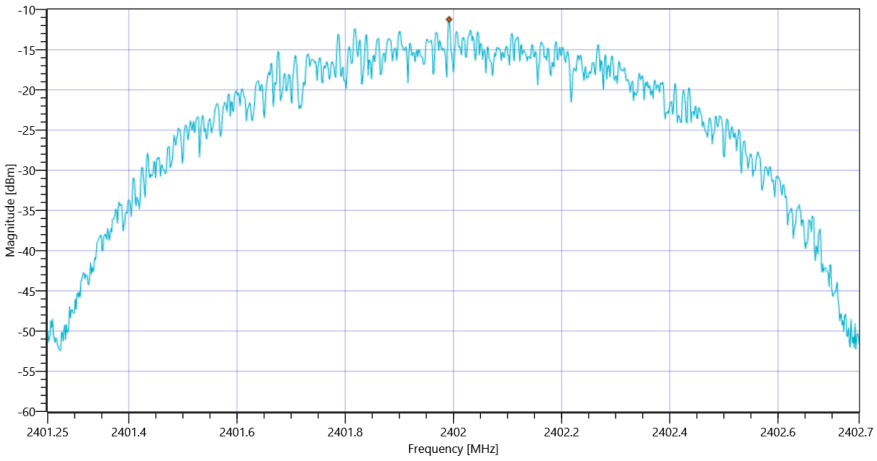
| Test Equipment |
|---|
| Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60 |
| Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI |

## Test at TX 2402 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.32 | dBm | INFO |
| Ref. Frequency | --- | --- | 2402.200 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.32 \| 10.16 \| 15 |
| Start [MHz] \| Stop [MHz] | 2401.250 \| 2402.750 |
| RBW [MHz] \| VBW [MHz] | 0.003000 \| 0.010000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 1000 \| 20 \| 1001 \| SWE |

| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Max Peak power Density | --- | 8 | -11.23 | dBm/3KHz | PASS |



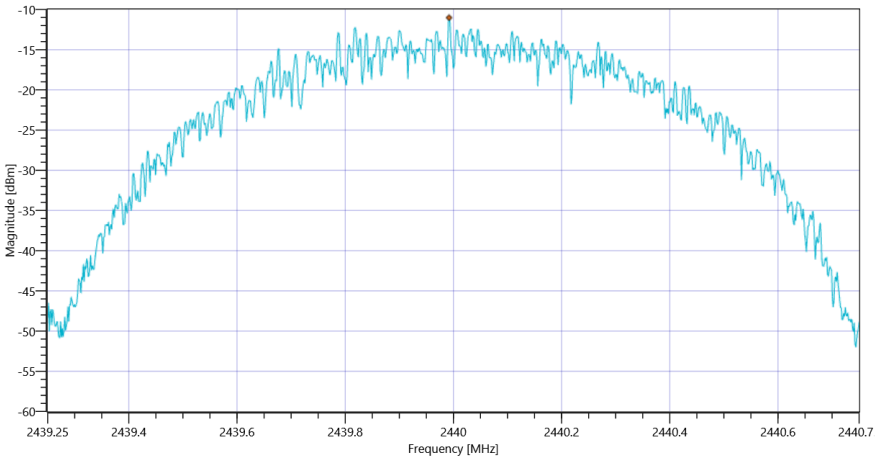

*FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 1 Msps*

## Test at TX 2440 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| **Test Description** | **Lower Limit** | **Upper Limit** | **Measured** | **Unit** | **Verdict** |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.55 | dBm | INFO |
| Ref. Frequency | --- | --- | 2440.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.55 \| 10.24 \| 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 | -11.02 | dBm/3KHz | PASS |



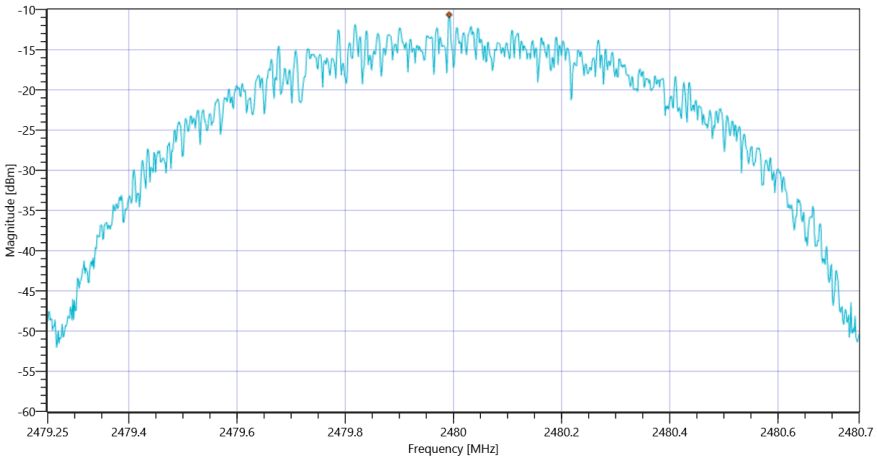

*FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 1 Msps*

## Test at TX 2480 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.86 | dBm | INFO |
| Ref. Frequency | --- | --- | 2480.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.86 \| 10.3 \| 15 |
| Start [MHz] \| Stop [MHz] | 2479.250 \| 2480.750 |
| RBW [MHz] \| VBW [MHz] | 0.003000 \| 0.010000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 1000 \| 20 \| 1001 \| SWE |

| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Max Peak power Density | --- | 8 | -10.65 | dBm/3KHz | PASS |




*FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 1 Msps*

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

# FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps

| Test References | |
|---|---|
| TC Start | 13.09.2021 10:49:58 |
| Ambit Temp [°C] \| Humidity [rel%] | 25.2 \| 44 |
| System Version | 3.0.1.7 |
| Test Specification | FCC Part 15.247 |
| 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 | WS_USB_RS232 \| TWO \| 11 \| 19200 \| 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 |
| Switched Path | EUT - SignalingUnit - SpectrumAnalyzer |

| Test Equipment |
|---|
| Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60 |
| Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI |

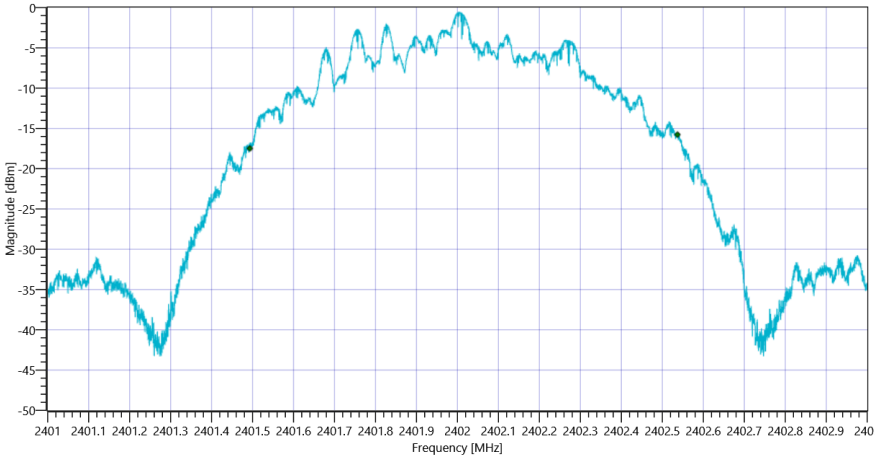
## Test at TX 2402 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.40 | dBm | INFO |
| Ref. Frequency | --- | --- | 2402.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.40 \| 10.16 \| 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 |

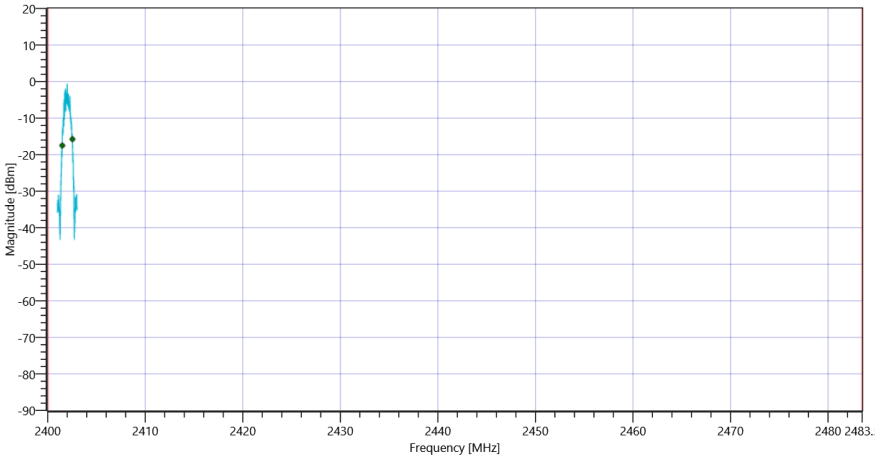
| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Bandwidth 99% | --- | --- | 1043.496 | kHz | INFO |
| T1 99% | 2400.000000 | --- | 2401.4935 | MHz | PASS |
| T2 99% | --- | 2483.500000 | 2402.5369 | MHz | PASS |

Plot: Bandwidth only




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps 99PCT*

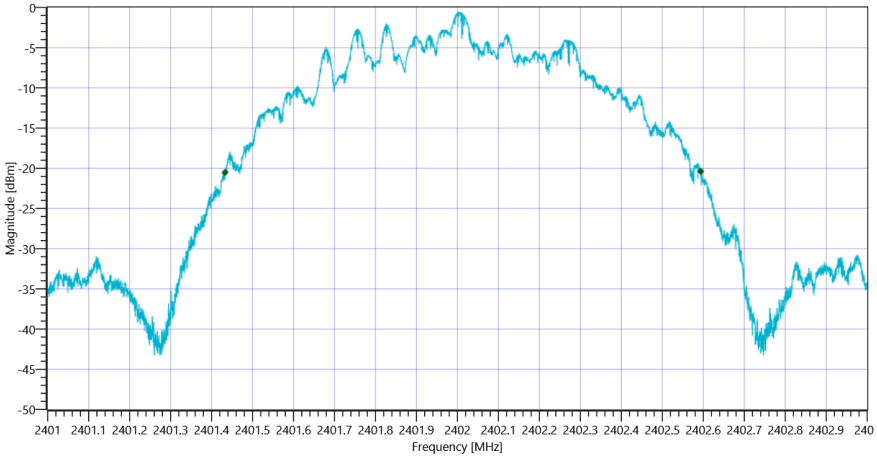
Plot: Bandwidth within Band




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps*

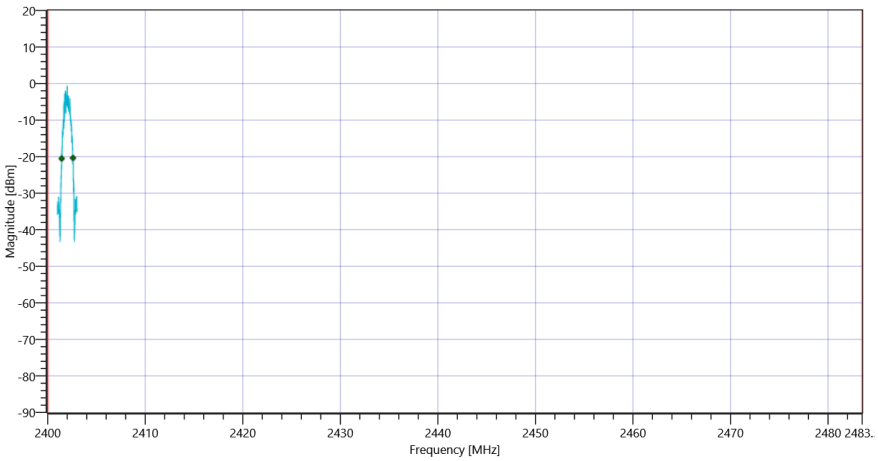
| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Bandwidth 20dB | --- | --- | 1161 | kHz | INFO |
| T1 20DB | 2400.000000 | --- | 2401.4328 | MHz | PASS |
| T2 20dB | --- | 2483.500000 | 2402.5936 | MHz | PASS |

Plot: Bandwidth only




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps 20dB*

Plot: Bandwidth within Band




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps*

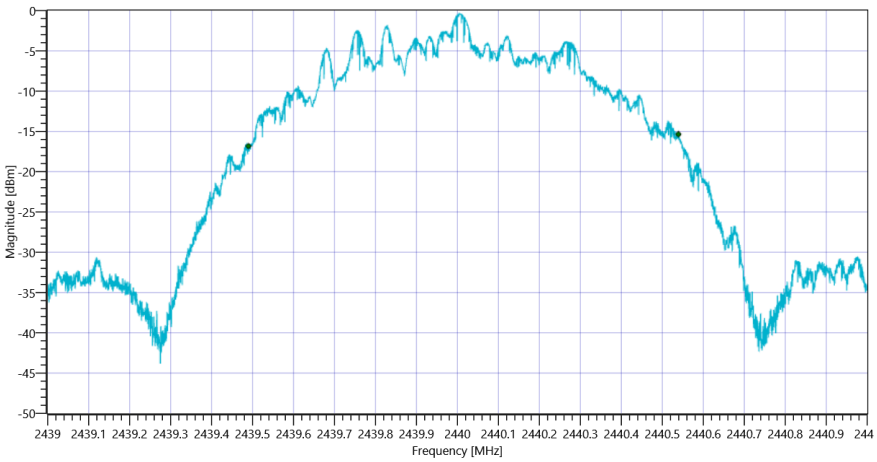
## Test at TX 2440 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.57 | dBm | INFO |
| Ref. Frequency | --- | --- | 2440.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.57 \| 10.24 \| 15 |
| Start [MHz] \| Stop [MHz] | 2439.000 \| 2441.000 |
| RBW [MHz] \| VBW [MHz] | 0.020000 \| 0.100000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 50 \| 200 \| 10001 \| SWE |

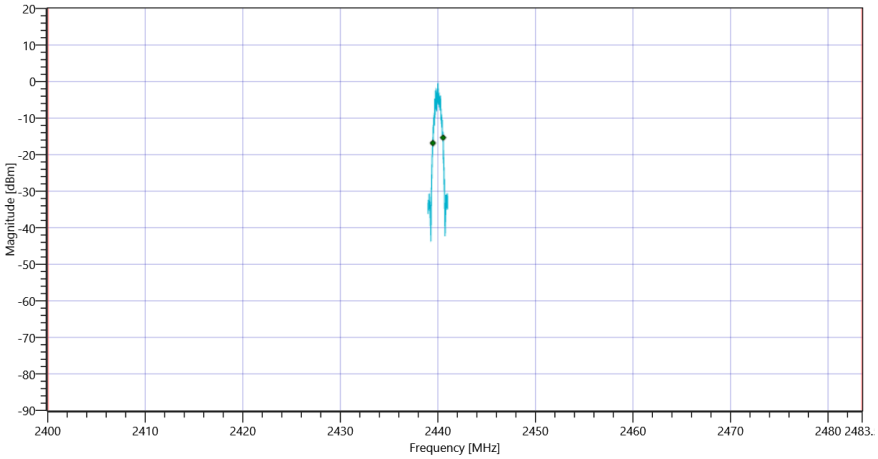
| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Bandwidth 99% | --- | --- | 1049.295 | kHz | INFO |
| T1 99% | 2400.000000 | --- | 2439.4899 | MHz | PASS |
| T2 99% | --- | 2483.500000 | 2440.5391 | MHz | PASS |

Plot: Bandwidth only




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps 99PCT*

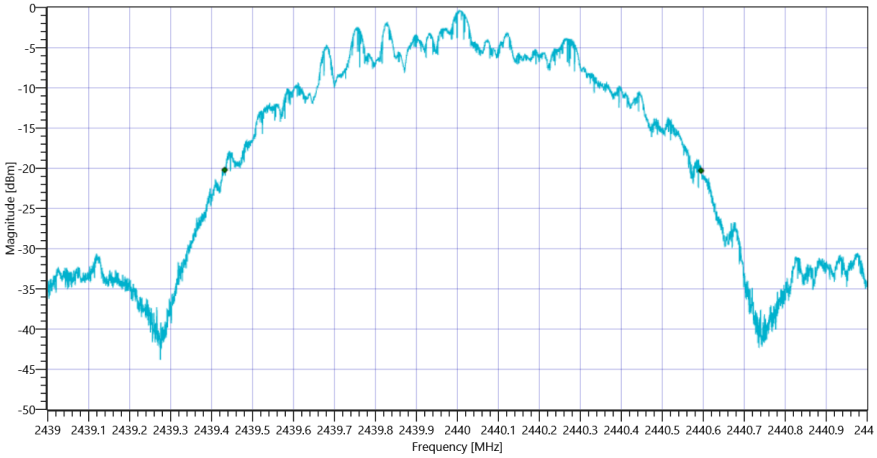
Plot: Bandwidth within Band




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps*

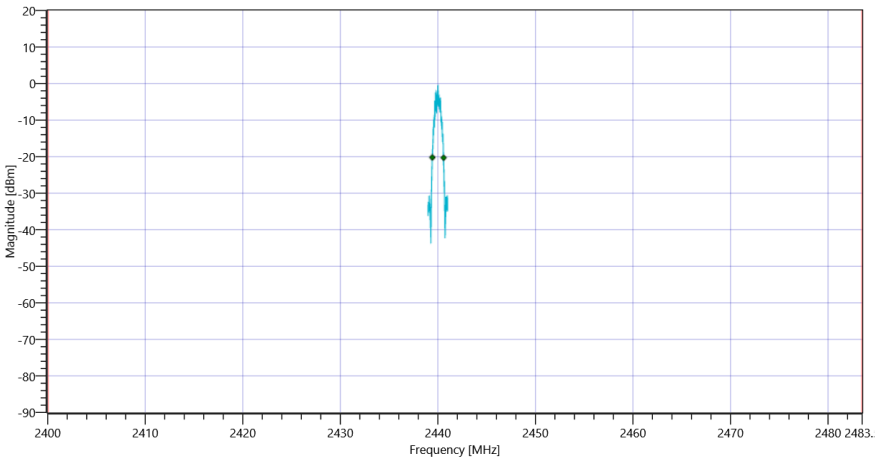
| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Bandwidth 20dB | --- | --- | 1163 | kHz | INFO |
| T1 20DB | 2400.000000 | --- | 2439.4318 | MHz | PASS |
| T2 20dB | --- | 2483.500000 | 2440.5946 | MHz | PASS |

Plot: Bandwidth only




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps 20dB*

Plot: Bandwidth within Band




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps*

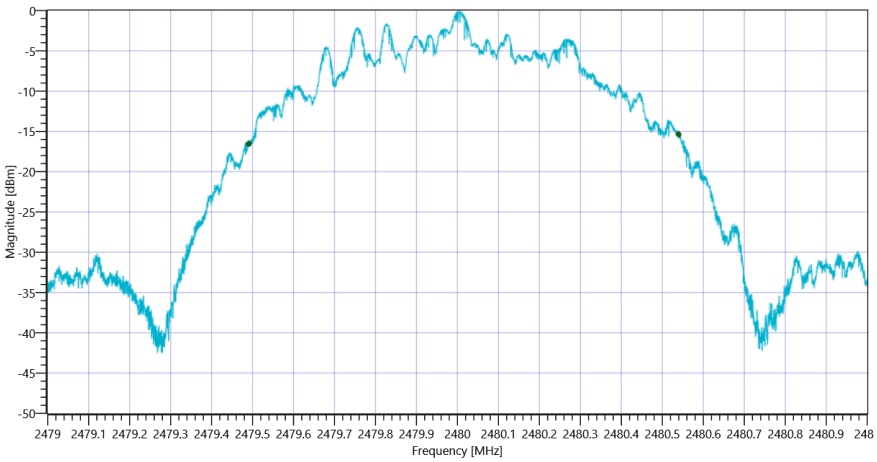
## Test at TX 2480 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.84 | dBm | INFO |
| Ref. Frequency | --- | --- | 2480.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.84 \| 10.3 \| 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 |

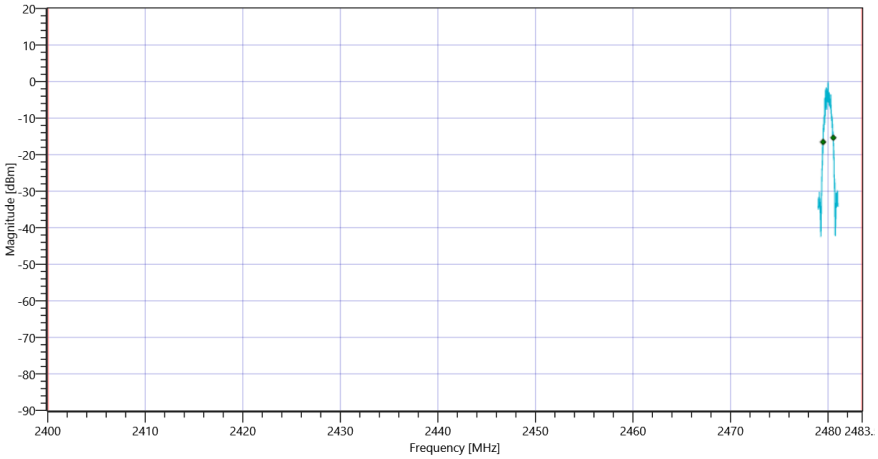
| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Bandwidth 99% | --- | --- | 1049.095 | kHz | INFO |
| T1 99% | 2400.000000 | --- | 2479.4905 | MHz | PASS |
| T2 99% | --- | 2483.500000 | 2480.5395 | MHz | PASS |

Plot: Bandwidth only




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps 99PCT*

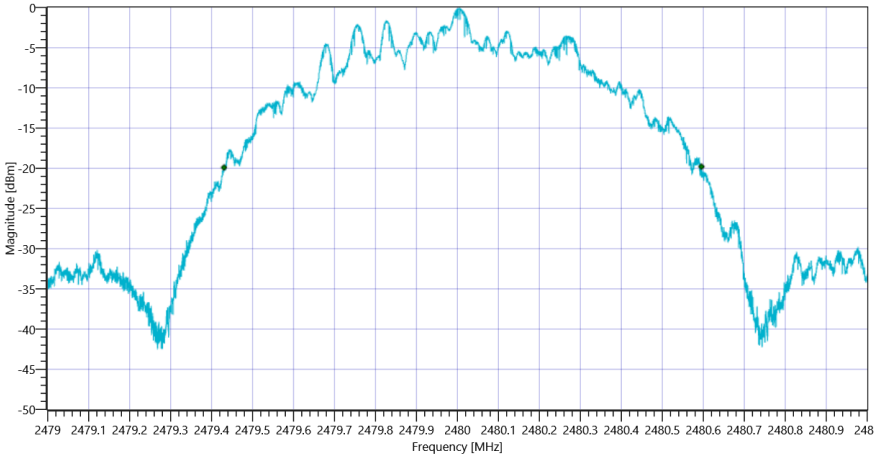
Plot: Bandwidth within Band




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps*

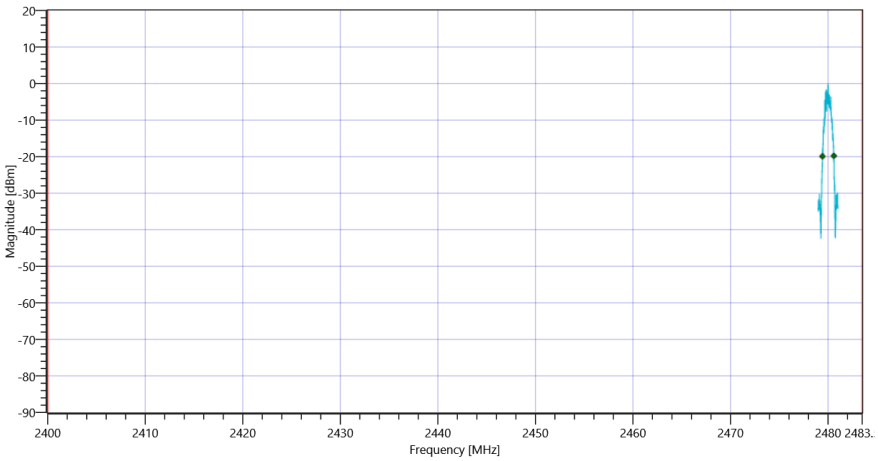
| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Bandwidth 20dB | --- | --- | 1165 | kHz | INFO |
| T1 20DB | 2400.000000 | --- | 2479.4302 | MHz | PASS |
| T2 20dB | --- | 2483.500000 | 2480.5954 | MHz | PASS |

Plot: Bandwidth only




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps 20dB*

Plot: Bandwidth within Band




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 1 Msps*

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

# FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 2 Msps

| Test References | |
|---|---|
| TC Start | 13.09.2021 11:11:59 |
| Ambit Temp [°C] \| Humidity [rel%] | 25.4 \| 44 |
| System Version | 3.0.1.7 |
| Test Specification | FCC Part 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 | WS_USB_RS232 \| TWO \| 11 \| 19200 \| 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] 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 |
| Switched Path | EUT - SignalingUnit - SpectrumAnalyzer |

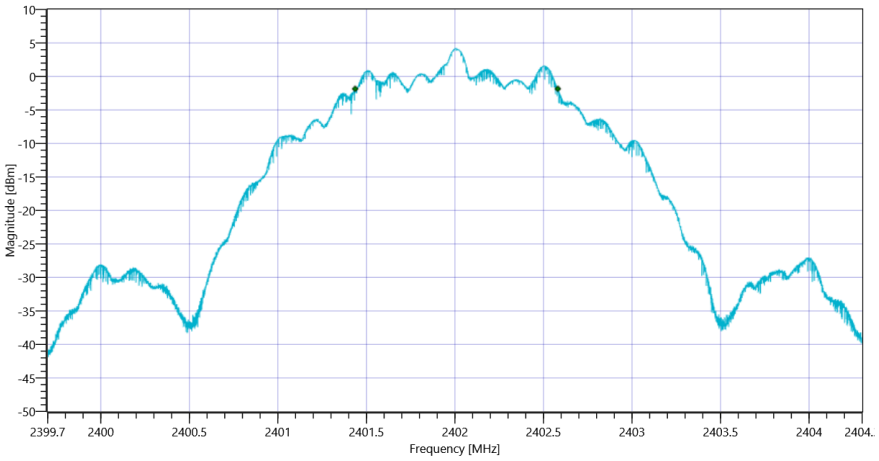
| Test Equipment |
|---|
| Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60 |
| Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI |

## Test at TX 2402 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.29 | dBm | INFO |
| Ref. Frequency | --- | --- | 2402.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.29 \| 10.16 \| 15 |
| Start [MHz] \| Stop [MHz] | 2399.700 \| 2404.300 |
| RBW [MHz] \| VBW [MHz] | 0.100000 \| 0.300000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 50 \| 200 \| 10001 \| SWE |

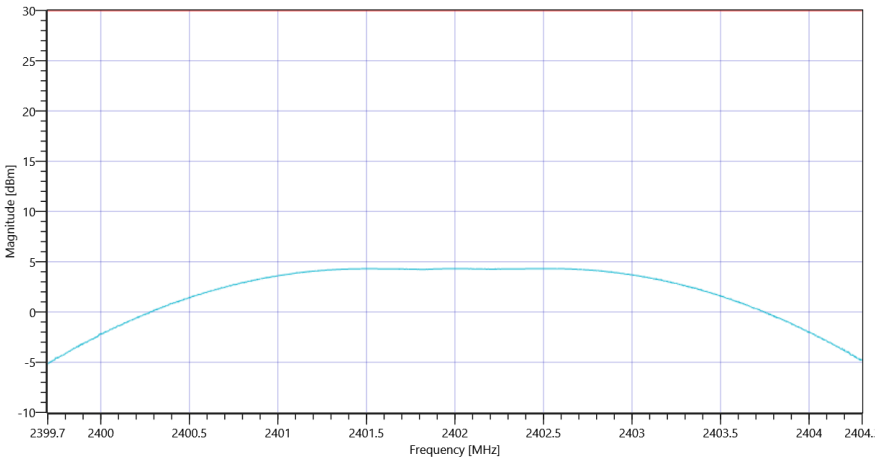
| DTS Bandwidth | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| DTS Bandwidth (6dB) | --- | --- | 1144 | kHz | INFO |




*FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 2 Msps DTS BW*

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 14.29 \| 10.16 \| 20 |
| Start [MHz] \| Stop [MHz] | 2399.700 \| 2404.300 |
| 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 | 4.32 | dBm | PASS |
| Peak Power | --- | 1000 | 2.703958 | mW | PASS |
| Frequency at Peak | --- | --- | 2402.473 | MHz | INFO |



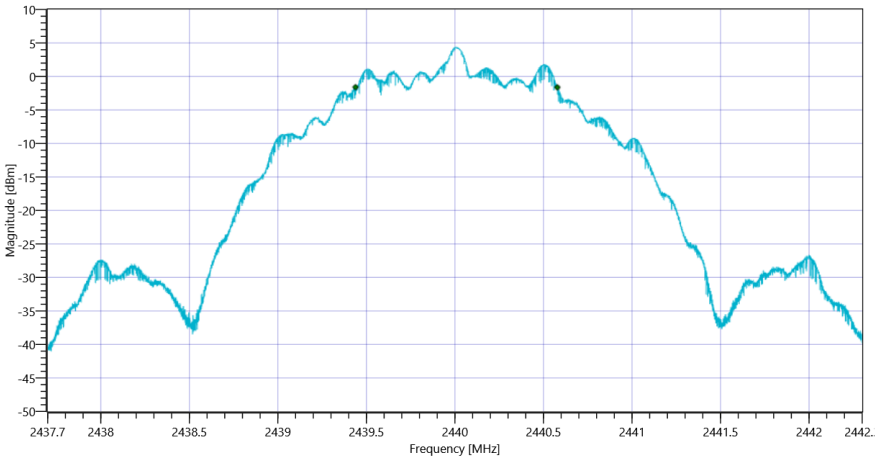

*FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 2 Msps*

## Test at TX 2440 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.59 | dBm | INFO |
| Ref. Frequency | --- | --- | 2440.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.59 \| 10.24 \| 15 |
| 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 |

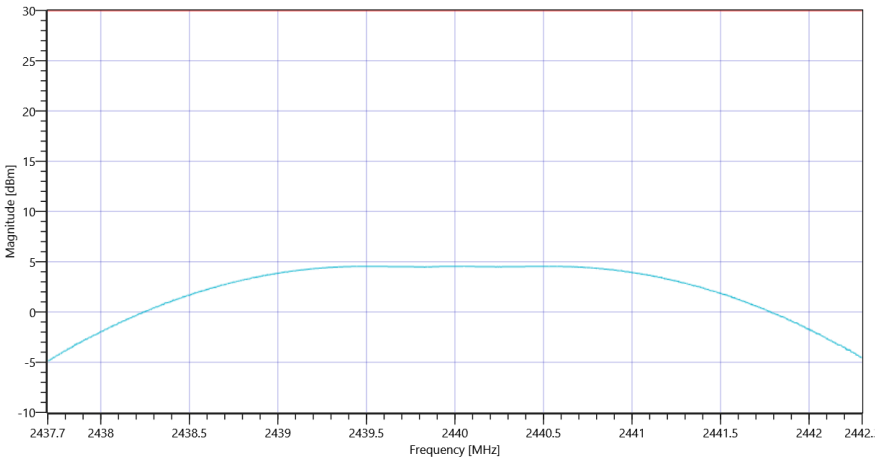
| DTS Bandwidth | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| DTS Bandwidth (6dB) | --- | --- | 1140 | kHz | INFO |




*FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 2 Msps DTS BW*

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 14.59 \| 10.24 \| 20 |
| 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 | 4.55 | dBm | PASS |
| Peak Power | --- | 1000 | 2.851018 | mW | PASS |
| Frequency at Peak | --- | --- | 2440.009 | MHz | INFO |



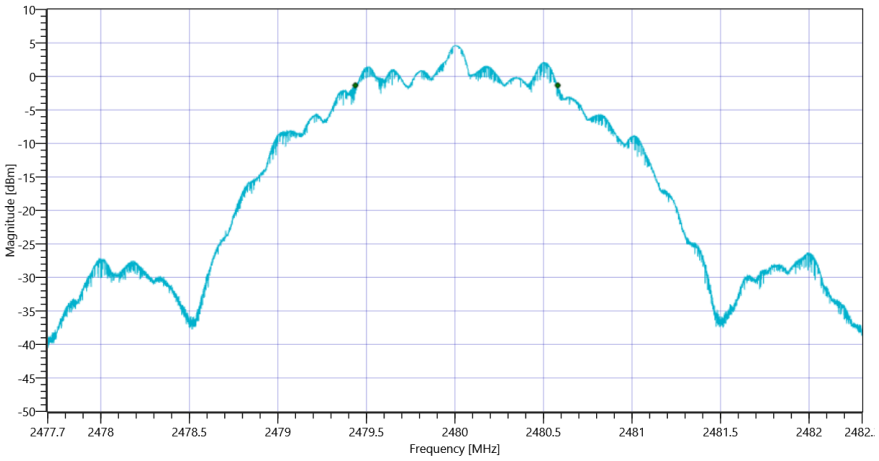

*FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 2 Msps*

## Test at TX 2480 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.90 | dBm | INFO |
| Ref. Frequency | --- | --- | 2480.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.90 \| 10.3 \| 15 |
| Start [MHz] \| Stop [MHz] | 2477.700 \| 2482.300 |
| RBW [MHz] \| VBW [MHz] | 0.100000 \| 0.300000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 50 \| 200 \| 10001 \| SWE |

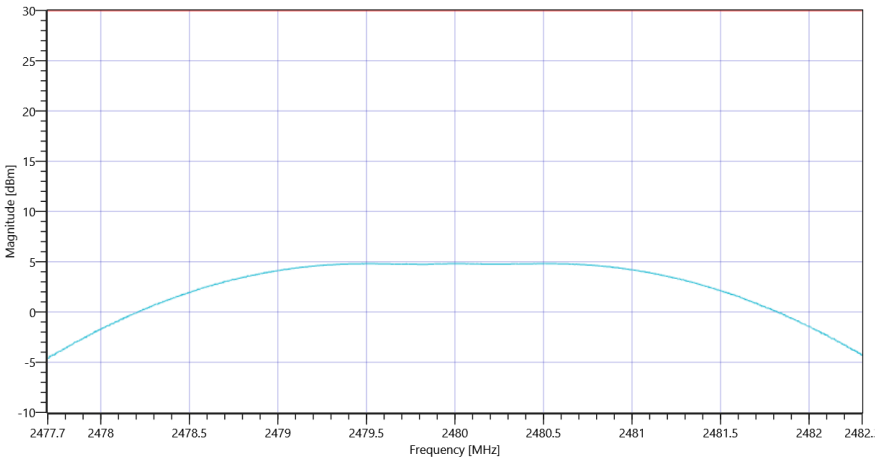
| DTS Bandwidth | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| DTS Bandwidth (6dB) | --- | --- | 1143 | kHz | INFO |




*FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 2 Msps DTS BW*

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 14.90 \| 10.3 \| 20 |
| Start [MHz] \| Stop [MHz] | 2477.700 \| 2482.300 |
| 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 | 4.81 | dBm | PASS |
| Peak Power | --- | 1000 | 3.026913 | mW | PASS |
| Frequency at Peak | --- | --- | 2480.515 | MHz | INFO |




*FCC Part 15.247 Maximum Peak Conducted Output Power DTS ~ BT LE 2 Msps*

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

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

| Test References | |
|---|---|
| TC Start | 13.09.2021 11:14:28 |
| Ambit Temp [°C] \| Humidity [rel%] | 25.6 \| 44 |
| System Version | 3.0.1.7 |
| Test Specification | FCC Part 15.247 |
| Test Method | 99 |
| TC Version | 0.0.1 |
| My Description | FCC 15.247 Bandwidth 6dB 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 | WS_USB_RS232 \| TWO \| 11 \| 19200 \| 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] 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 |
| Switched Path | EUT - SignalingUnit - SpectrumAnalyzer |

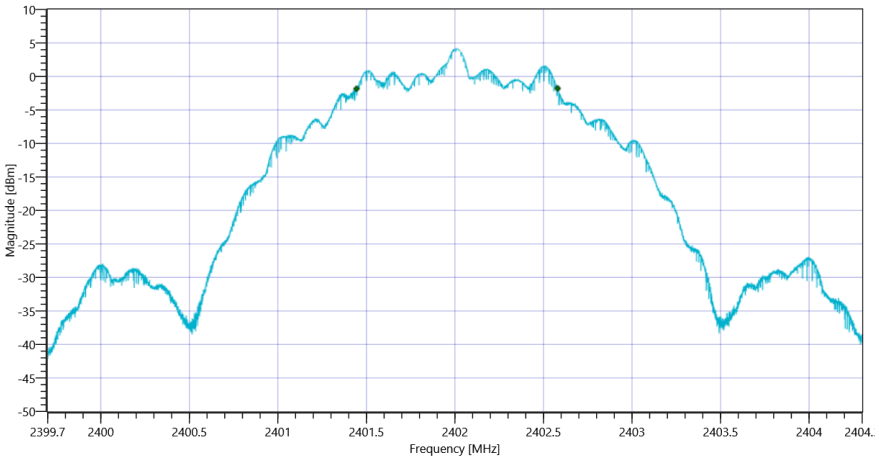
| Test Equipment |
|---|
| Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60 |
| Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI |

## Test at TX 2402 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.42 | dBm | INFO |
| Ref. Frequency | --- | --- | 2402.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.42 \| 10.16 \| 15 |
| Start [MHz] \| Stop [MHz] | 2399.700 \| 2404.300 |
| 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 | --- | 1136 | kHz | PASS |



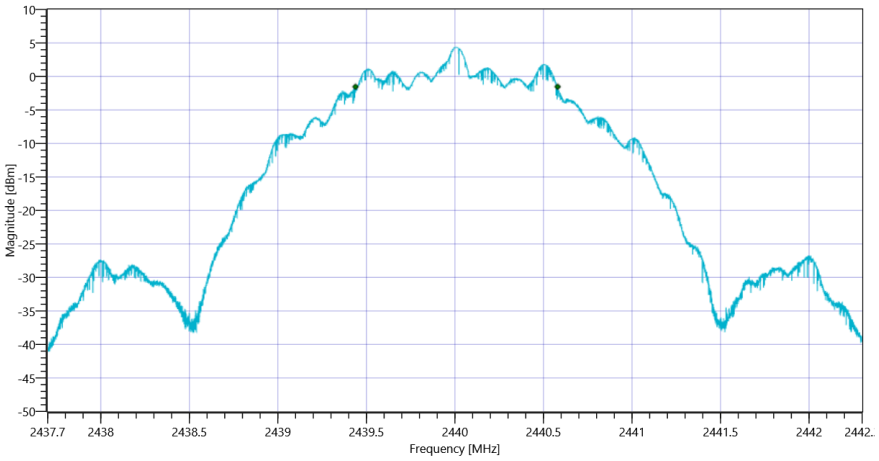

*FCC Part 15.247 Bandwidth 6dB DTS ~ BT LE 2 Msps*

## Test at TX 2440 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.60 | dBm | INFO |
| Ref. Frequency | --- | --- | 2440.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.60 \| 10.24 \| 15 |
| 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 | --- | 1142 | kHz | PASS |



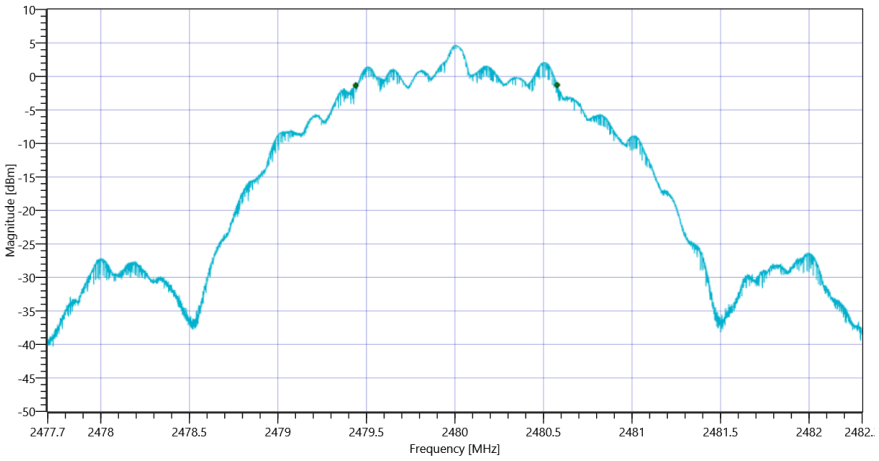

*FCC Part 15.247 Bandwidth 6dB DTS ~ BT LE 2 Msps*

## Test at TX 2480 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.89 | dBm | INFO |
| Ref. Frequency | --- | --- | 2480.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.89 \| 10.3 \| 15 |
| Start [MHz] \| Stop [MHz] | 2477.700 \| 2482.300 |
| 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 | --- | 1138 | kHz | PASS |




*FCC Part 15.247 Bandwidth 6dB DTS ~ BT LE 2 Msps*

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

# FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 2 Msps

| Test References | |
|---|---|
| TC Start | 13.09.2021 11:16:03 |
| Ambit Temp [°C] \| Humidity [rel%] | 25.6 \| 44 |
| System Version | 3.0.1.7 |
| Test Specification | FCC Part 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 | WS_USB_RS232 \| TWO \| 11 \| 19200 \| 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] 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 |
| Switched Path | EUT - SignalingUnit - SpectrumAnalyzer |

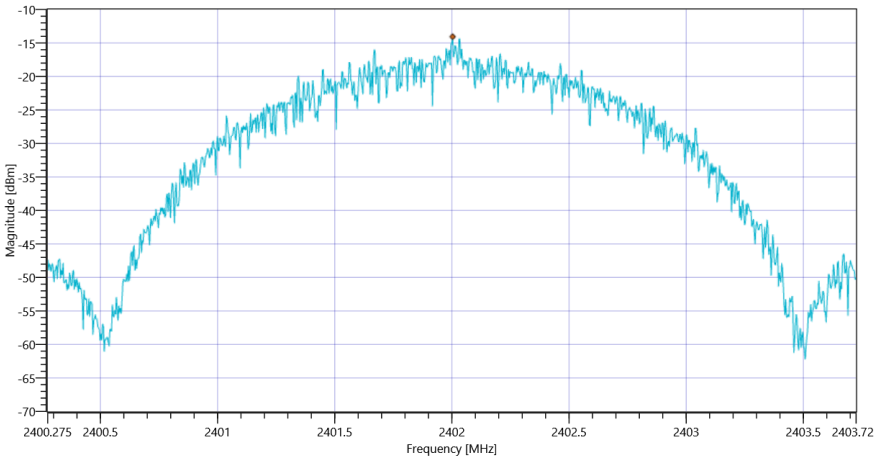
| Test Equipment |
|---|
| Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60 |
| Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI |

## Test at TX 2402 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.33 | dBm | INFO |
| Ref. Frequency | --- | --- | 2402.600 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.33 \| 10.16 \| 15 |
| Start [MHz] \| Stop [MHz] | 2400.275 \| 2403.725 |
| 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 | -14.06 | dBm/3KHz | PASS |



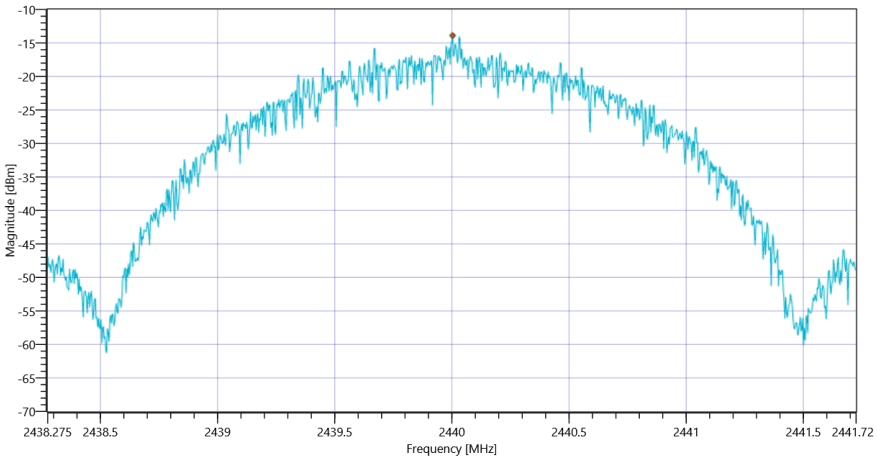

*FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 2 Msps*

## Test at TX 2440 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.71 | dBm | INFO |
| Ref. Frequency | --- | --- | 2440.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.71 \| 10.24 \| 15 |
| 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 | -13.88 | dBm/3KHz | PASS |



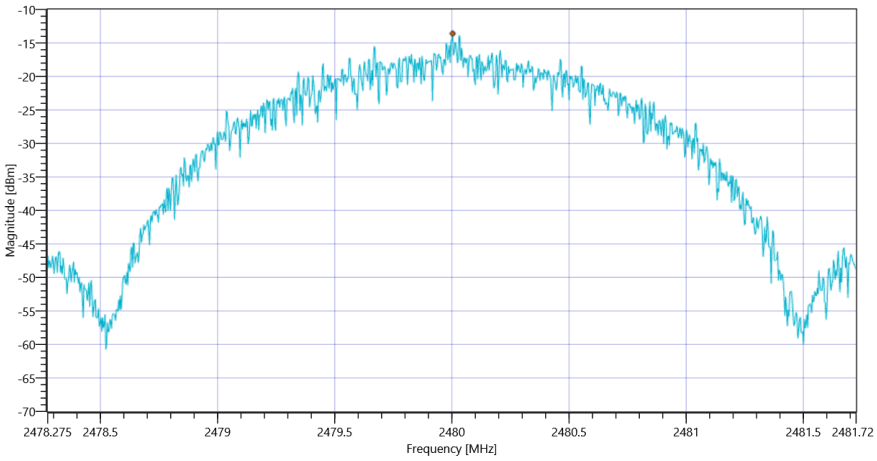

*FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 2 Msps*

## Test at TX 2480 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.84 | dBm | INFO |
| Ref. Frequency | --- | --- | 2480.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.84 \| 10.3 \| 15 |
| Start [MHz] \| Stop [MHz] | 2478.275 \| 2481.725 |
| 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 | -13.59 | dBm/3KHz | PASS |




*FCC Part 15.247 Peak Power Spectral Density DTS ~ BT LE 2 Msps*

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

# FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 2 Msps

| Test References | |
|---|---|
| TC Start | 13.09.2021 11:18:06 |
| Ambit Temp [°C] \| Humidity [rel%] | 25.7 \| 44 |
| System Version | 3.0.1.7 |
| Test Specification | FCC Part 15.247 |
| 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 | WS_USB_RS232 \| TWO \| 11 \| 19200 \| 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] 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 |
| Switched Path | EUT - SignalingUnit - SpectrumAnalyzer |

| Test Equipment |
|---|
| Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60 |
| Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI |

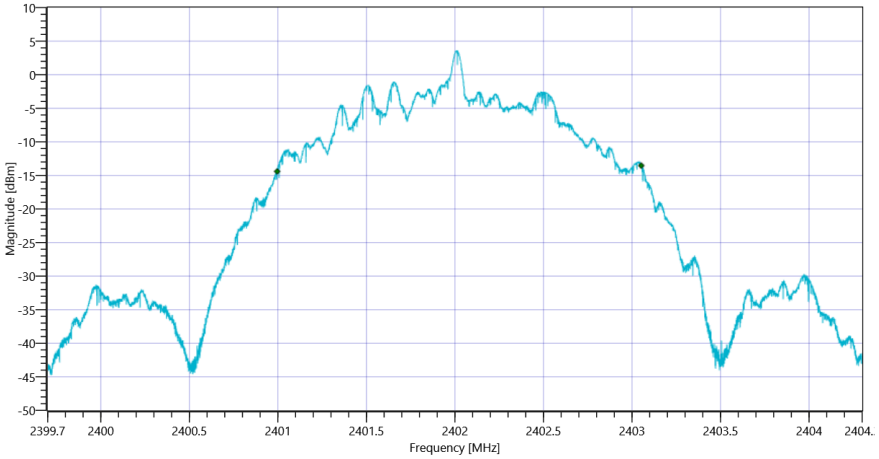
## Test at TX 2402 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.35 | dBm | INFO |
| Ref. Frequency | --- | --- | 2402.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.35 \| 10.16 \| 15 |
| Start [MHz] \| Stop [MHz] | 2399.700 \| 2404.300 |
| RBW [MHz] \| VBW [MHz] | 0.050000 \| 0.200000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 50 \| 200 \| 10001 \| SWE |

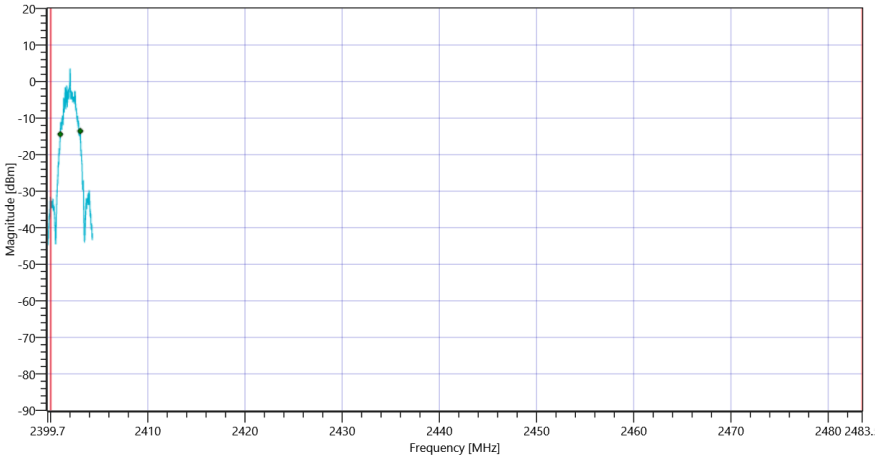
| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Bandwidth 99% | --- | --- | 2056.454 | kHz | INFO |
| T1 99% | 2400.000000 | --- | 2400.9959 | MHz | PASS |
| T2 99% | --- | 2483.500000 | 2403.0524 | MHz | PASS |

Plot: Bandwidth only




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 2 Msps 99PCT*

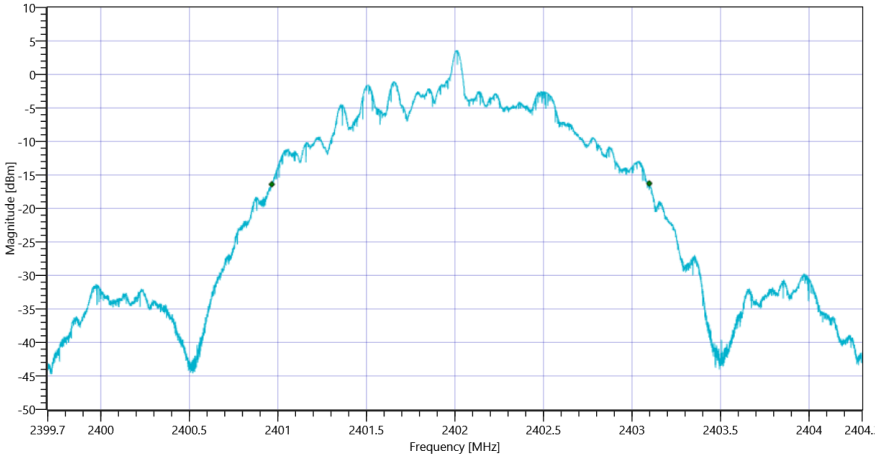
Plot: Bandwidth within Band




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 2 Msps*

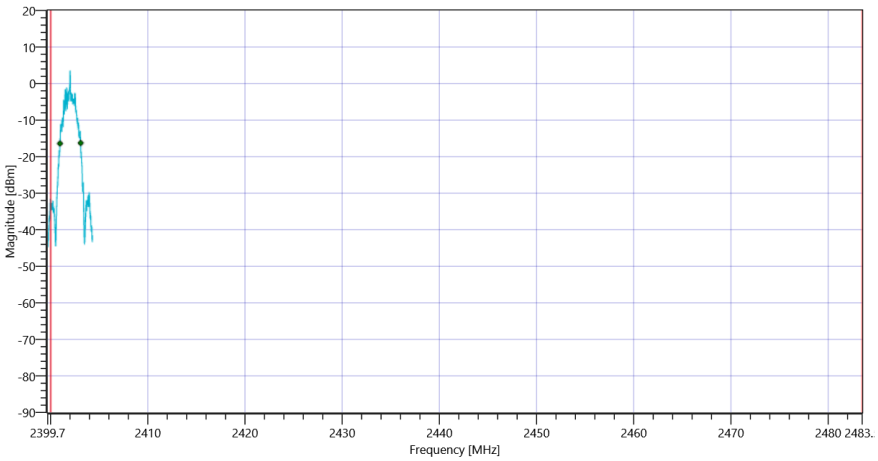
| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Bandwidth 20dB | --- | --- | 2132 | kHz | INFO |
| T1 20DB | 2400.000000 | --- | 2400.9655 | MHz | PASS |
| T2 20dB | --- | 2483.500000 | 2403.0976 | MHz | PASS |

Plot: Bandwidth only




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 2 Msps 20dB*

Plot: Bandwidth within Band




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 2 Msps*

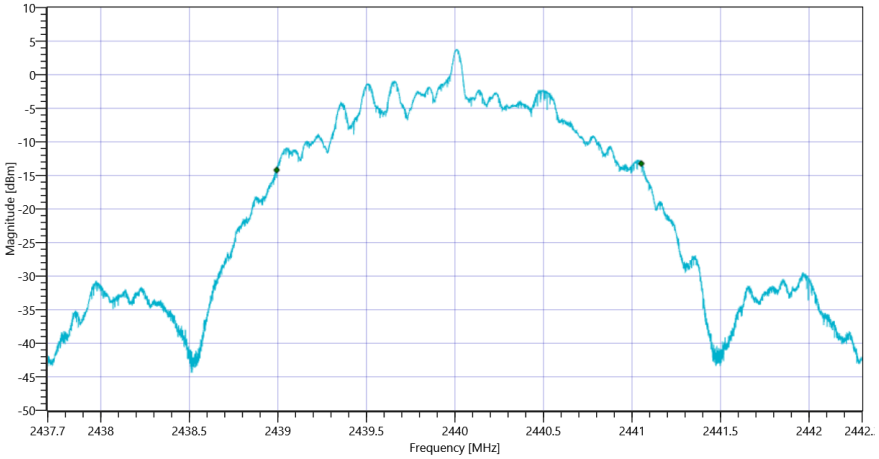
## Test at TX 2440 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.64 | dBm | INFO |
| Ref. Frequency | --- | --- | 2440.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.64 \| 10.24 \| 15 |
| 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 |

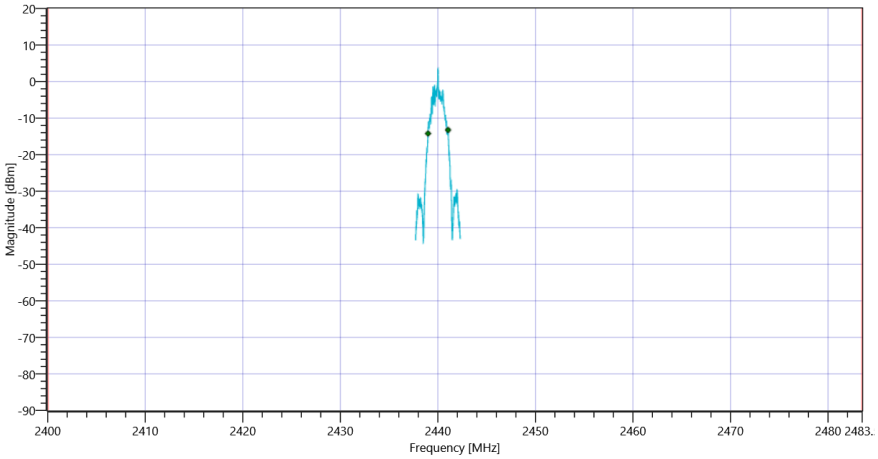
| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Bandwidth 99% | --- | --- | 2059.674 | kHz | INFO |
| T1 99% | 2400.000000 | --- | 2438.9932 | MHz | PASS |
| T2 99% | --- | 2483.500000 | 2441.0528 | MHz | PASS |

Plot: Bandwidth only




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 2 Msps 99PCT*

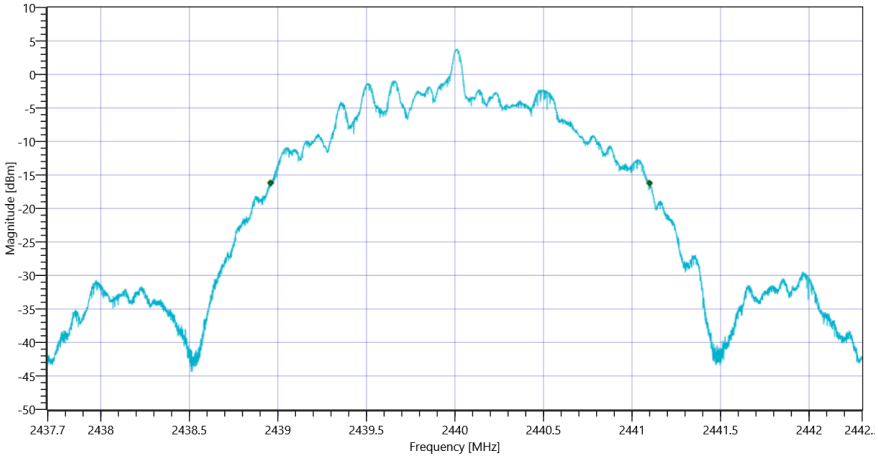
Plot: Bandwidth within Band




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 2 Msps*

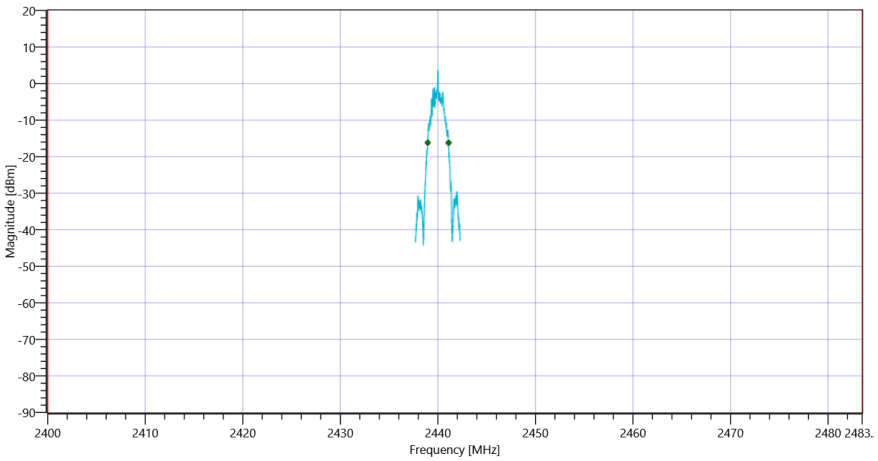
| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Bandwidth 20dB | --- | --- | 2141 | kHz | INFO |
| T1 20DB | 2400.000000 | --- | 2438.9581 | MHz | PASS |
| T2 20dB | --- | 2483.500000 | 2441.0989 | MHz | PASS |

Plot: Bandwidth only




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 2 Msps 20dB*

Plot: Bandwidth within Band




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 2 Msps*

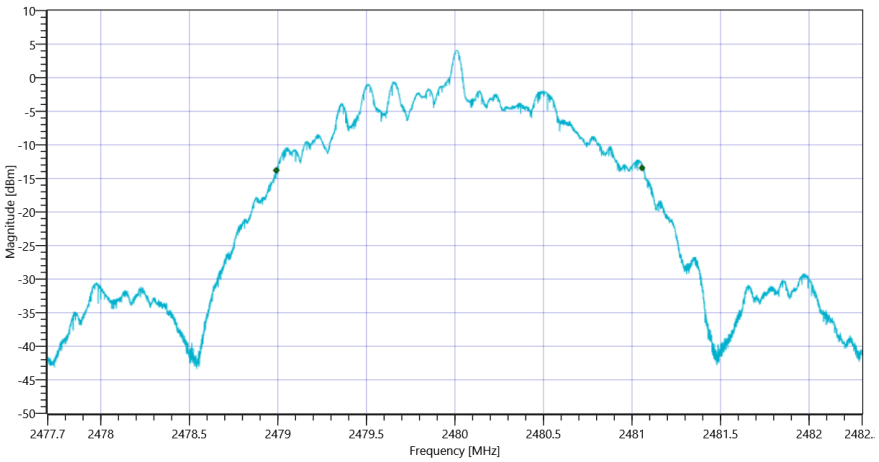
## Test at TX 2480 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.87 | dBm | INFO |
| Ref. Frequency | --- | --- | 2480.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 9.87 \| 10.3 \| 15 |
| Start [MHz] \| Stop [MHz] | 2477.700 \| 2482.300 |
| RBW [MHz] \| VBW [MHz] | 0.050000 \| 0.200000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 50 \| 200 \| 10001 \| SWE |

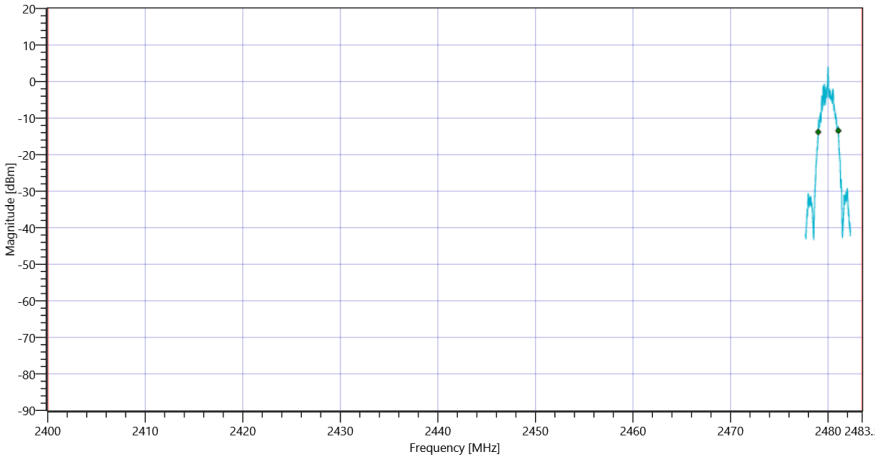
| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Bandwidth 99% | --- | --- | 2065.653 | kHz | INFO |
| T1 99% | 2400.000000 | --- | 2478.9909 | MHz | PASS |
| T2 99% | --- | 2483.500000 | 2481.0565 | MHz | PASS |

Plot: Bandwidth only




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 2 Msps 99PCT*

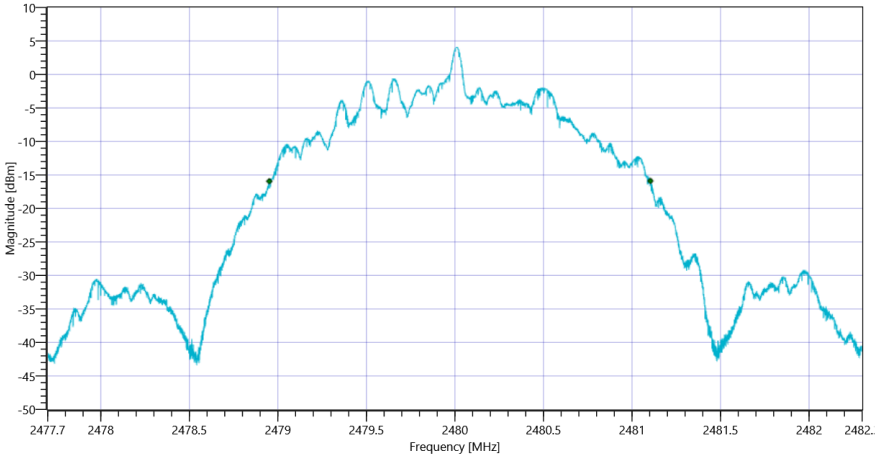
Plot: Bandwidth within Band




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 2 Msps*

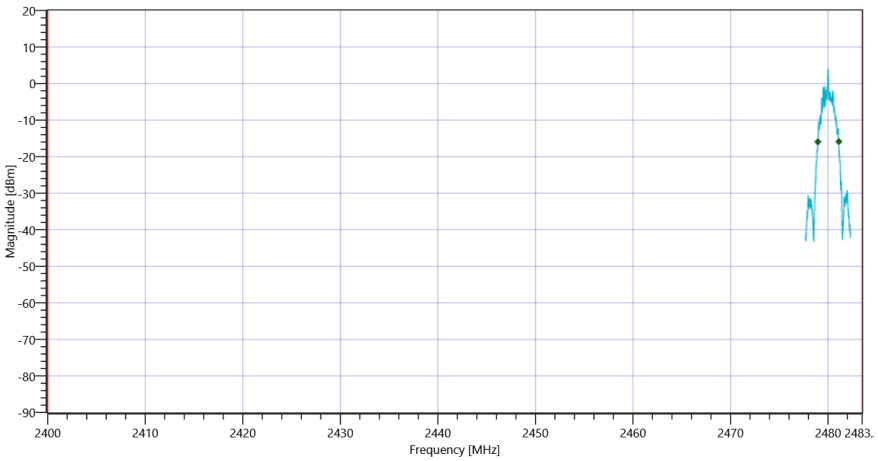
| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Bandwidth 20dB | --- | --- | 2152 | kHz | INFO |
| T1 20DB | 2400.000000 | --- | 2478.9517 | MHz | PASS |
| T2 20dB | --- | 2483.500000 | 2481.1040 | MHz | PASS |

Plot: Bandwidth only




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 2 Msps 20dB*

Plot: Bandwidth within Band




*FCC Part 15.247 Bandwidth 99PCT-20dB ~ BT LE 2 Msps*

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

# FCC Part 15.247 TX Spurious Conducted ~ BT LE 2 Msps

| Test References | |
|---|---|
| TC Start | 13.09.2021 11:20:48 |
| Ambit Temp [°C] \| Humidity [rel%] | 25.6 \| 43 |
| System Version | 3.0.1.7 |
| 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 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 | WS_USB_RS232 \| TWO \| 11 \| 19200 \| 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] 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 |
| Switched Path | EUT - SignalingUnit - SpectrumAnalyzer |

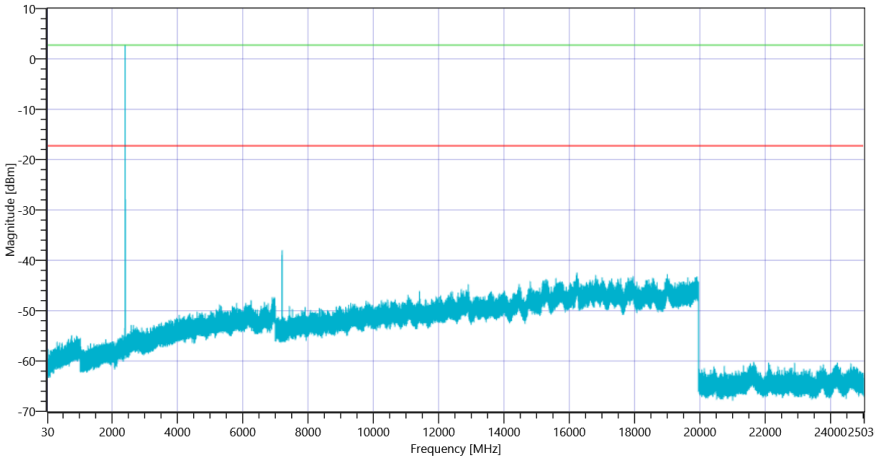
| Test Equipment |
|---|
| Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60 |
| Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI |

## Test at TX 2402 MHz

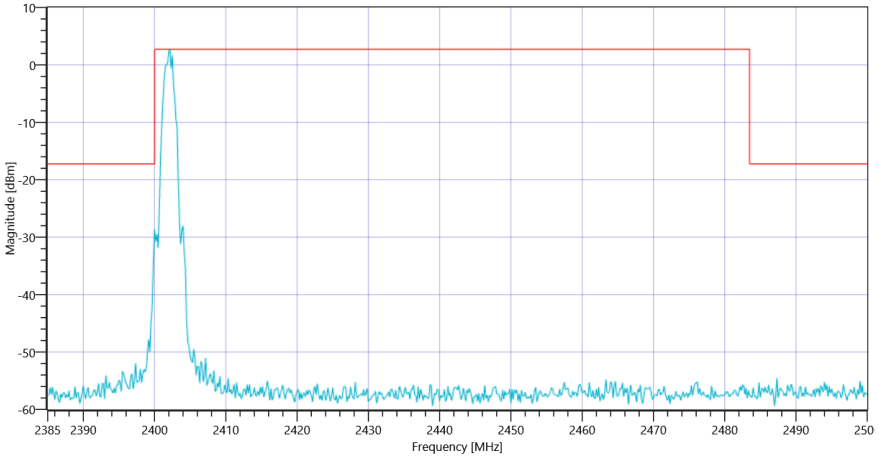
| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.43 | dBm | INFO |
| Ref. Frequency | --- | --- | 2402.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 4.43 \| 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 | 500 \| 8 \| 3001 \| SWE |

| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Reference @ 2402.17 MHz | --- | --- | 2.74 | dBm | INFO |
| No peaks detected | --- | --- | | | PASS |
| Lowest margin to limit 30 MHz | 0 | --- | -139.58 | dB | INFO |




*FCC Part 15.247 TX Spurious Conducted ~ BT LE 2 Msps 2402*

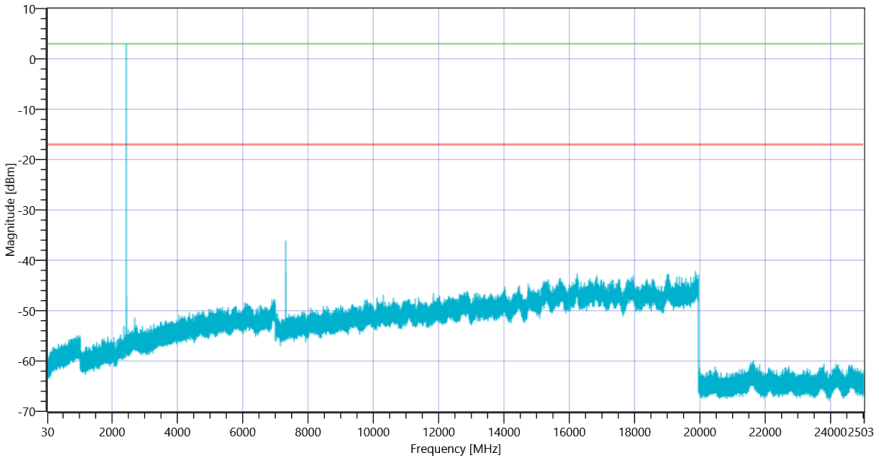


## Test at TX 2440 MHz

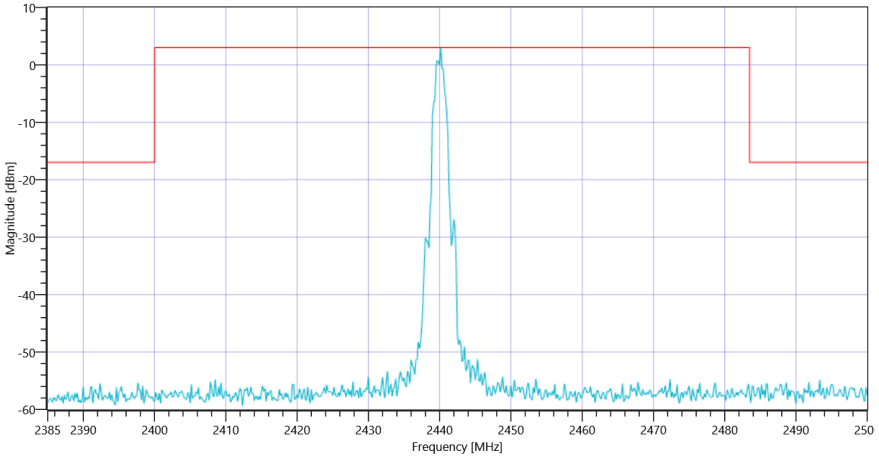
| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.66 | dBm | INFO |
| Ref. Frequency | --- | --- | 2440.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 4.66 \| 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 | 500 \| 8 \| 3001 \| SWE |

| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Reference @ 2440.17 MHz | --- | --- | 3.02 | dBm | INFO |
| No peaks detected | --- | --- | | | PASS |
| Lowest margin to limit 7320 MHz | 0 | --- | 19.13 | dB | INFO |




*FCC Part 15.247 TX Spurious Conducted ~ BT LE 2 Msps 2440*

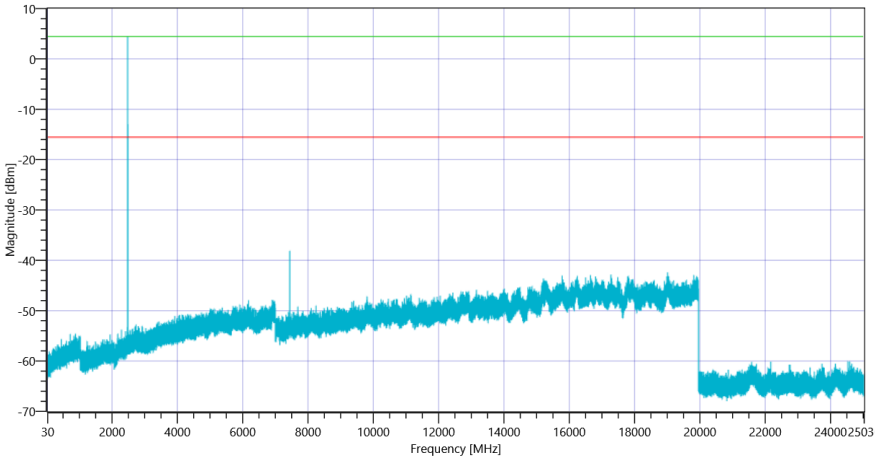


## Test at TX 2480 MHz

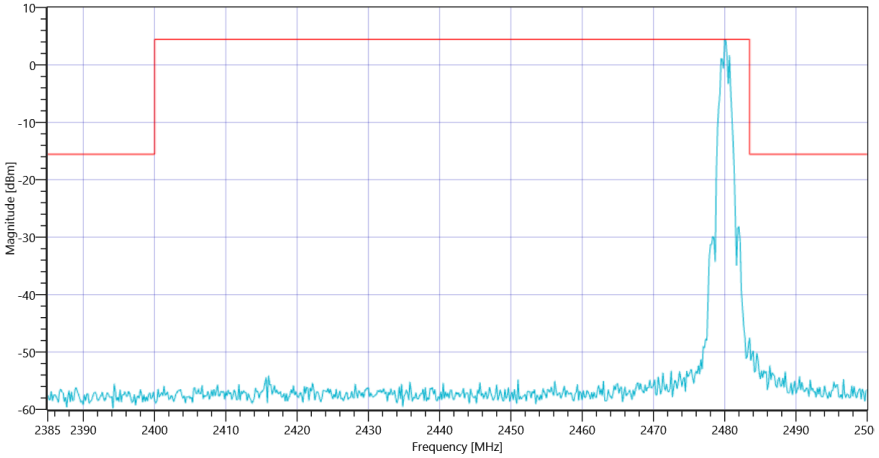
| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.90 | dBm | INFO |
| Ref. Frequency | --- | --- | 2480.500 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 4.90 \| 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 | 500 \| 8 \| 3001 \| SWE |

| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Reference @ 2480.00 MHz | --- | --- | 4.44 | dBm | INFO |
| No peaks detected | --- | --- | | | PASS |
| Lowest margin to limit 7440 MHz | 0 | --- | 22.57 | dB | INFO |




*FCC Part 15.247 TX Spurious Conducted ~ BT LE 2 Msps 2480*



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

# FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps

| Test References | |
|---|---|
| TC Start | 13.09.2021 10:52:38 |
| Ambit Temp [°C] \| Humidity [rel%] | 25.2 \| 44 |
| System Version | 3.0.1.7 |
| 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 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 | WS_USB_RS232 \| TWO \| 11 \| 19200 \| 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 |
| Switched Path | EUT - SignalingUnit - SpectrumAnalyzer |

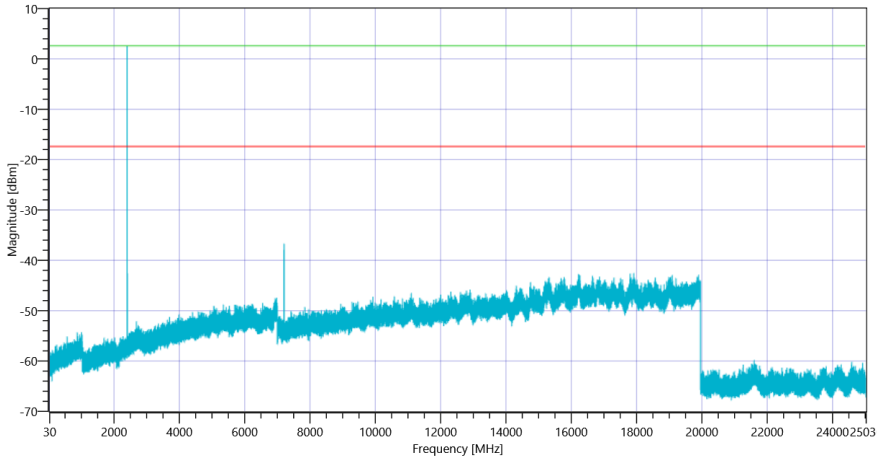
| Test Equipment |
|---|
| Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60 |
| Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI |

## Test at TX 2402 MHz

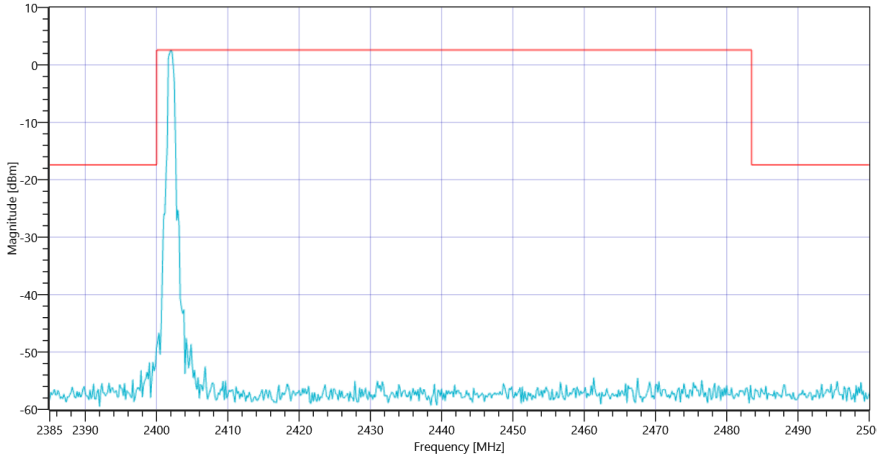
| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.38 | dBm | INFO |
| Ref. Frequency | --- | --- | 2402.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 4.38 \| 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 | 500 \| 8 \| 3001 \| SWE |

| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Reference @ 2402.00 MHz | --- | --- | 2.59 | dBm | INFO |
| No peaks detected | --- | --- | | | PASS |
| Lowest margin to limit 7206.833 MHz | 0 | --- | 19.29 | dB | INFO |




*FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2402*

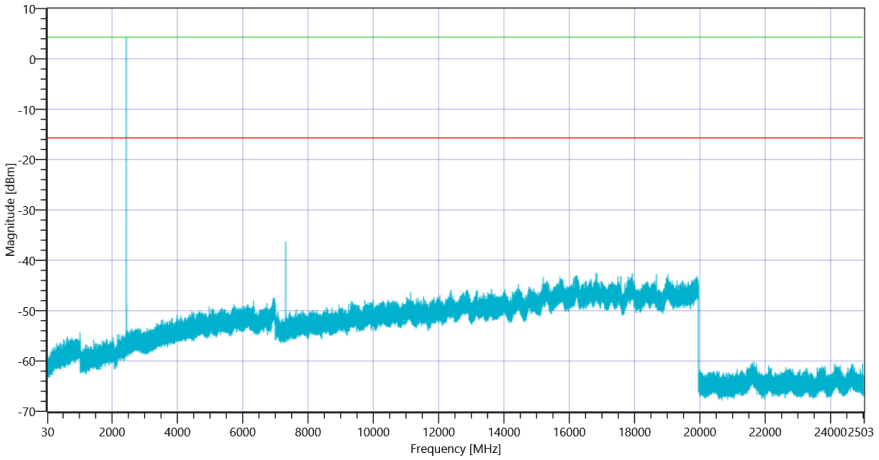


## Test at TX 2440 MHz

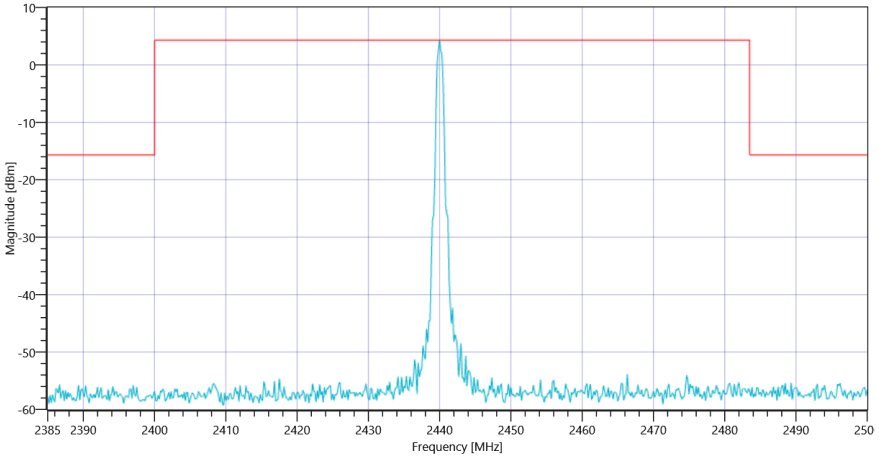
| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.58 | dBm | INFO |
| Ref. Frequency | --- | --- | 2440.200 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 4.58 \| 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 | 500 \| 8 \| 3001 \| SWE |

| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Reference @ 2440.00 MHz | --- | --- | 4.30 | dBm | INFO |
| No peaks detected | --- | --- | | | PASS |
| Lowest margin to limit 7320 MHz | 0 | --- | 20.53 | dB | INFO |




*FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2440*

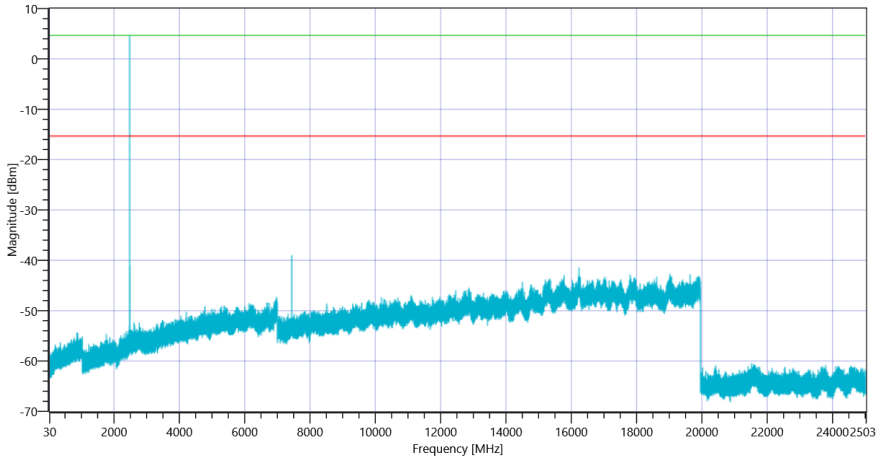


## Test at TX 2480 MHz

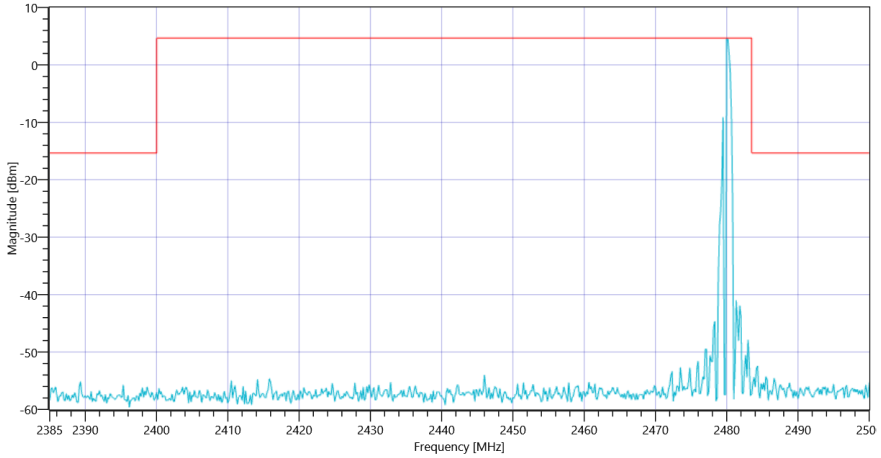
| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.88 | dBm | INFO |
| Ref. Frequency | --- | --- | 2480.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 4.88 \| 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 | 500 \| 8 \| 3001 \| SWE |

| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Reference @ 2480.00 MHz | --- | --- | 4.66 | dBm | INFO |
| No peaks detected | --- | --- | | | PASS |
| Lowest margin to limit 7440.833 MHz | 0 | --- | 23.7 | dB | INFO |




*FCC Part 15.247 TX Spurious Conducted ~ BT LE 1 Msps 2480*



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

# Common2G4 Peak OP 3MHz/3MHz ~ BT LE 1 Msps

| Test References | |
|---|---|
| TC Start | 13.09.2021 13:22:17 |
| Ambit Temp [°C] \| Humidity [rel%] | 26.3 \| 42 |
| System Version | 3.0.1.7 |
| Test Specification | 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 | WS_USB_RS232 \| TWO \| 11 \| 19200 \| 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 |
| Switched Path | EUT - SignalingUnit - SpectrumAnalyzer |

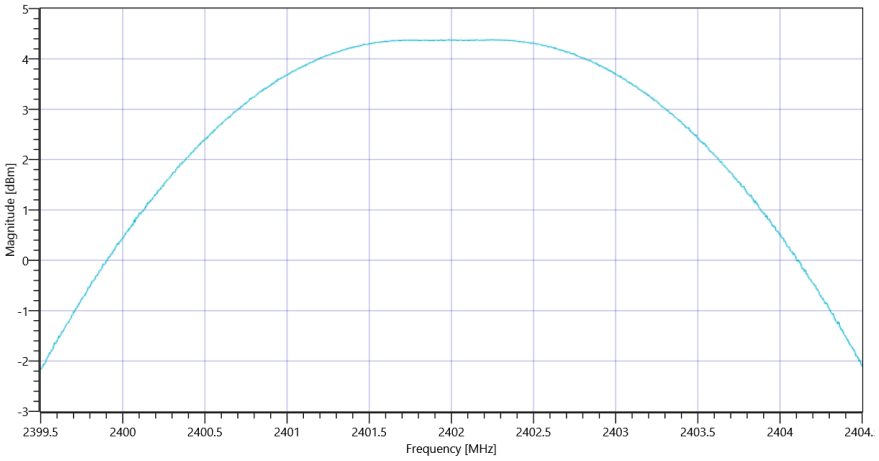
| Test Equipment |
|---|
| Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103170,3.60 |
| Switch matrix,CTCadvanced,RSM-1 NI DAQ,31534892,NI |

## Test at TX 2402 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.41 | dBm | INFO |
| Ref. Frequency | --- | --- | 2402.200 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 14.41 \| 10.16 \| 20 |
| Start [MHz] \| Stop [MHz] | 2399.500 \| 2404.500 |
| RBW [MHz] \| VBW [MHz] | 3.000000 \| 3.000000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 1000 \| 10 \| 1001 \| SWE |

| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Peak Power | --- | --- | 4.39 | dBm | Info |
| Peak Power | --- | --- | 2.747894 | mW | Info |
| Frequency at Peak | --- | --- | 2402.24 | MHz | Info |



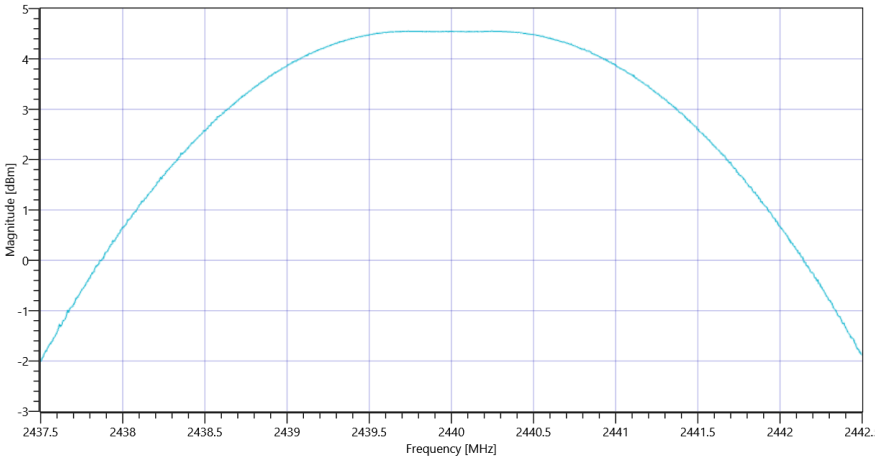

*Common2G4 Peak OP 3MHz-3MHz ~ BT LE 1 Msps*

## Test at TX 2440 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.58 | dBm | INFO |
| Ref. Frequency | --- | --- | 2440.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 14.58 \| 10.24 \| 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 | --- | --- | 4.55 | dBm | Info |
| Peak Power | --- | --- | 2.851018 | mW | Info |
| Frequency at Peak | --- | --- | 2439.72 | MHz | Info |



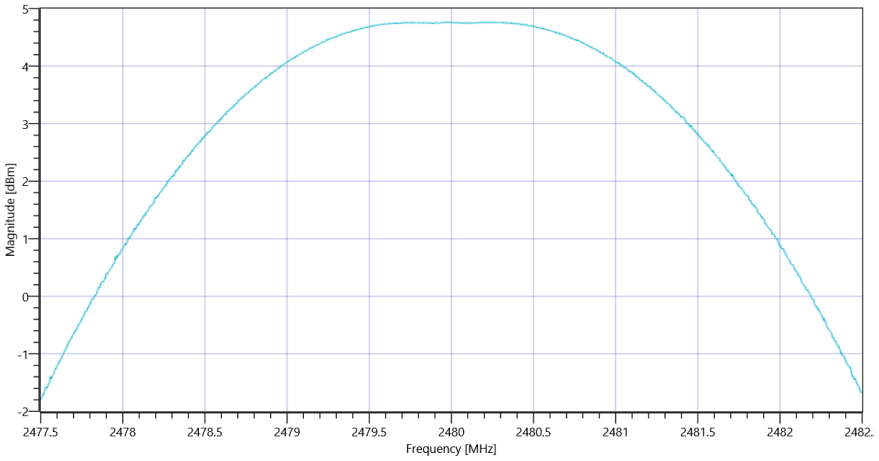

*Common2G4 Peak OP 3MHz-3MHz ~ BT LE 1 Msps*

## Test at TX 2480 MHz

| RESULT: Reference Power cond. | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Ref. Power 1MHz/1MHz cond. | --- | --- | 4.80 | dBm | INFO |
| Ref. Frequency | --- | --- | 2480.300 | MHz | INFO |

| READ SA SETTINGS: | |
|---|---|
| RefLevel [dBm] \| RefLevelOffset [dB] \| InpAtt [dB] | 14.80 \| 10.3 \| 20 |
| Start [MHz] \| Stop [MHz] | 2477.500 \| 2482.500 |
| RBW [MHz] \| VBW [MHz] | 3.000000 \| 3.000000 |
| Detector \| TraceMode | POS \| MAXH |
| Sweep: Time [ms] \| Count \| Points per Section \| Type | 1000 \| 10 \| 1001 \| SWE |

| RESULT | | | | | |
|---|---|---|---|---|---|
| Test Description | Lower Limit | Upper Limit | Measured | Unit | Verdict |
| Peak Power | --- | --- | 4.77 | dBm | Info |
| Peak Power | --- | --- | 2.999163 | mW | Info |
| Frequency at Peak | --- | --- | 2479.965 | MHz | Info |




*Common2G4 Peak OP 3MHz-3MHz ~ BT LE 1 Msps*

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

- END OF DOCUMENT -