

Conducted test results

No.23-1-0068401T002a-A6

July 27, 2023

Test Standard(s) FCC 15.247
 FCC 15.247, ISED RSS247

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Authorized

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

References

| | |
|-----------------------------------|---|
| TC start | 25.07.2023 15:25:09 |
| Ambit temp [°C] humidity [rel%] | 0.0 0 |
| System version | 4.6.0.0 |
| Specification | FCC 15.247 - |
| Method | |
| Description | FCC 15.247 Bandwidth 6dB DTS - BT LE 2 Msps |
| Information | |

EUT Common Settings BT Low Energy

| | |
|--|--|
| Intermodulation Value N | 3 |
| Image Freq. Low Mid High [MHz] | 0 0 0 |
| Power Class | 2 |
| 1 Mbps supported | True TXpayload 255 RXpayload 255 |
| 2 Mbps supported | True TXpayload 255 RXpayload 255 |
| Longrange S8 supported | True TXpayload 255 RXpayload 255 |
| Longrange S2 supported | True TXpayload 255 RXpayload 255 |
| Signaling Settings | WS_USB_RS232 HCI 5 115200 None S1 None Off |
| 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] | 1.2 |
| Switched path | EUT - SignalingUnit - SpectrumAnalyzer |

Equipment

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

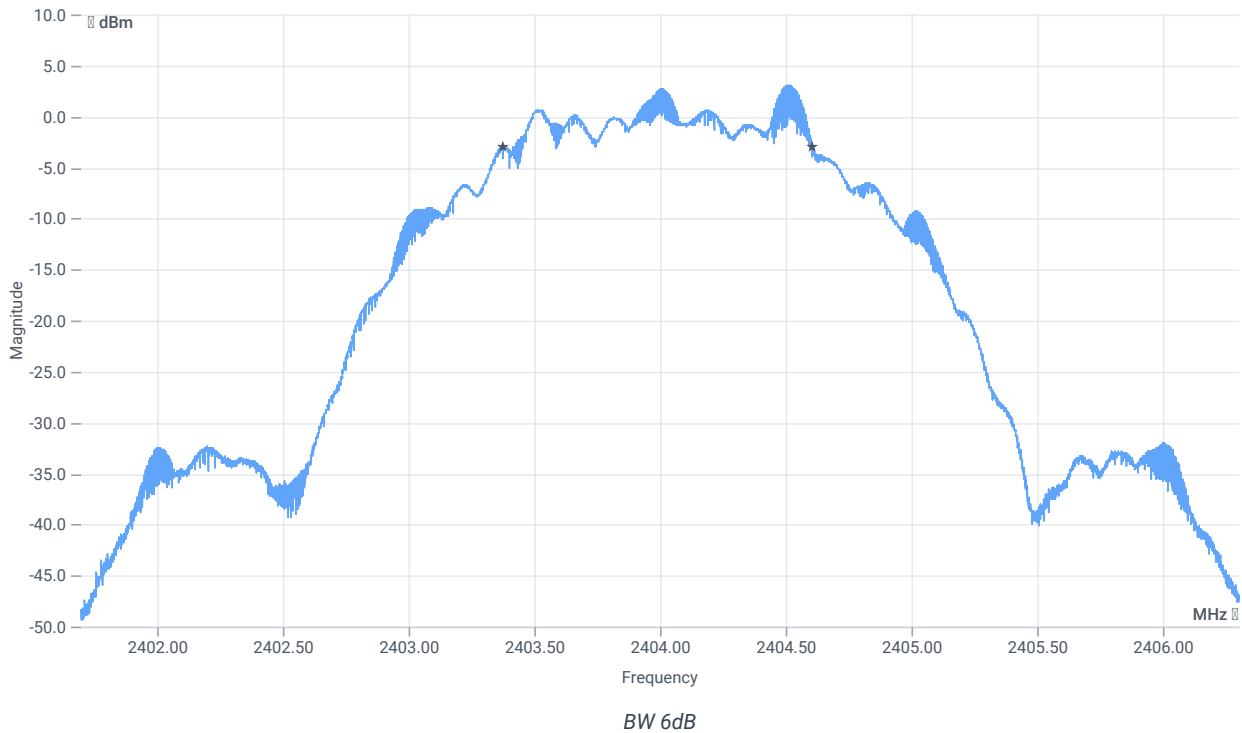
Test at TX 2404 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.24 | dBm | INFO |
| Ref. Frequency | -- | -- | 2404.500 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.24 11.8 15 |
| Start [MHz] Stop [MHz] | 2401.700 2406.300 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |



RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | 500 | -- | 1227 | kHz | PASS |

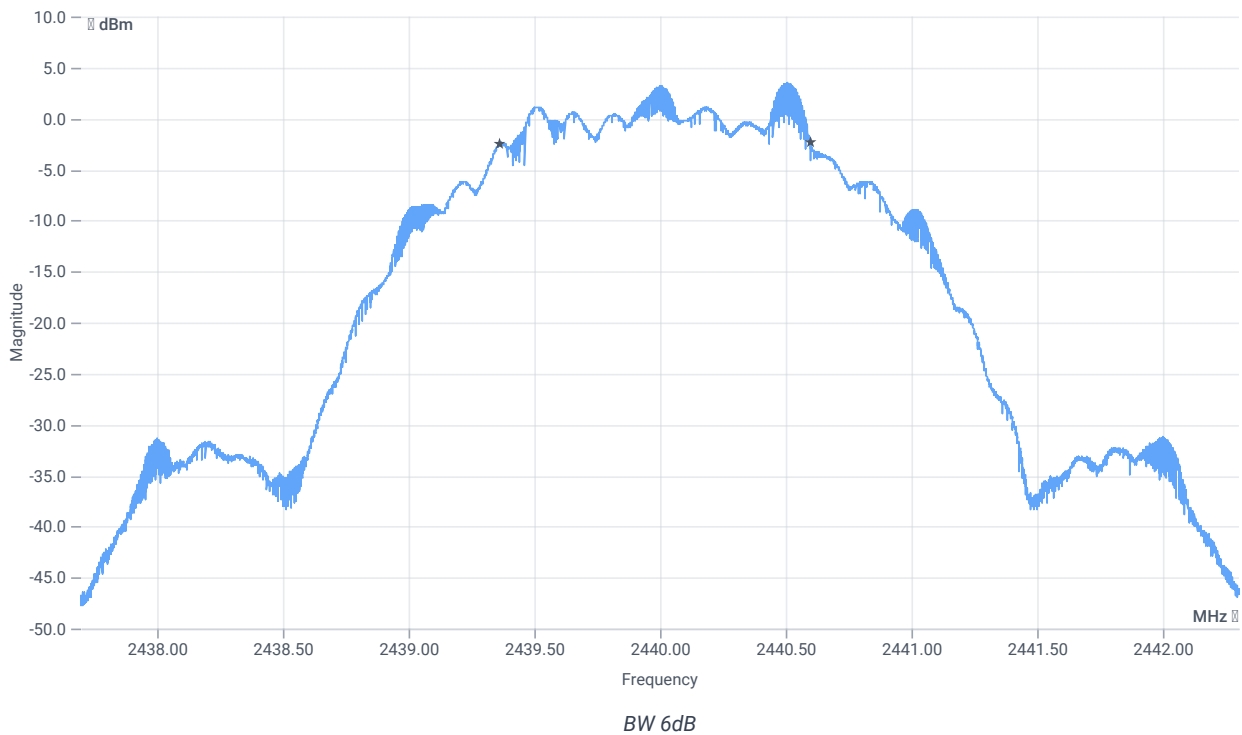
Test at TX 2440 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.72 | dBm | INFO |
| Ref. Frequency | -- | -- | 2440.500 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.72 11.86 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

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | 500 | -- | 1236 | kHz | PASS |

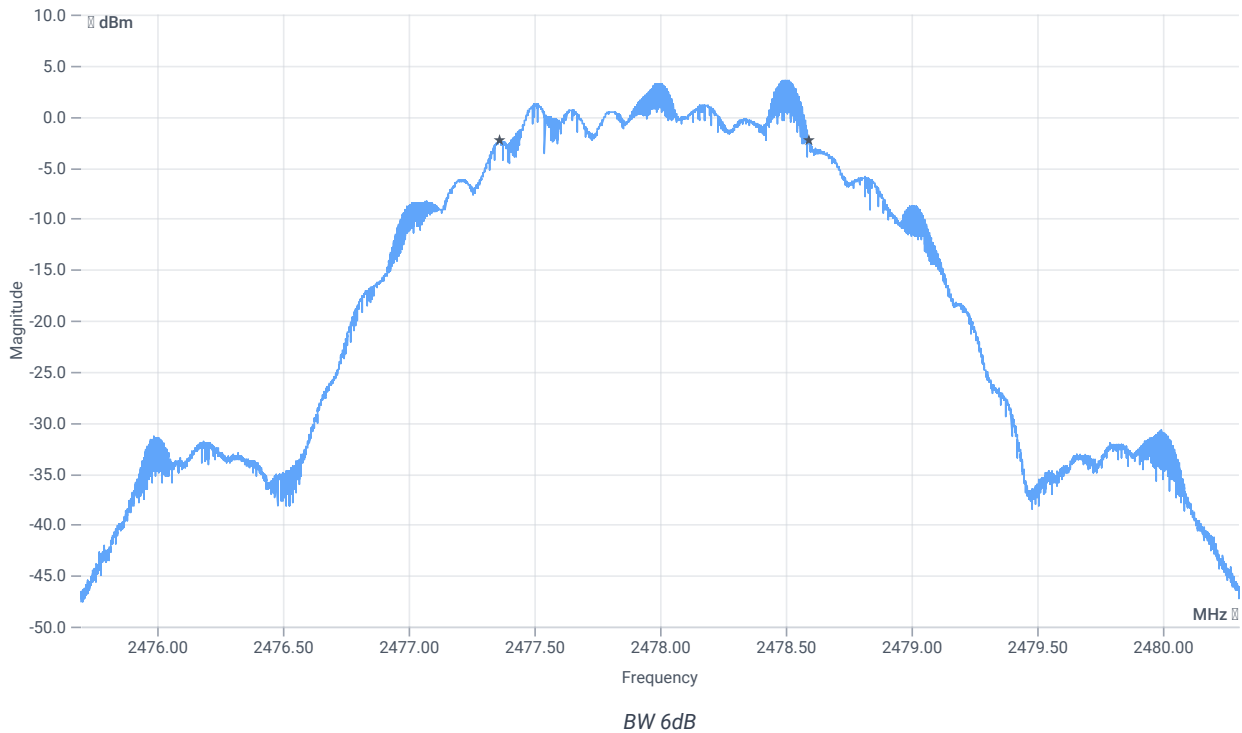
Test at TX 2478 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.80 | dBm | INFO |
| Ref. Frequency | -- | -- | 2478.500 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.80 11.9 15 |
| Start [MHz] Stop [MHz] | 2475.700 2480.300 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |



RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | 500 | -- | 1230 | kHz | PASS |

Verdict

PASS

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

References

| | |
|-----------------------------------|--|
| TC start | 25.07.2023 14:58:17 |
| Ambit temp [°C] humidity [rel%] | 0.0 0 |
| System version | 4.6.0.0 |
| Specification | FCC 15.247 - |
| Method | |
| Description | FCC 15.247 Bandwidth 6dB DTS - BT LE 1 Msp |
| Information | |

EUT Common Settings BT Low Energy

| | |
|--|--|
| Intermodulation Value N | 3 |
| Image Freq. Low Mid High [MHz] | 0 0 0 |
| Power Class | 2 |
| 1 Mbps supported | True TXpayload 255 RXpayload 255 |
| 2 Mbps supported | True TXpayload 255 RXpayload 255 |
| Longrange S8 supported | True TXpayload 255 RXpayload 255 |
| Longrange S2 supported | True TXpayload 255 RXpayload 255 |
| Signaling Settings | WS_USB_RS232 HCI 5 115200 None S1 None Off |
| 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] | 1.2 |
| Switched path | EUT - SignalingUnit - SpectrumAnalyzer |

Equipment

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

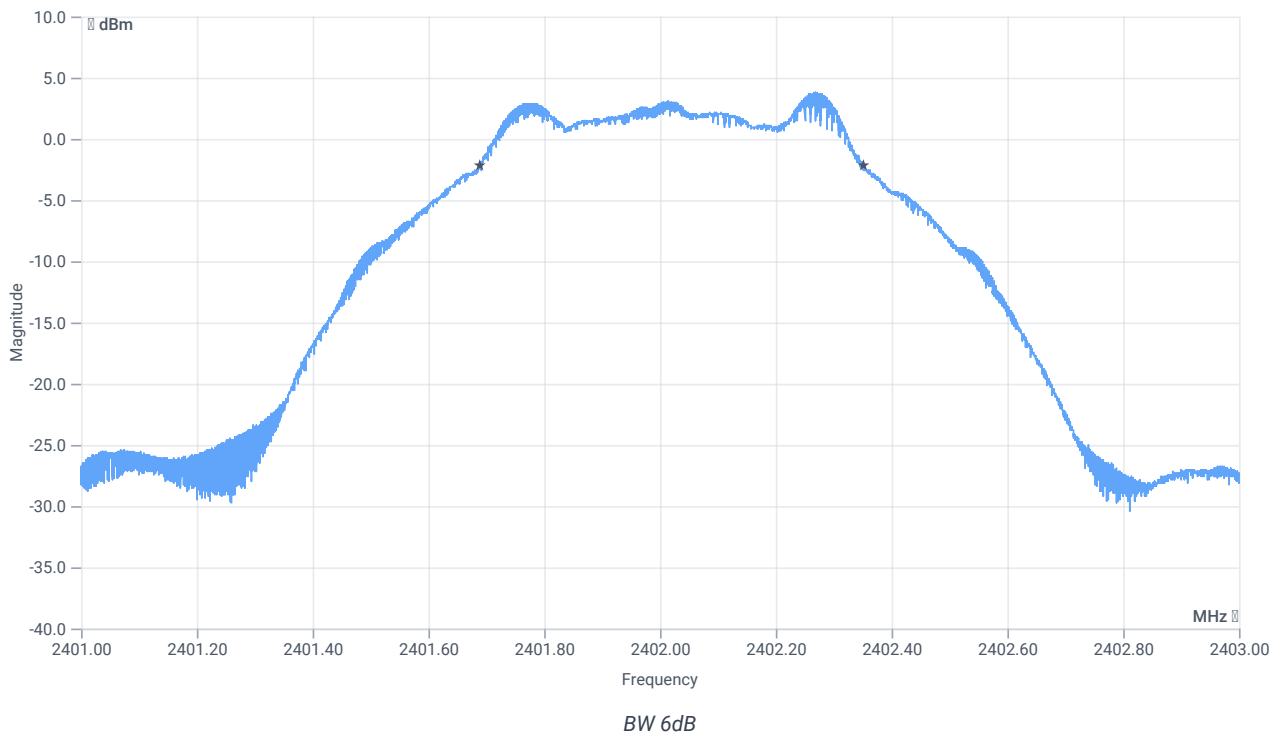
Test at TX 2402 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 3.97 | dBm | INFO |
| Ref. Frequency | -- | -- | 2402.200 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 8.97 11.79 15 |
| Start [MHz] Stop [MHz] | 2401.000 2403.000 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |



RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | 500 | -- | 663 | kHz | PASS |

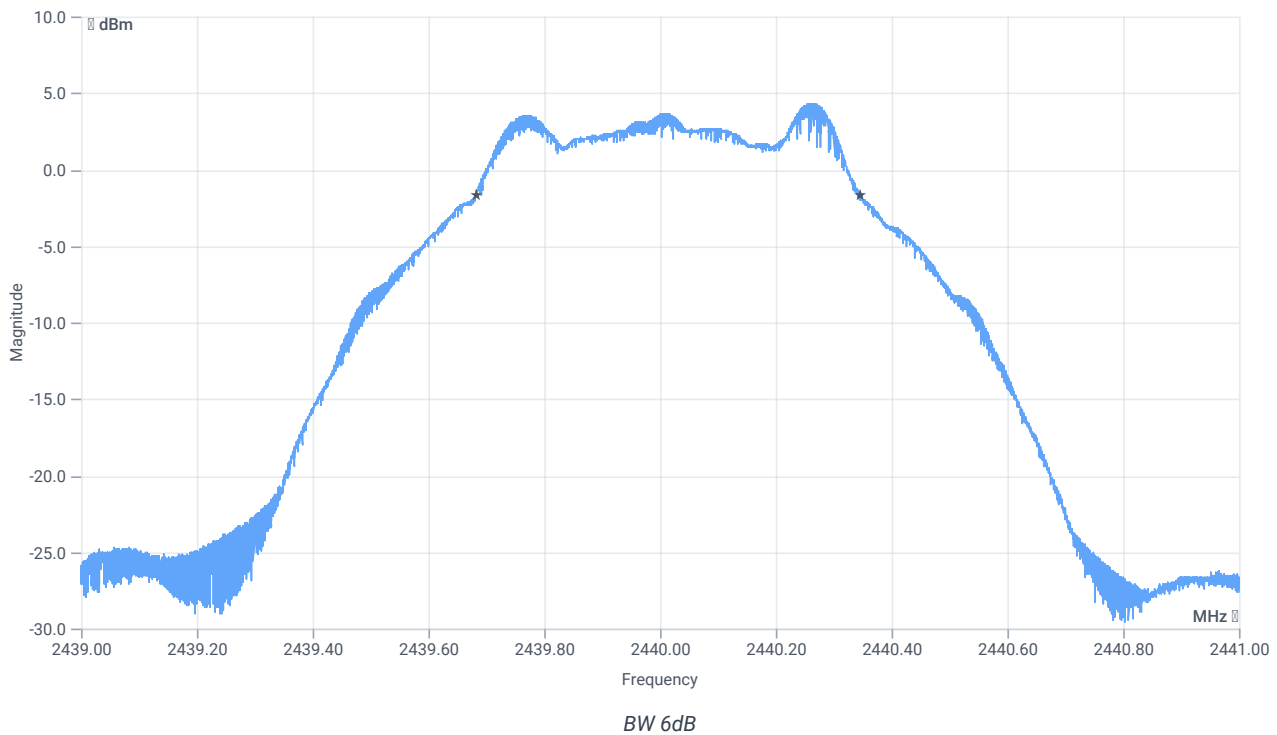
Test at TX 2440 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.46 | dBm | INFO |
| Ref. Frequency | -- | -- | 2440.300 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.46 11.86 15 |
| Start [MHz] Stop [MHz] | 2439.000 2441.000 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |



RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | 500 | -- | 664 | kHz | PASS |

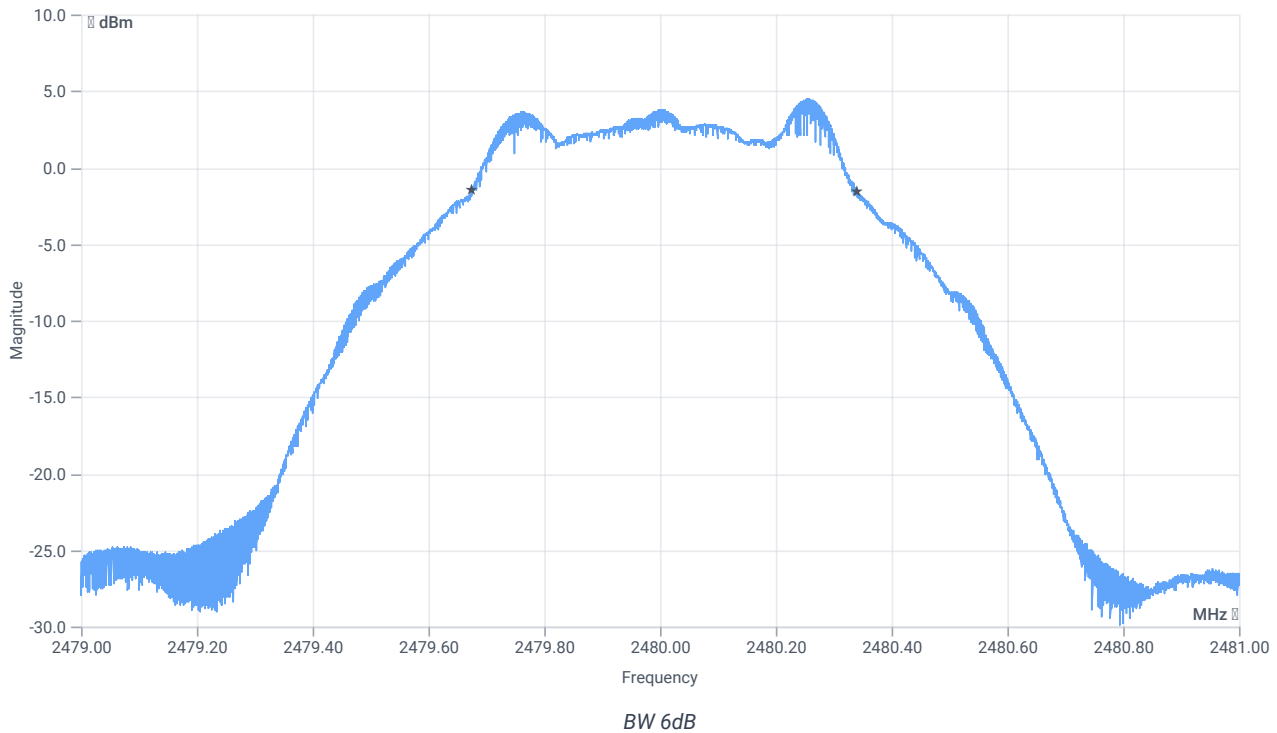
Test at TX 2480 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.55 | dBm | INFO |
| Ref. Frequency | -- | -- | 2480.300 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.55 11.91 15 |
| Start [MHz] Stop [MHz] | 2479.000 2481.000 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |



RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | 500 | -- | 663 | kHz | PASS |

Verdict

PASS

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

References

| | |
|-----------------------------------|--|
| TC start | 25.07.2023 15:28:19 |
| Ambit temp [°C] humidity [rel%] | 0.0 0 |
| System version | 4.6.0.0 |
| Specification | FCC 15.247, ISED RSS247 - |
| Method | |
| Description | FCC 15.247 Bandwidth 99PCT-20dB DTS - BT LE 2 Msps |
| Information | |

EUT Common Settings BT Low Energy

| | |
|--|--|
| Intermodulation Value N | 3 |
| Image Freq. Low Mid High [MHz] | 0 0 0 |
| Power Class | 2 |
| 1 Mbps supported | True TXpayload 255 RXpayload 255 |
| 2 Mbps supported | True TXpayload 255 RXpayload 255 |
| Longrange S8 supported | True TXpayload 255 RXpayload 255 |
| Longrange S2 supported | True TXpayload 255 RXpayload 255 |
| Signaling Settings | WS_USB_RS232 HCI 5 115200 None S1 None Off |
| 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] | 1.2 |
| Switched path | EUT - SignalingUnit - SpectrumAnalyzer |

Equipment

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

Equipment

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

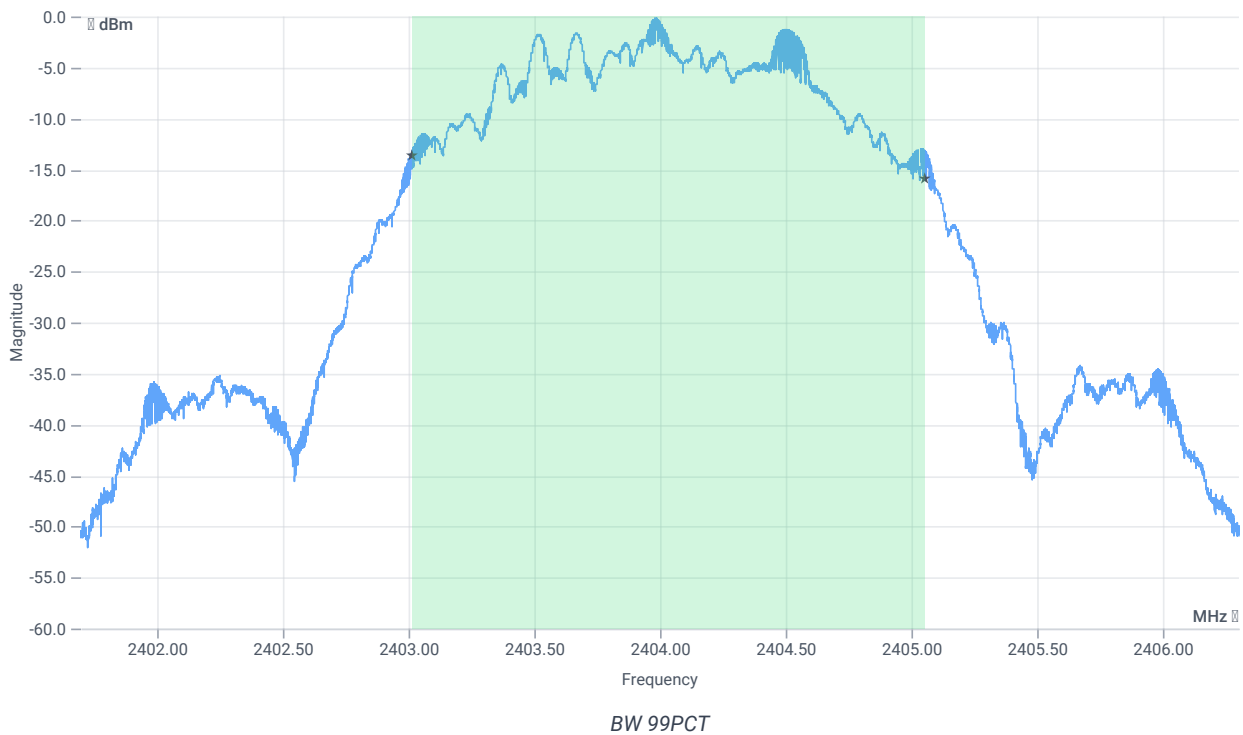
Test at TX 2404 MHz

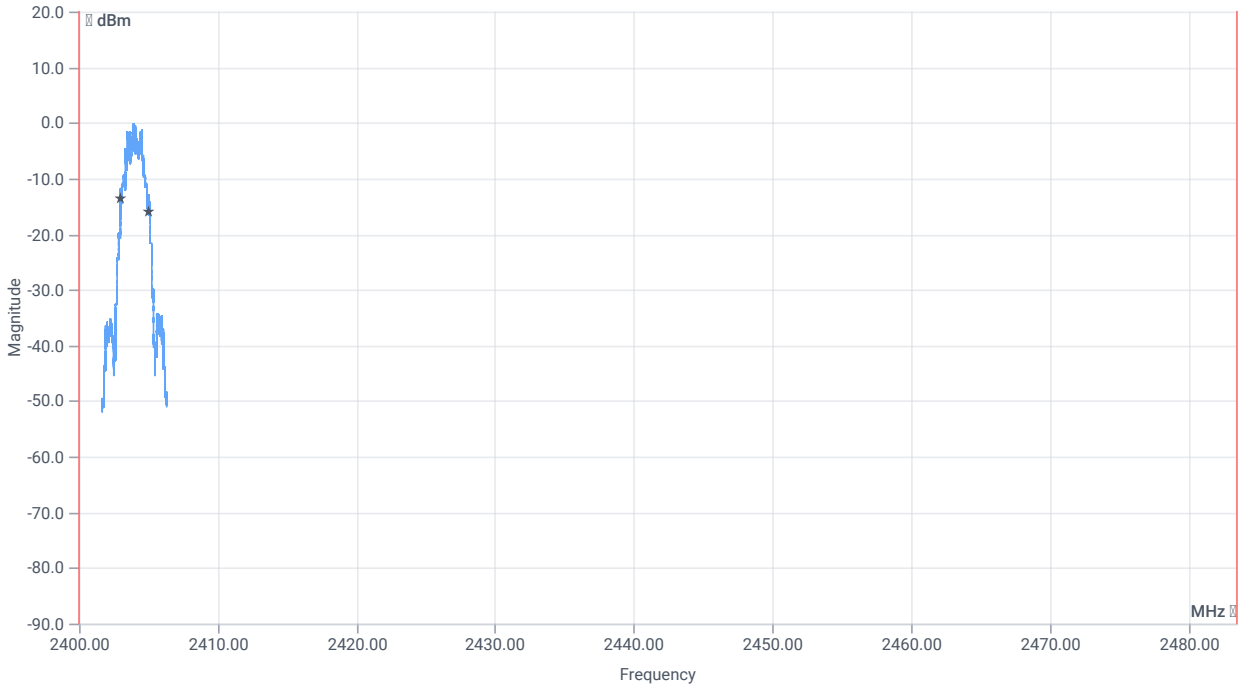
RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.34 | dBm | INFO |
| Ref. Frequency | -- | -- | 2404.500 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.34 11.8 15 |
| Start [MHz] Stop [MHz] | 2401.700 2406.300 |
| RBW [MHz] VBW [MHz] | 0.050000 0.200000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |

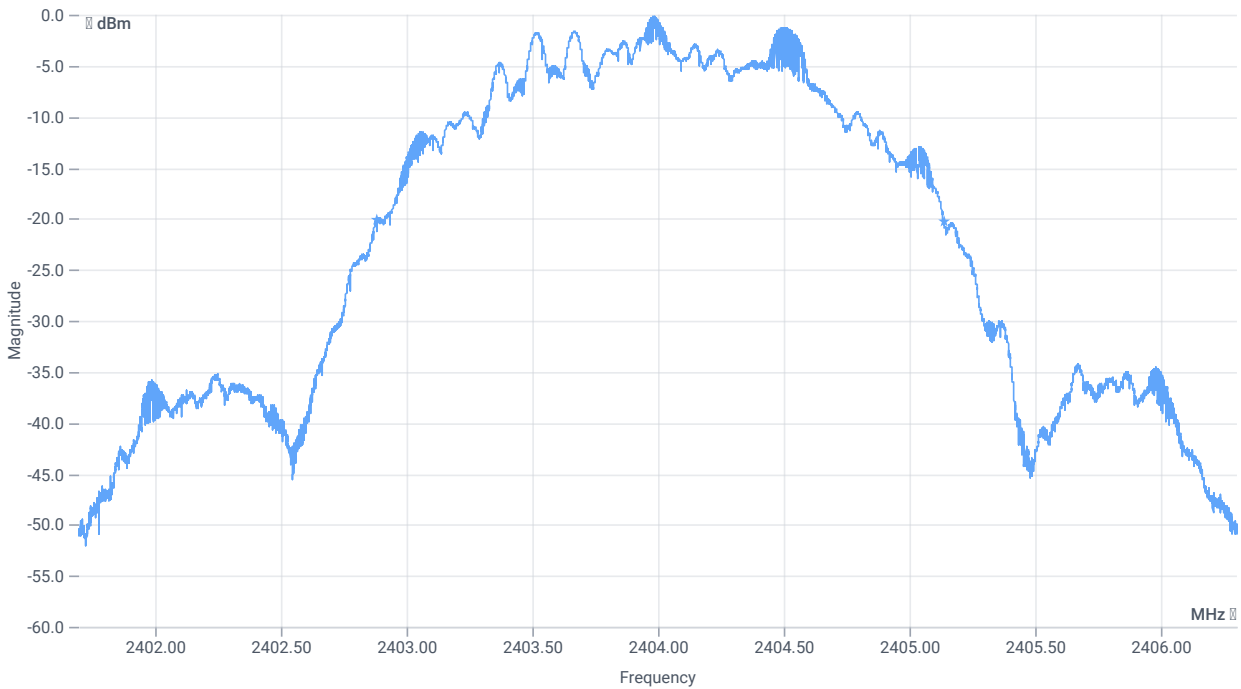




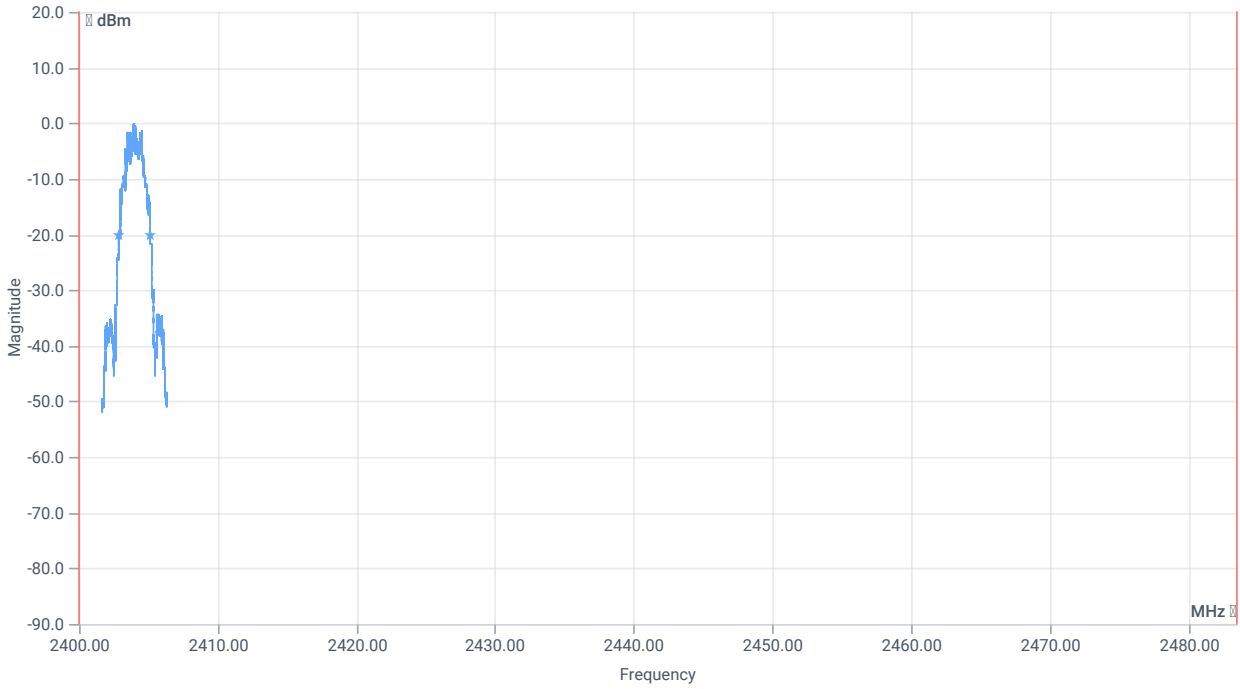
BW within Band 99PCT

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------|-------------|-------------|-----------|------|---------|
| Bandwidth 99% | -- | -- | 2043.000 | kHz | INFO |
| T1 99% | 2400.000000 | -- | 2403.0111 | MHz | PASS |
| T2 99% | -- | 2483.500000 | 2405.0542 | MHz | PASS |



BW 20dB



BW within Band 20dB

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|----------------|-------------|-------------|-----------|------|---------|
| Bandwidth 20dB | -- | -- | 2256 | kHz | INFO |
| T1 20DB | 2400.000000 | -- | 2402.8799 | MHz | PASS |
| T2 20dB | -- | 2483.500000 | 2405.1357 | MHz | PASS |

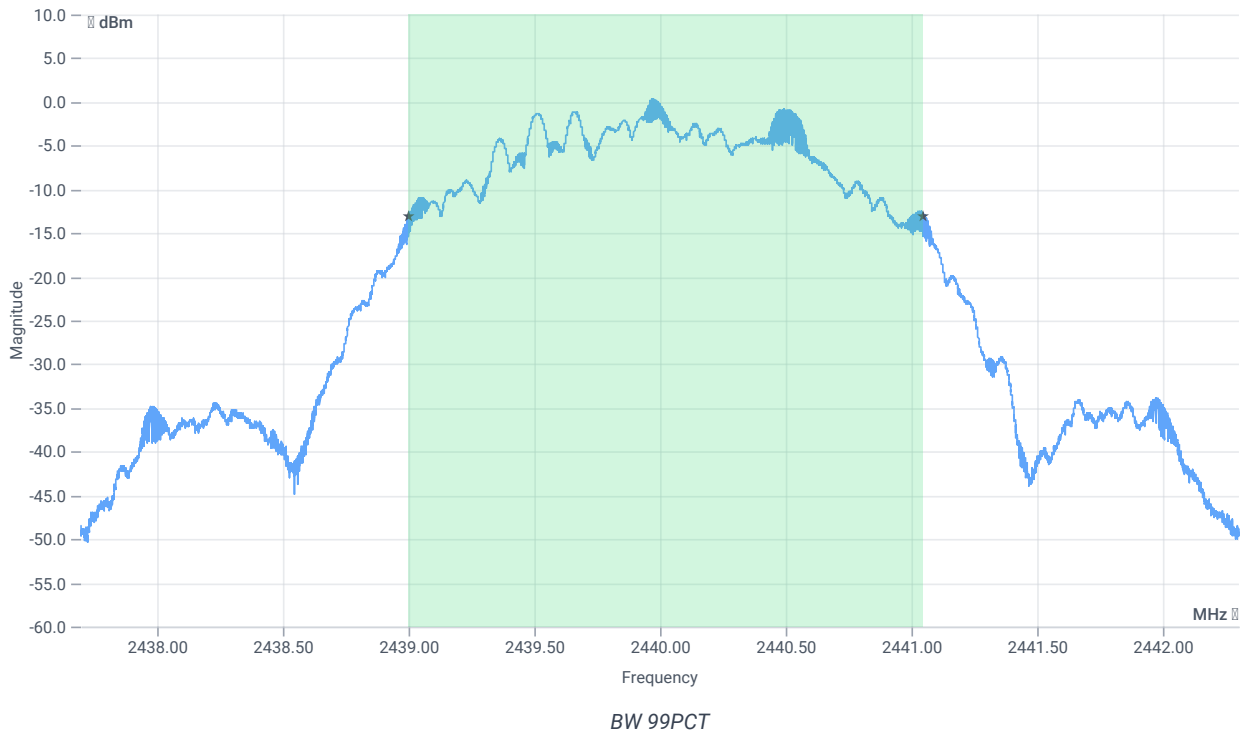
Test at TX 2440 MHz

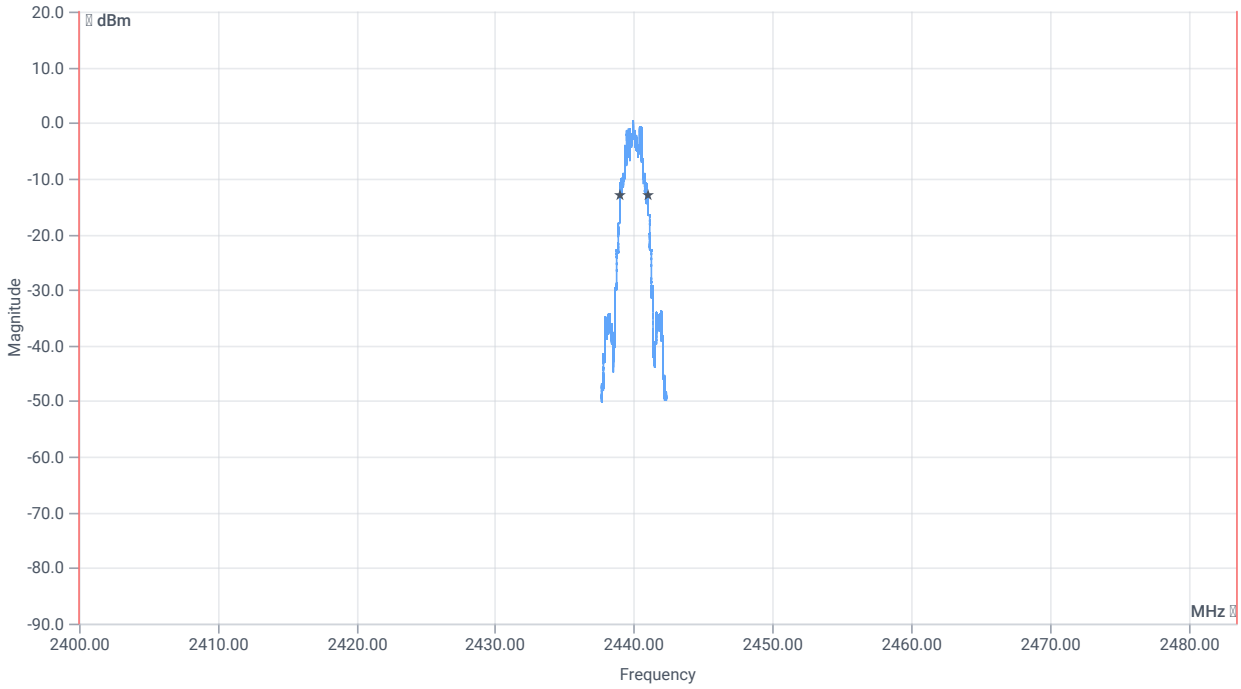
RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.76 | dBm | INFO |
| Ref. Frequency | -- | -- | 2440.500 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.76 11.86 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 |

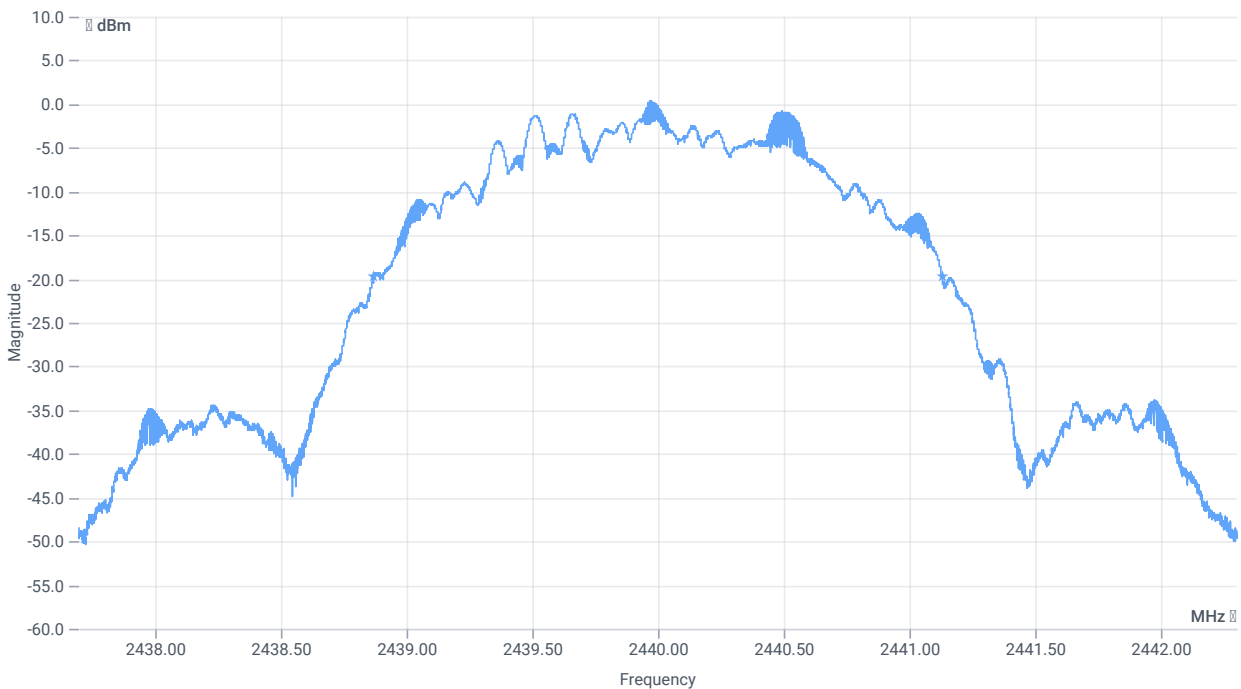




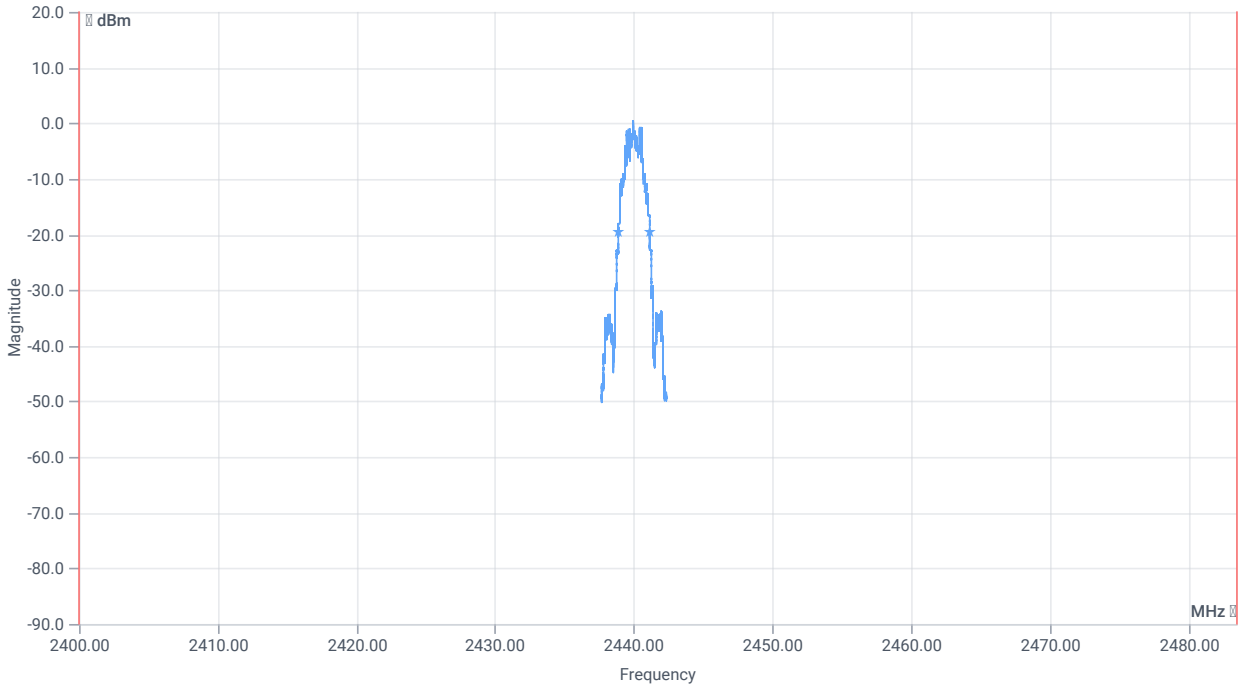
BW within Band 99PCT

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------|-------------|-------------|-----------|------|---------|
| Bandwidth 99% | -- | -- | 2044.000 | kHz | INFO |
| T1 99% | 2400.000000 | -- | 2439.0033 | MHz | PASS |
| T2 99% | -- | 2483.500000 | 2441.0478 | MHz | PASS |



BW 20dB



BW within Band 20dB

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|----------------|-------------|-------------|-----------|------|---------|
| Bandwidth 20dB | -- | -- | 2256 | kHz | INFO |
| T1 20dB | 2400.000000 | -- | 2438.8725 | MHz | PASS |
| T2 20dB | -- | 2483.500000 | 2441.1284 | MHz | PASS |

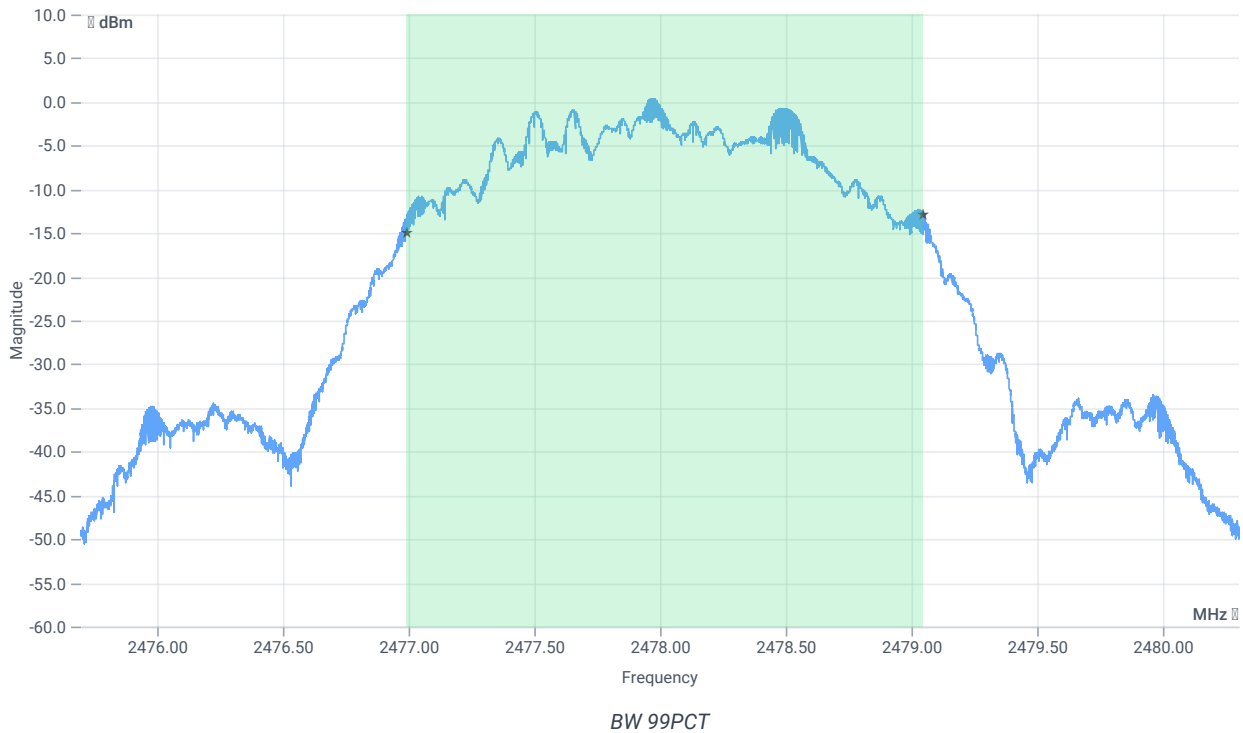
Test at TX 2478 MHz

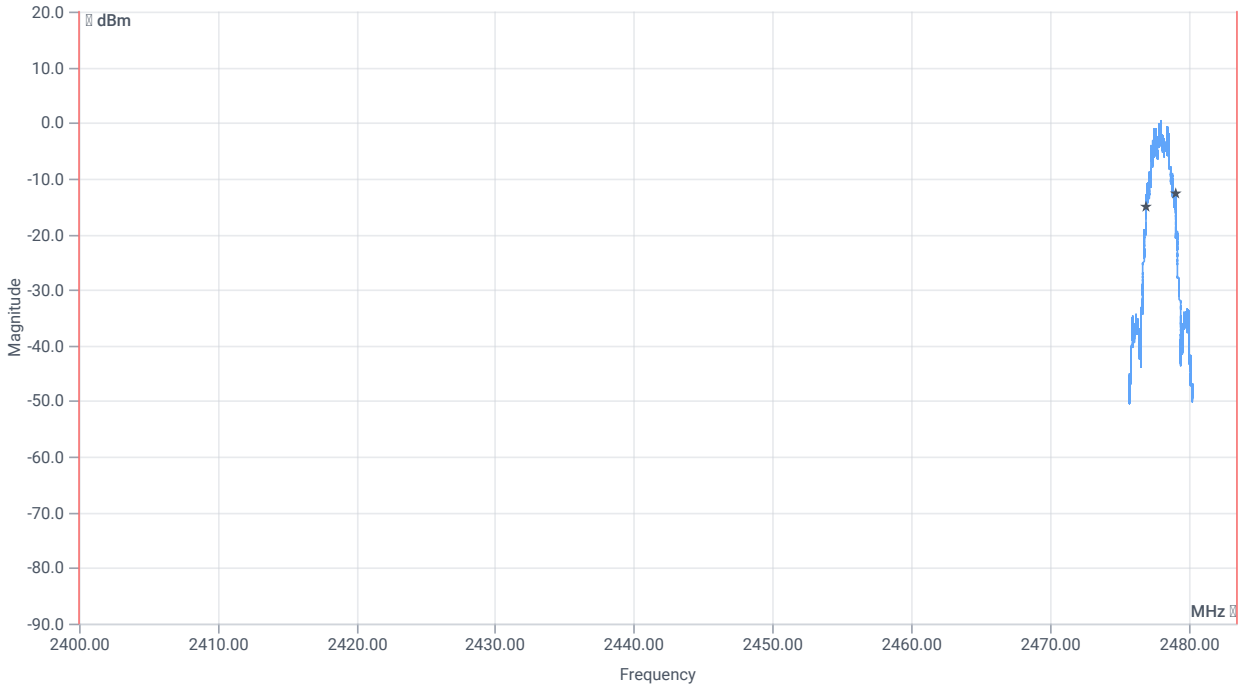
RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.80 | dBm | INFO |
| Ref. Frequency | -- | -- | 2478.500 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.80 11.9 15 |
| Start [MHz] Stop [MHz] | 2475.700 2480.300 |
| RBW [MHz] VBW [MHz] | 0.050000 0.200000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |

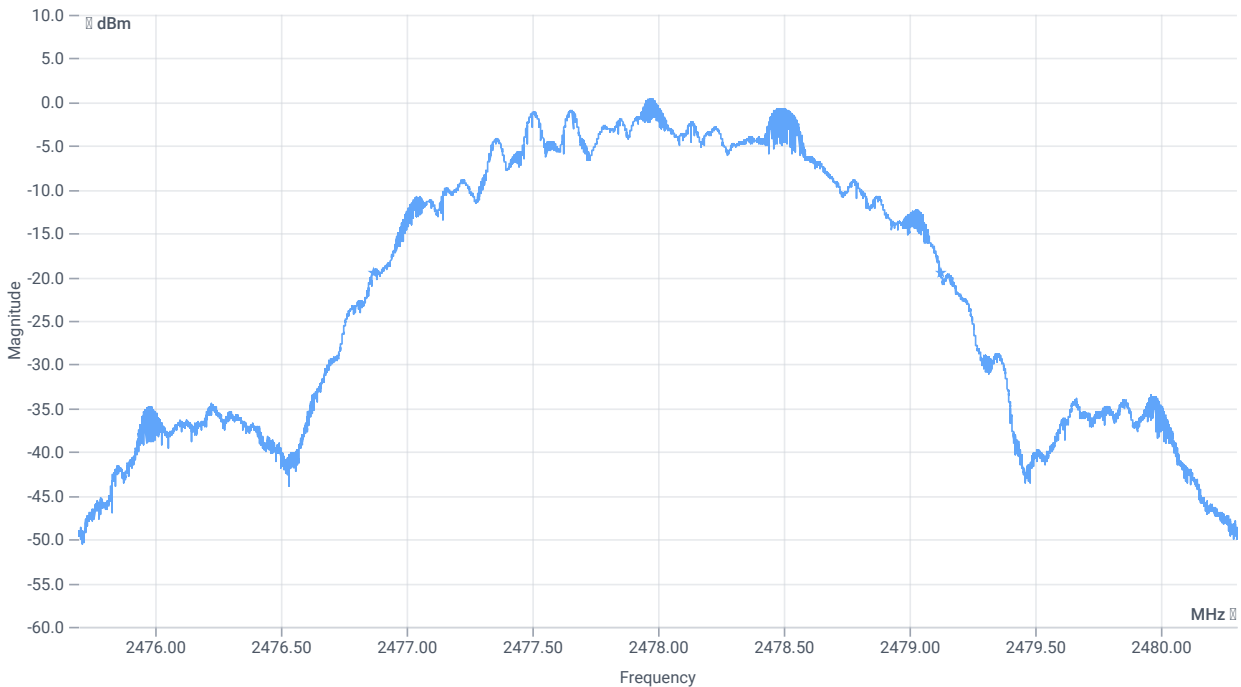




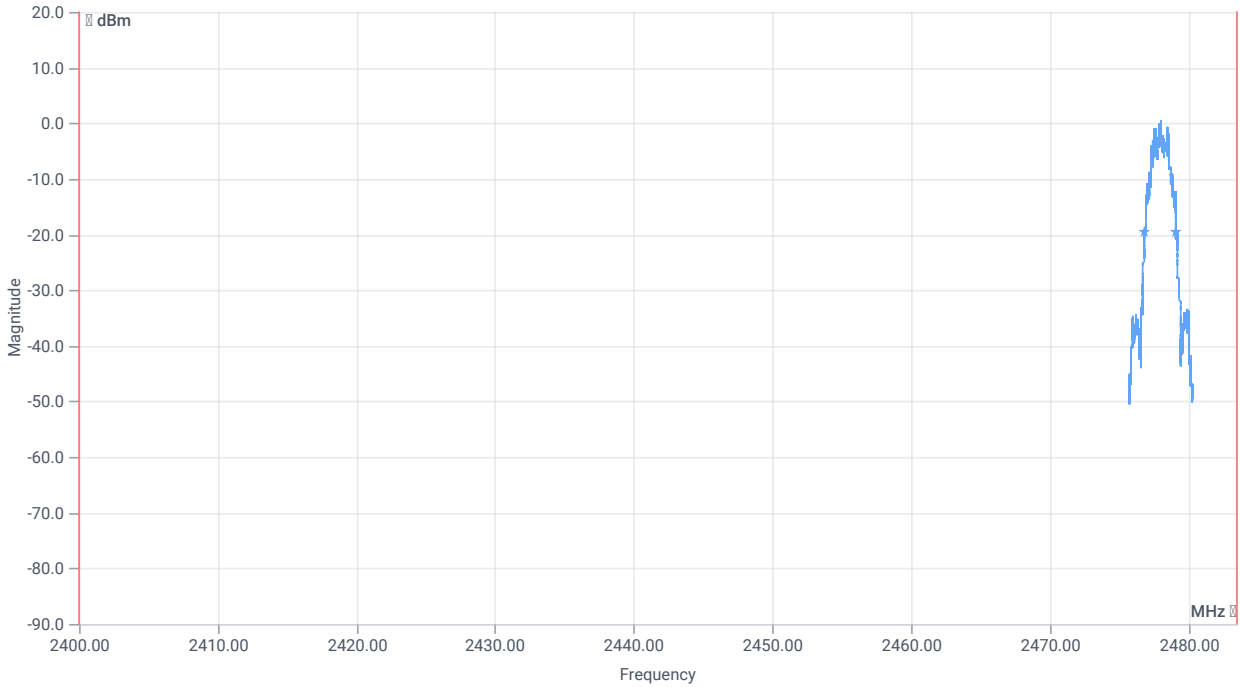
BW within Band 99PCT

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------|-------------|-------------|-----------|------|---------|
| Bandwidth 99% | -- | -- | 2048.000 | kHz | INFO |
| T1 99% | 2400.000000 | -- | 2476.9959 | MHz | PASS |
| T2 99% | -- | 2483.500000 | 2479.0436 | MHz | PASS |



BW 20dB



BW within Band 20dB

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|----------------|-------------|-------------|-----------|------|---------|
| Bandwidth 20dB | -- | -- | 2257 | kHz | INFO |
| T1 20dB | 2400.000000 | -- | 2476.8675 | MHz | PASS |
| T2 20dB | -- | 2483.500000 | 2479.1242 | MHz | PASS |

Verdict

PASS

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

References

| | |
|-----------------------------------|--|
| TC start | 25.07.2023 15:01:26 |
| Ambit temp [°C] humidity [rel%] | 0.0 0 |
| System version | 4.6.0.0 |
| Specification | FCC 15.247, ISED RSS247 - |
| Method | |
| Description | FCC 15.247 Bandwidth 99PCT-20dB DTS - BT LE 1 Msps |
| Information | |

EUT Common Settings BT Low Energy

| | |
|--|--|
| Intermodulation Value N | 3 |
| Image Freq. Low Mid High [MHz] | 0 0 0 |
| Power Class | 2 |
| 1 Mbps supported | True TXpayload 255 RXpayload 255 |
| 2 Mbps supported | True TXpayload 255 RXpayload 255 |
| Longrange S8 supported | True TXpayload 255 RXpayload 255 |
| Longrange S2 supported | True TXpayload 255 RXpayload 255 |
| Signaling Settings | WS_USB_RS232 HCI 5 115200 None S1 None Off |
| 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] | 1.2 |
| Switched path | EUT - SignalingUnit - SpectrumAnalyzer |

Equipment

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

Equipment

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

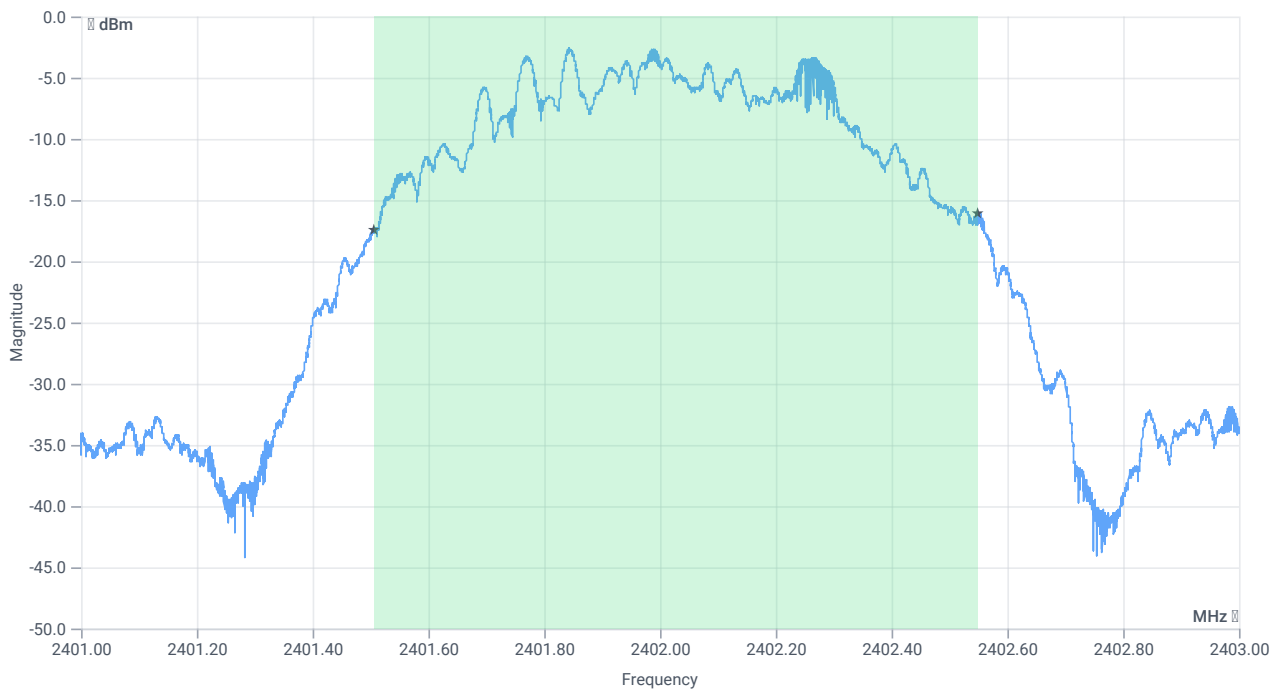
Test at TX 2402 MHz

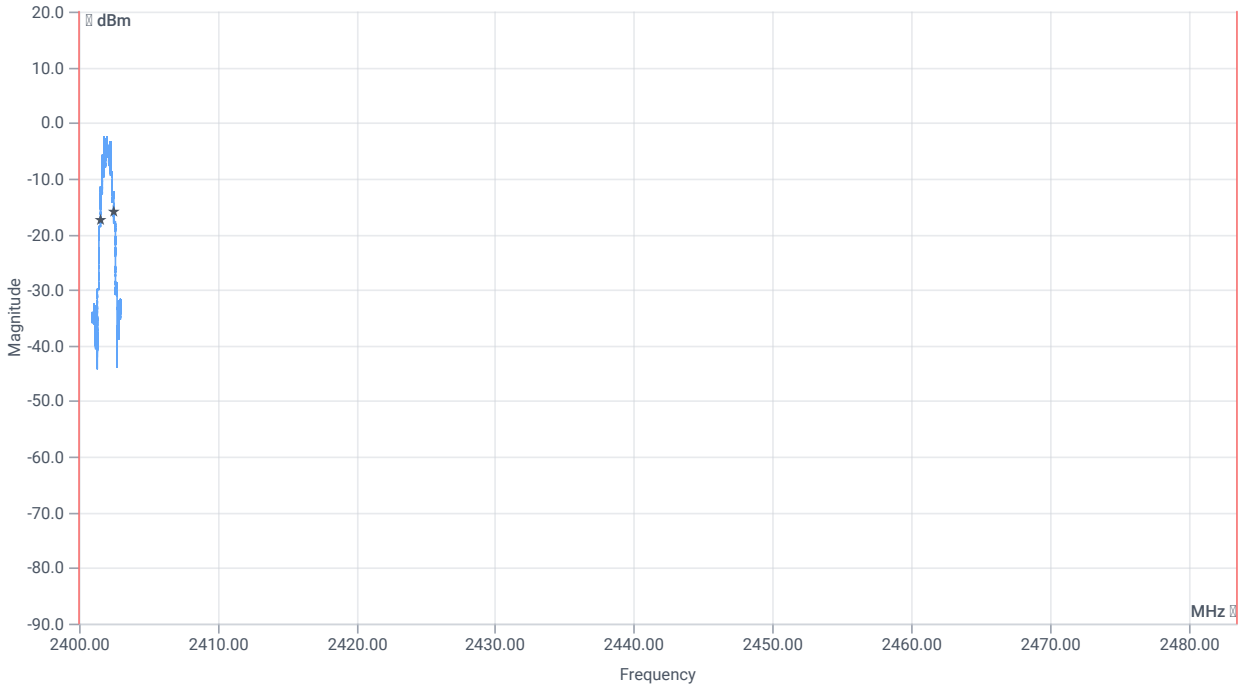
RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 3.93 | dBm | INFO |
| Ref. Frequency | -- | -- | 2402.300 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 8.93 11.79 15 |
| Start [MHz] Stop [MHz] | 2401.000 2403.000 |
| RBW [MHz] VBW [MHz] | 0.020000 0.100000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |

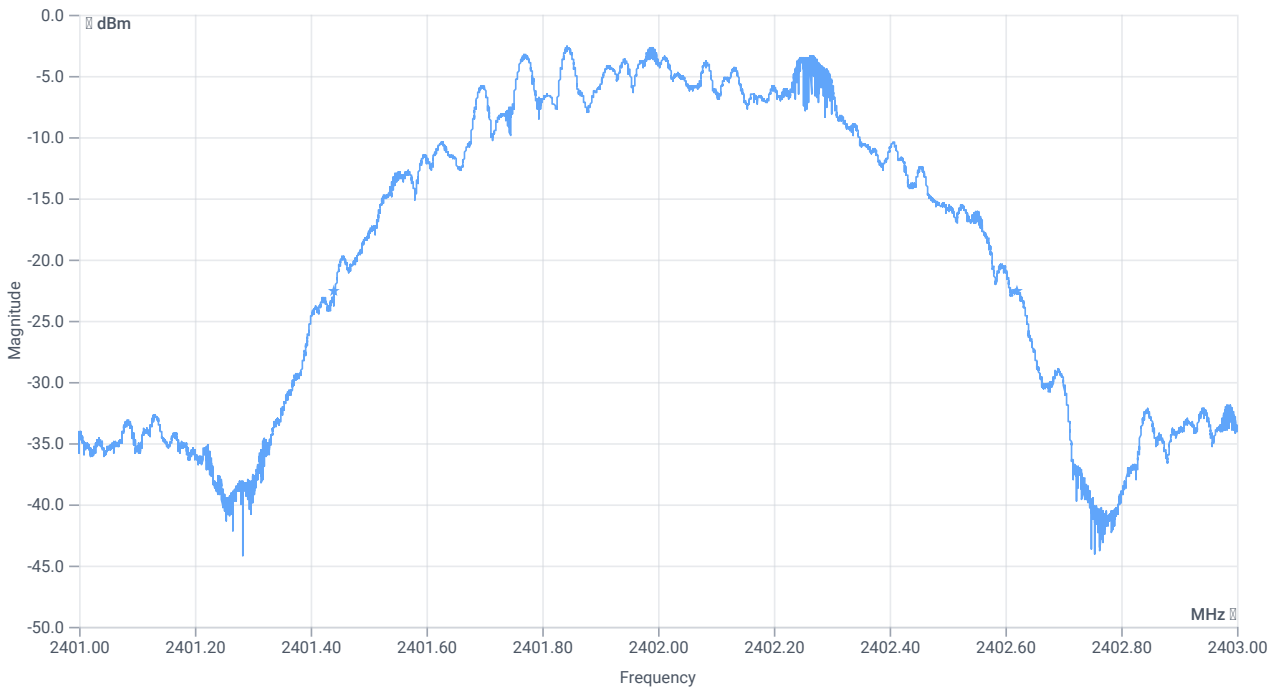




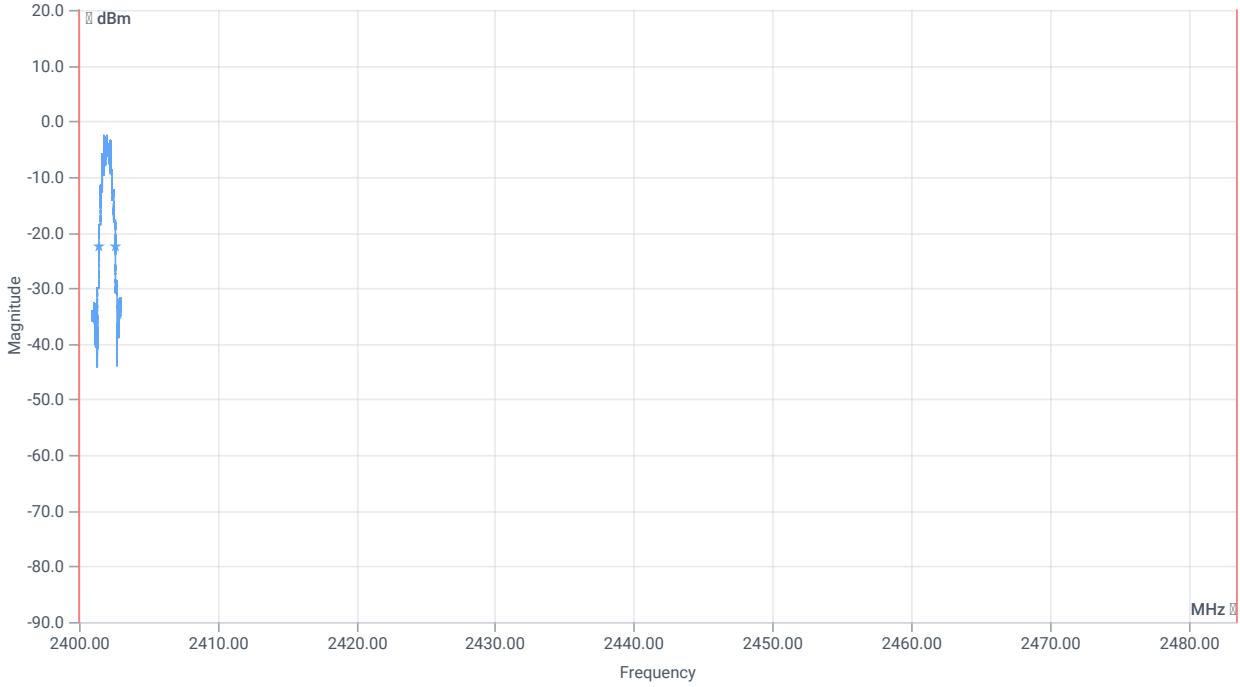
BW within Band 99PCT

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------|-------------|-------------|-----------|------|---------|
| Bandwidth 99% | -- | -- | 1042.000 | kHz | INFO |
| T1 99% | 2400.000000 | -- | 2401.5066 | MHz | PASS |
| T2 99% | -- | 2483.500000 | 2402.5489 | MHz | PASS |



BW 20dB



BW within Band 20dB

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|----------------|-------------|-------------|-----------|------|---------|
| Bandwidth 20dB | -- | -- | 1179 | kHz | INFO |
| T1 20dB | 2400.000000 | -- | 2401.4414 | MHz | PASS |
| T2 20dB | -- | 2483.500000 | 2402.6202 | MHz | PASS |

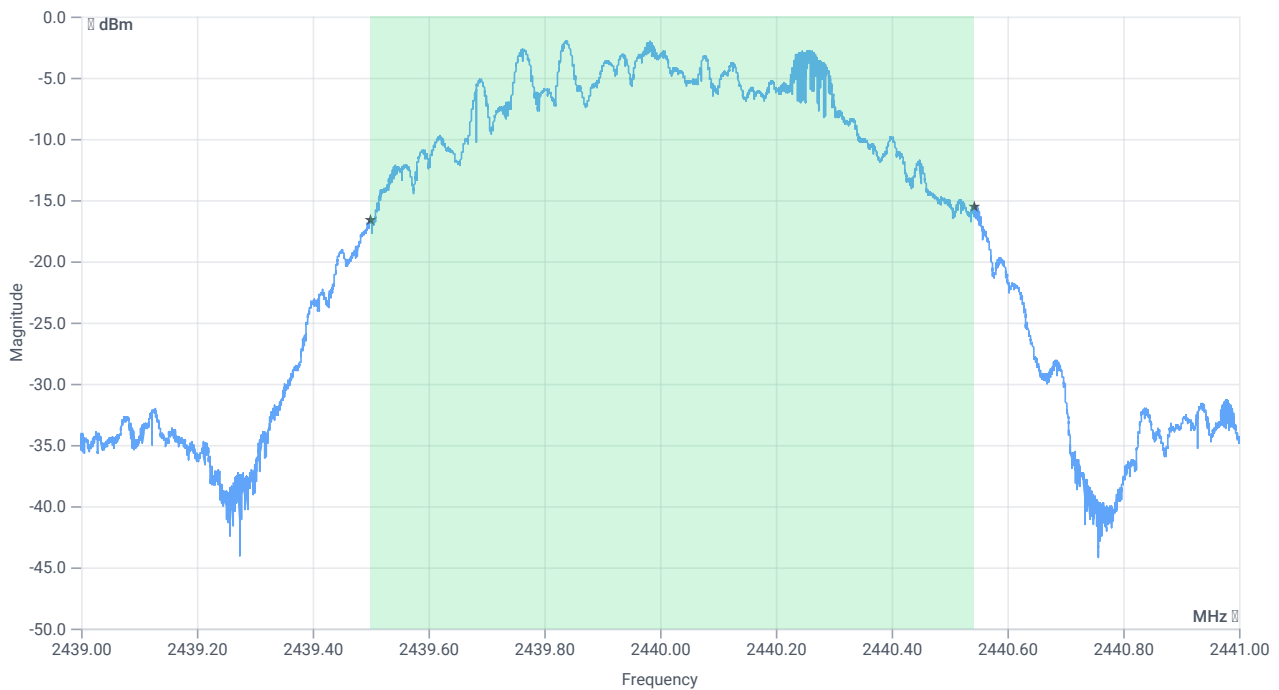
Test at TX 2440 MHz

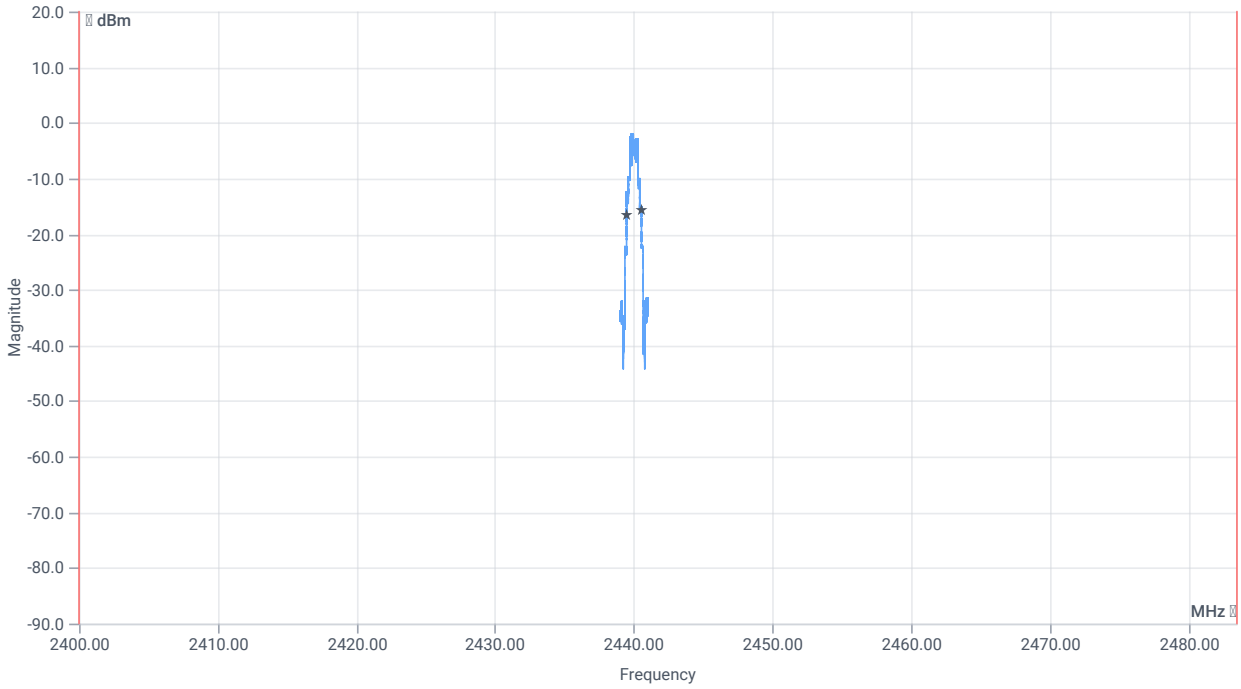
RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.49 | dBm | INFO |
| Ref. Frequency | -- | -- | 2440.200 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.49 11.86 15 |
| Start [MHz] Stop [MHz] | 2439.000 2441.000 |
| RBW [MHz] VBW [MHz] | 0.020000 0.100000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |

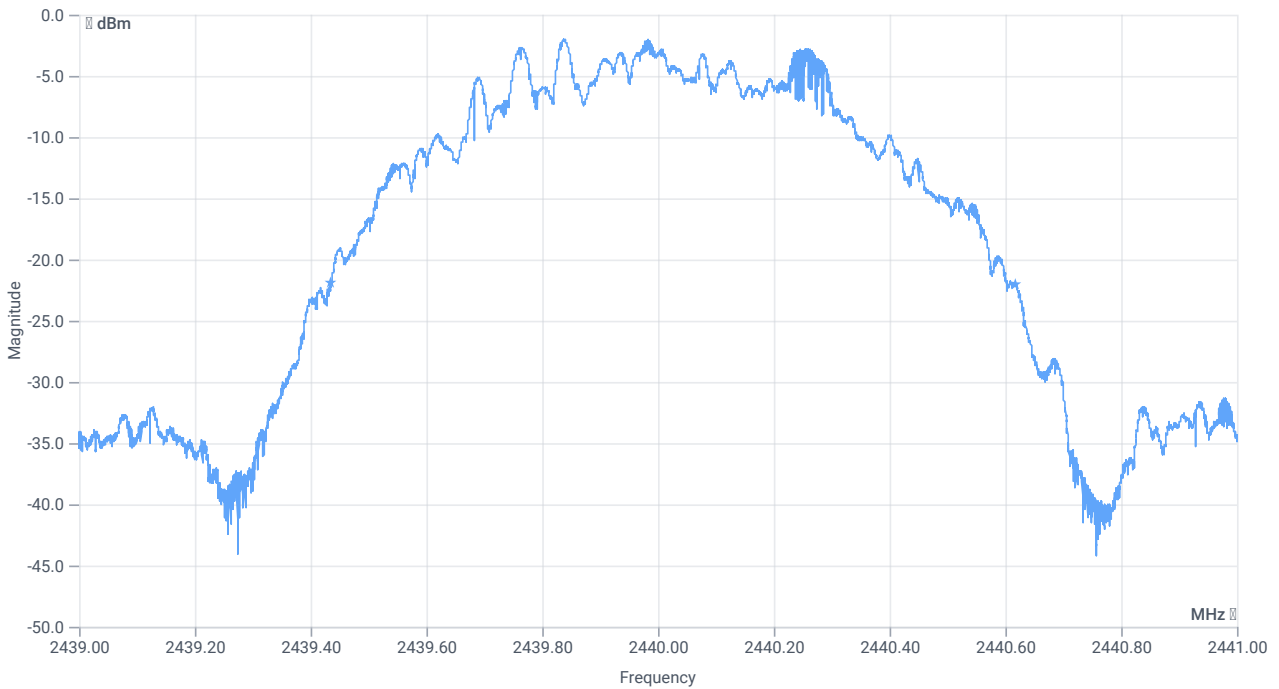




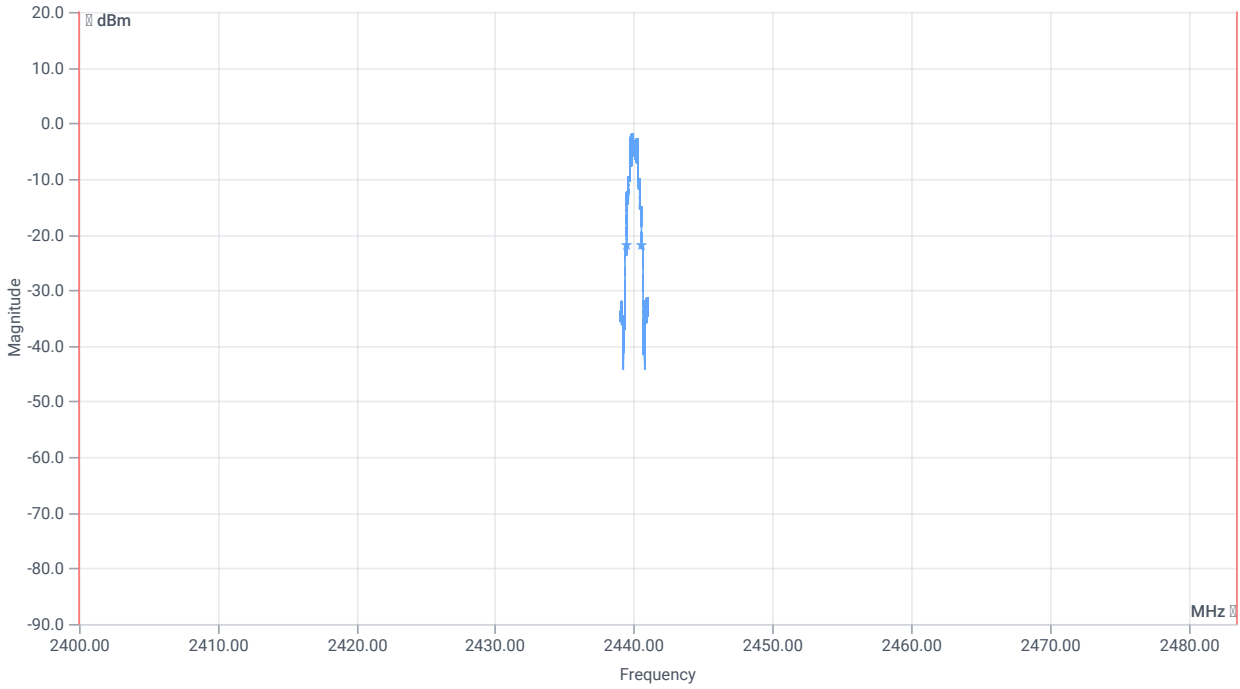
BW within Band 99PCT

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------|-------------|-------------|-----------|------|---------|
| Bandwidth 99% | -- | -- | 1044.000 | kHz | INFO |
| T1 99% | 2400.000000 | -- | 2439.4991 | MHz | PASS |
| T2 99% | -- | 2483.500000 | 2440.5427 | MHz | PASS |



BW 20dB



BW within Band 20dB

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|----------------|-------------|-------------|-----------|------|---------|
| Bandwidth 20dB | -- | -- | 1180 | kHz | INFO |
| T1 20dB | 2400.000000 | -- | 2439.4356 | MHz | PASS |
| T2 20dB | -- | 2483.500000 | 2440.6160 | MHz | PASS |

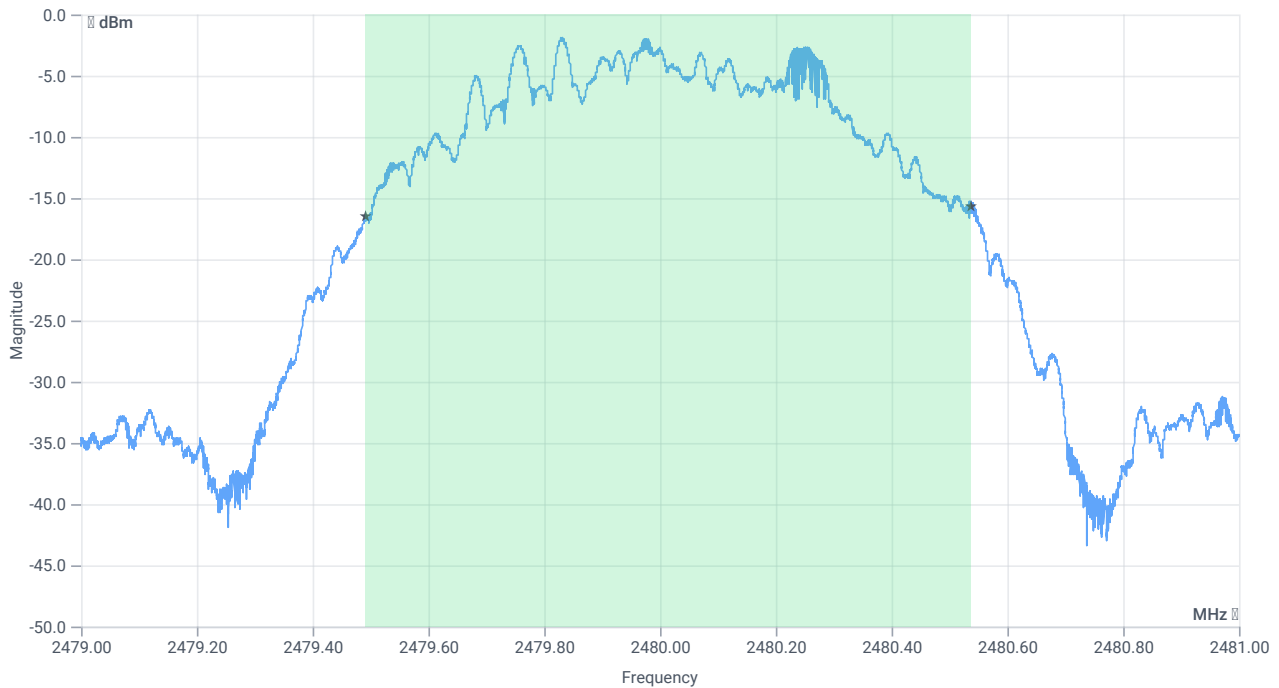
Test at TX 2480 MHz

RESULT: Reference Power cond.

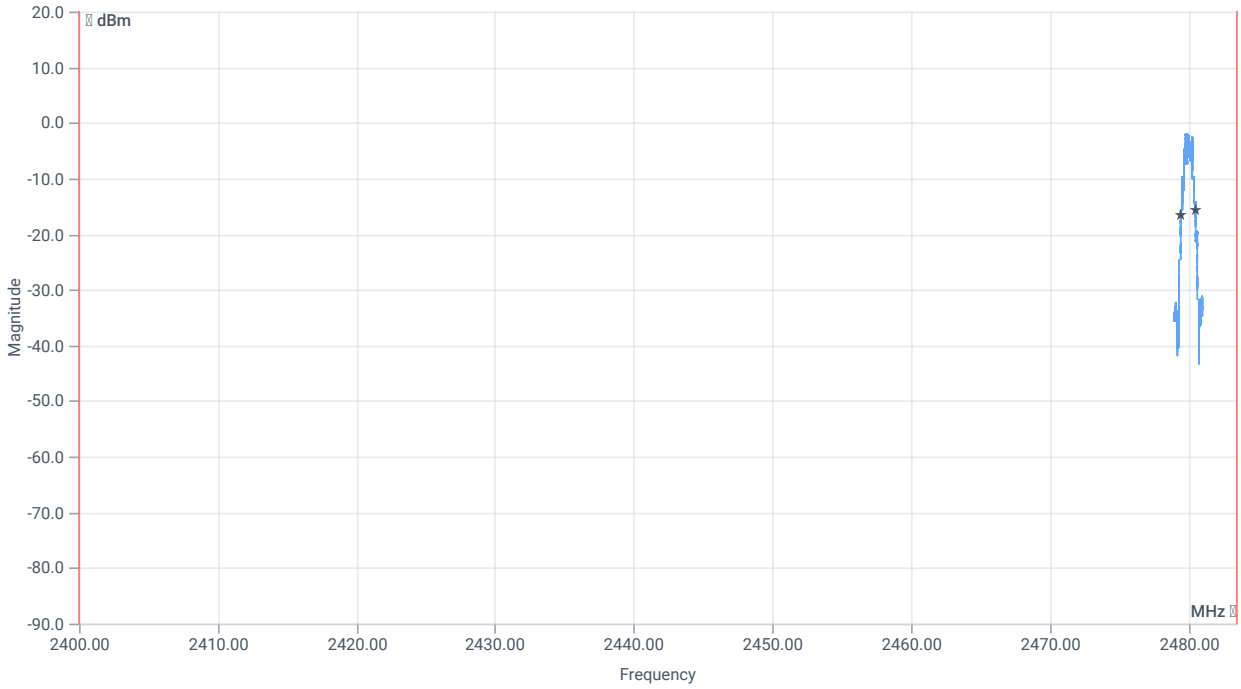
| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.58 | dBm | INFO |
| Ref. Frequency | -- | -- | 2480.200 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.58 11.91 15 |
| Start [MHz] Stop [MHz] | 2479.000 2481.000 |
| RBW [MHz] VBW [MHz] | 0.020000 0.100000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |



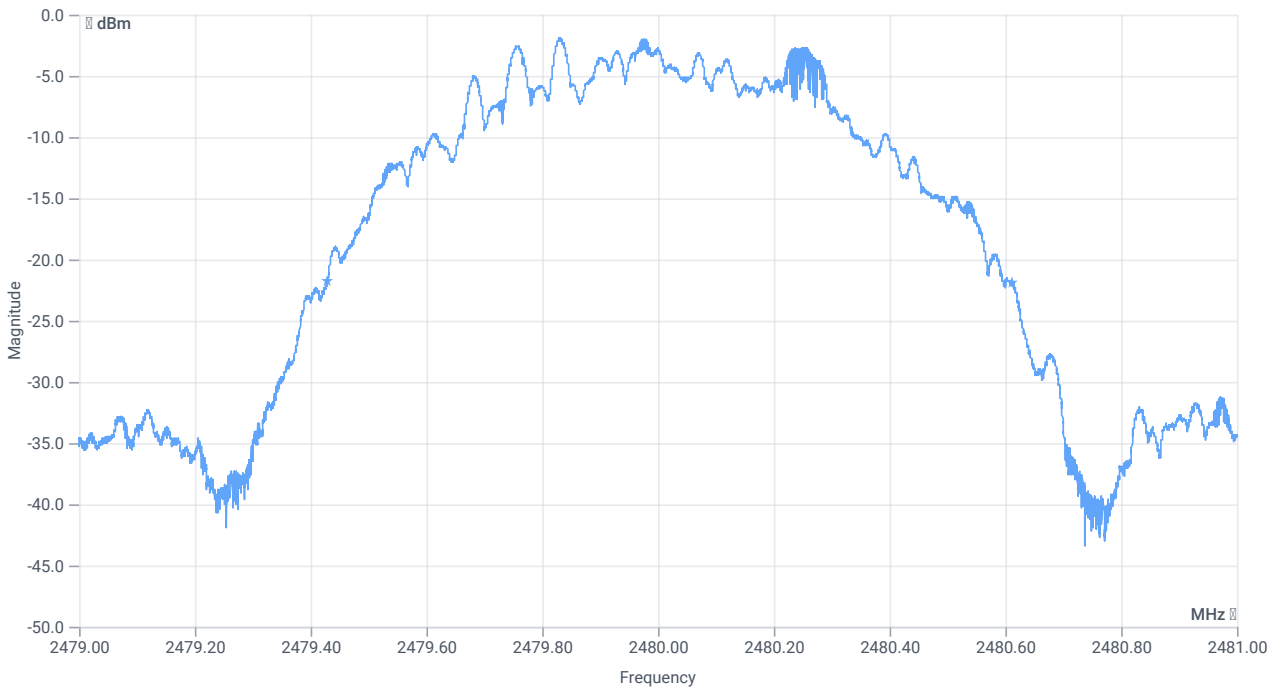
BW 99PCT



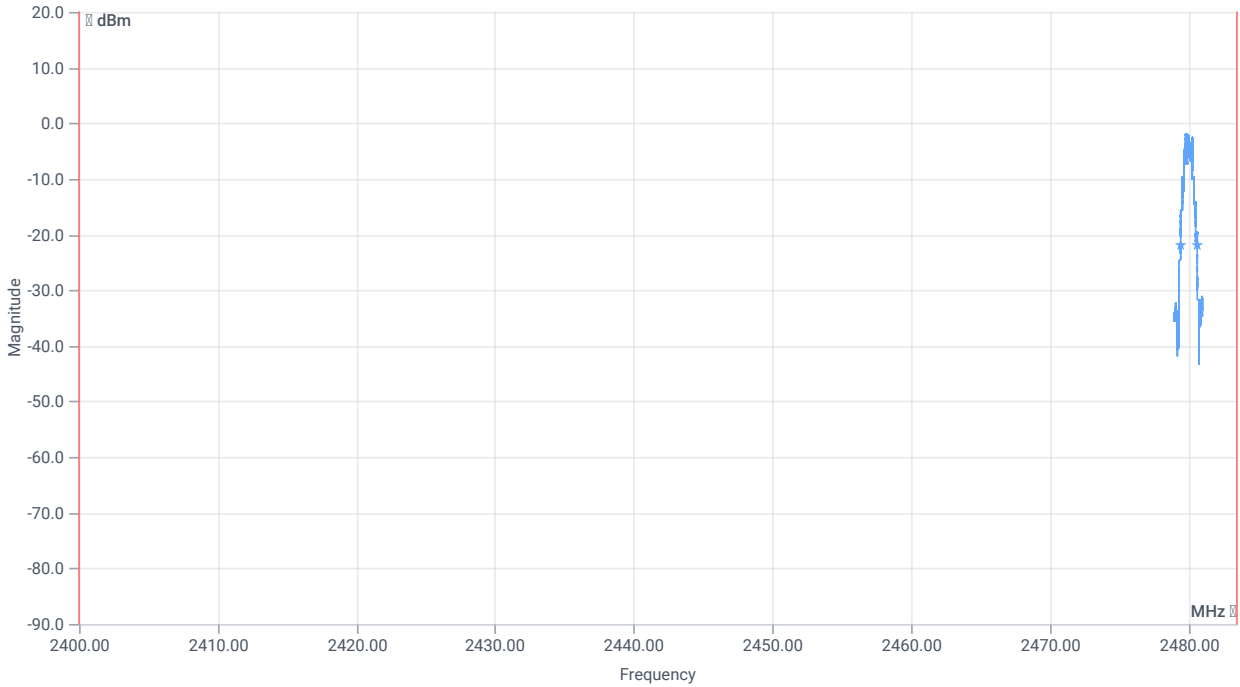
BW within Band 99PCT

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------|-------------|-------------|-----------|------|---------|
| Bandwidth 99% | -- | -- | 1044.000 | kHz | INFO |
| T1 99% | 2400.000000 | -- | 2479.4927 | MHz | PASS |
| T2 99% | -- | 2483.500000 | 2480.5371 | MHz | PASS |



BW 20dB



BW within Band 20dB

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|----------------|-------------|-------------|-----------|------|---------|
| Bandwidth 20dB | -- | -- | 1184 | kHz | INFO |
| T1 20dB | 2400.000000 | -- | 2479.4280 | MHz | PASS |
| T2 20dB | -- | 2483.500000 | 2480.6124 | MHz | PASS |

Verdict

PASS

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

References

| | |
|-----------------------------------|---|
| TC start | 25.07.2023 15:23:10 |
| Ambit temp [°C] humidity [rel%] | 0.0 0 |
| System version | 4.6.0.0 |
| Specification | FCC 15.247 - |
| Method | DTS: KDB 558074 D01 V05 - Chapter 8.3.1.1 RBW ≥ DTS Bandwidth |
| Description | FCC 15.247 Maximum Peak Output Power Conducted DTS - BT LE 2 Msps |
| Information | |

EUT Common Settings BT Low Energy

| | |
|--|--|
| Intermodulation Value N | 3 |
| Image Freq. Low Mid High [MHz] | 0 0 0 |
| Power Class | 2 |
| 1 Mbps supported | True TXpayload 255 RXpayload 255 |
| 2 Mbps supported | True TXpayload 255 RXpayload 255 |
| Longrange S8 supported | True TXpayload 255 RXpayload 255 |
| Longrange S2 supported | True TXpayload 255 RXpayload 255 |
| Signaling Settings | WS_USB_RS232 HCI 5 115200 None S1 None Off |
| 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] | 1.2 |
| Switched path | EUT - SignalingUnit - SpectrumAnalyzer |

Equipment

Equipment

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

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

Test at TX 2404 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.15 | dBm | INFO |
| Ref. Frequency | -- | -- | 2404.500 | MHz | INFO |

READ SA SETTINGS:

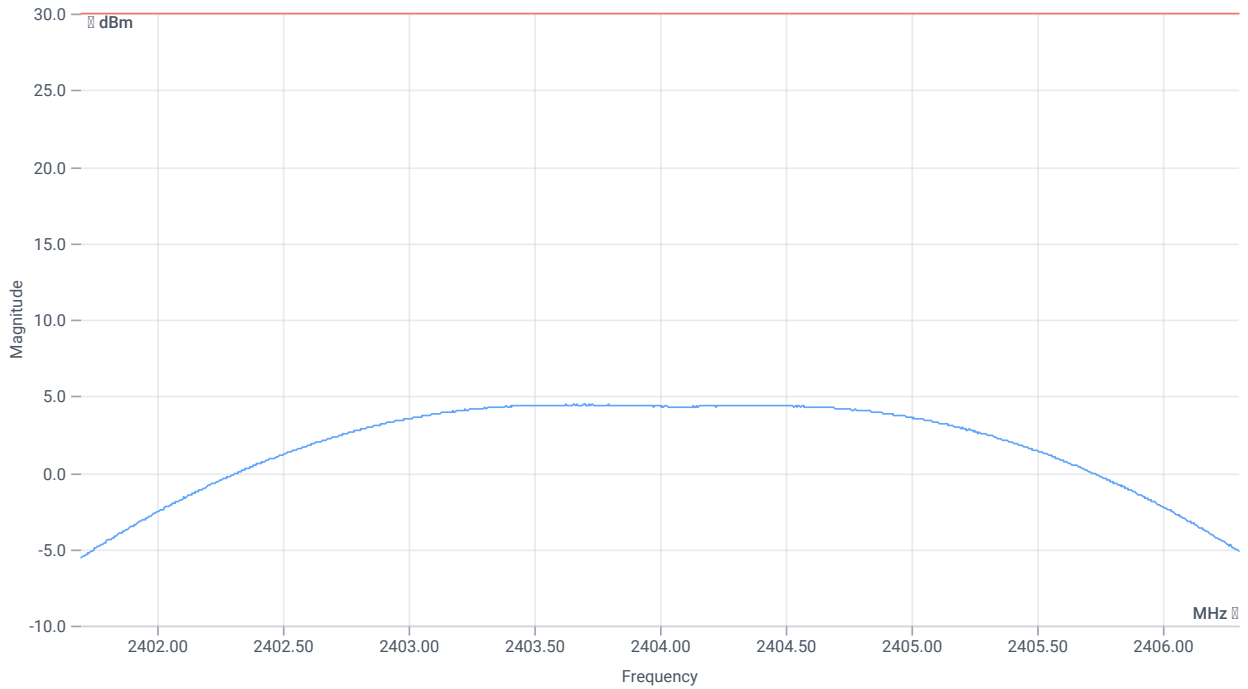
| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.15 11.8 15 |
| Start [MHz] Stop [MHz] | 2401.700 2406.300 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |

DTS Bandwidth

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | -- | -- | 1232 | kHz | INFO |

READ SA SETTINGS:

| | |
|--|-----------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 14.15 11.8 20 |
| Start [MHz] Stop [MHz] | 2401.700 2406.300 |
| RBW [MHz] VBW [MHz] | 2.000000 5.000000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 1001 SWE |



Peak output power

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------|-------------|-------------|----------|------|---------|
| Peak Power | -- | 30.00 | 4.45 | dBm | PASS |
| Peak Power | -- | 1000 | 2.786121 | mW | PASS |
| Frequency at Peak | -- | -- | 2403.669 | MHz | INFO |

Test at TX 2440 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.69 | dBm | INFO |
| Ref. Frequency | -- | -- | 2440.500 | MHz | INFO |

READ SA SETTINGS:

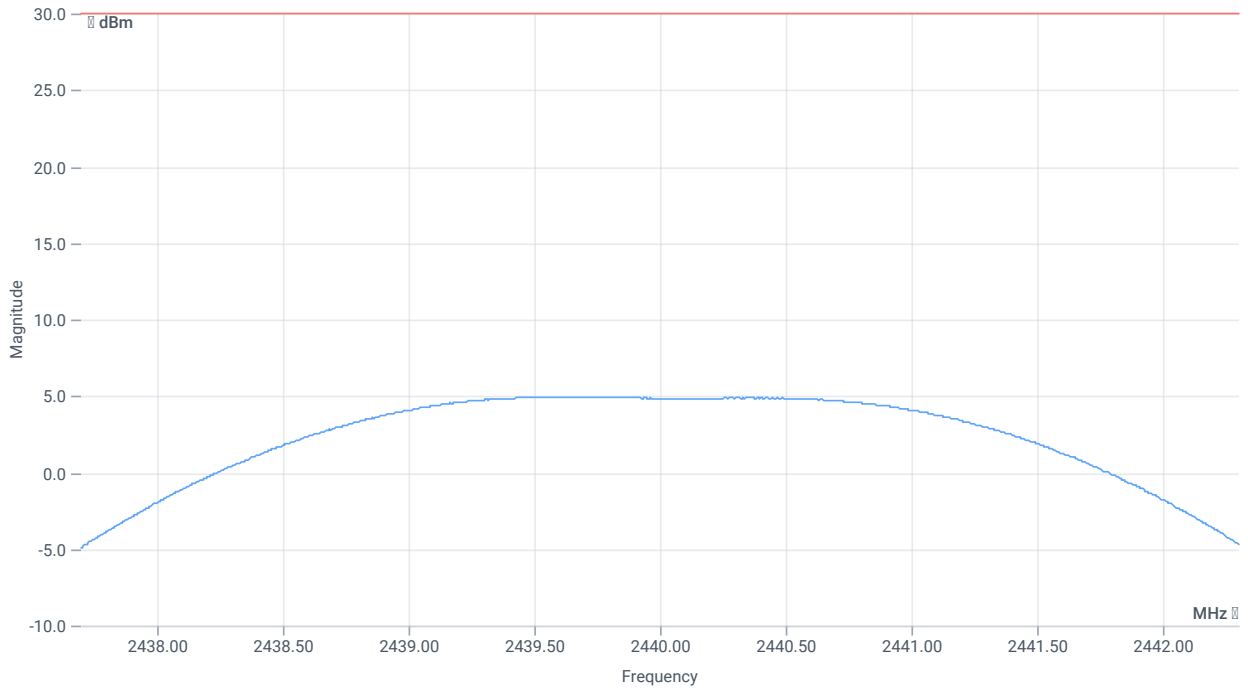
| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.69 11.86 15 |
| Start [MHz] Stop [MHz] | 2437.700 2442.300 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |

DTS Bandwidth

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | -- | -- | 1233 | kHz | INFO |

READ SA SETTINGS:

| | |
|--|-----------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 14.69 11.86 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 |



Peak output power

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------|-------------|-------------|----------|------|---------|
| Peak Power | -- | 30.00 | 4.96 | dBm | PASS |
| Peak Power | -- | 1000 | 3.133286 | mW | PASS |
| Frequency at Peak | -- | -- | 2439.766 | MHz | INFO |

Test at TX 2478 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.77 | dBm | INFO |
| Ref. Frequency | -- | -- | 2478.500 | MHz | INFO |

READ SA SETTINGS:

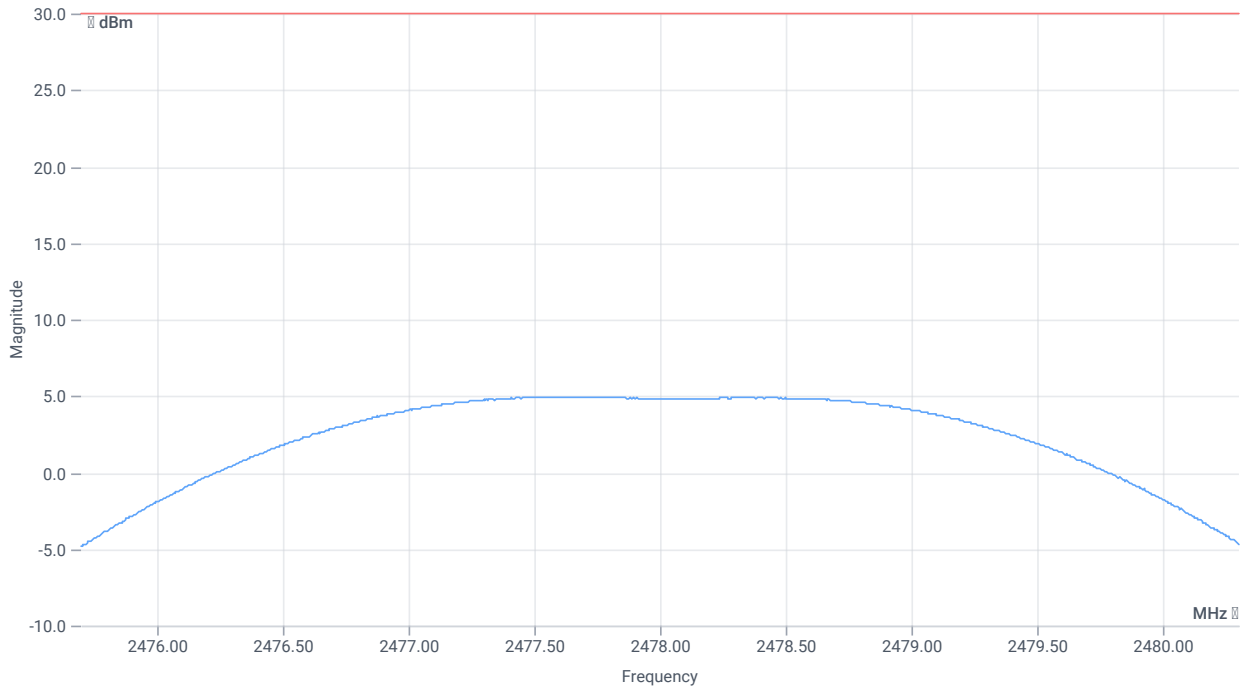
| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.77 11.9 15 |
| Start [MHz] Stop [MHz] | 2475.700 2480.300 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |

DTS Bandwidth

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | -- | -- | 1229 | kHz | INFO |

READ SA SETTINGS:

| | |
|--|-----------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 14.77 11.9 20 |
| Start [MHz] Stop [MHz] | 2475.700 2480.300 |
| RBW [MHz] VBW [MHz] | 2.000000 5.000000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 1001 SWE |



Peak output power

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------|-------------|-------------|----------|------|---------|
| Peak Power | -- | 30.00 | 4.94 | dBm | PASS |
| Peak Power | -- | 1000 | 3.11889 | mW | PASS |
| Frequency at Peak | -- | -- | 2477.701 | MHz | INFO |

Verdict

PASS

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

References

| | |
|-----------------------------------|---|
| TC start | 25.07.2023 14:56:17 |
| Ambit temp [°C] humidity [rel%] | 0.0 0 |
| System version | 4.6.0.0 |
| Specification | FCC 15.247 - |
| Method | DTS: KDB 558074 D01 V05 - Chapter 8.3.1.1 RBW ≥ DTS Bandwidth |
| Description | FCC 15.247 Maximum Peak Output Power Conducted DTS - BT LE 1 Msps |
| Information | |

EUT Common Settings BT Low Energy

| | |
|--|--|
| Intermodulation Value N | 3 |
| Image Freq. Low Mid High [MHz] | 0 0 0 |
| Power Class | 2 |
| 1 Mbps supported | True TXpayload 255 RXpayload 255 |
| 2 Mbps supported | True TXpayload 255 RXpayload 255 |
| Longrange S8 supported | True TXpayload 255 RXpayload 255 |
| Longrange S2 supported | True TXpayload 255 RXpayload 255 |
| Signaling Settings | WS_USB_RS232 HCI 5 115200 None S1 None Off |
| 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] | 1.2 |
| Switched path | EUT - SignalingUnit - SpectrumAnalyzer |

Equipment

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.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 3.83 | dBm | INFO |
| Ref. Frequency | -- | -- | 2402.300 | MHz | INFO |

READ SA SETTINGS:

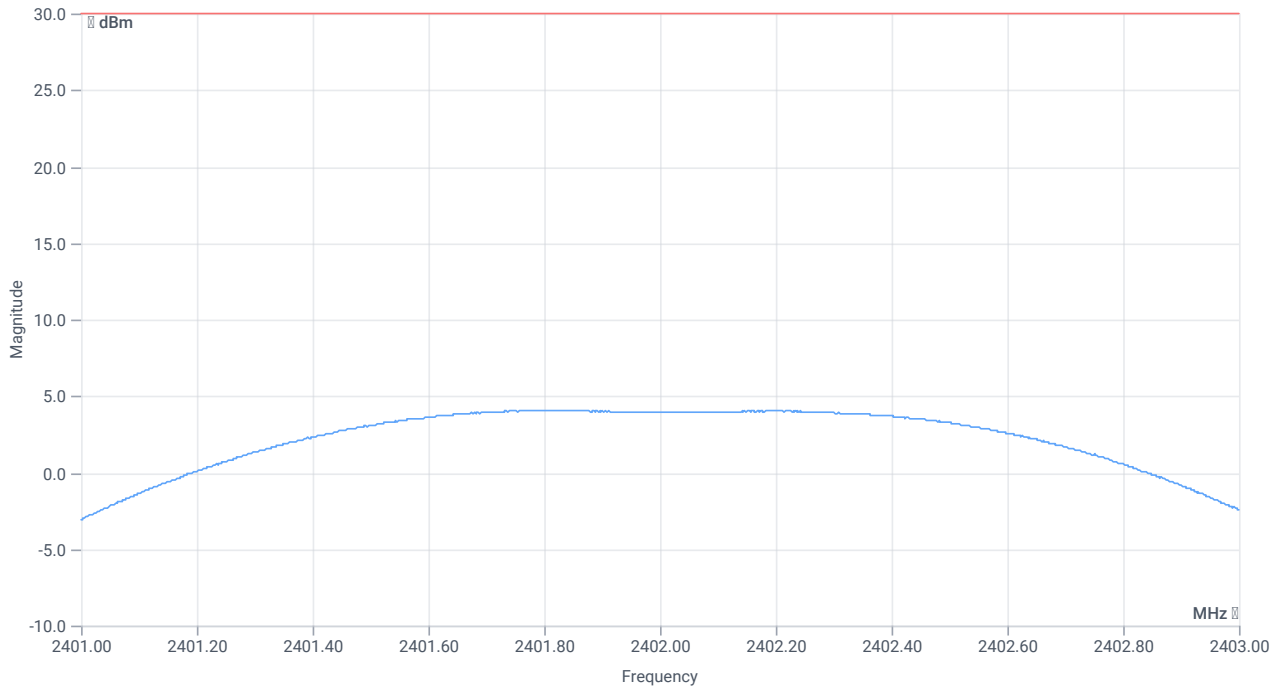
| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 8.83 11.79 15 |
| Start [MHz] Stop [MHz] | 2401.000 2403.000 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |

DTS Bandwidth

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | -- | -- | 663 | kHz | INFO |

READ SA SETTINGS:

| | |
|--|-----------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 13.83 11.79 20 |
| Start [MHz] Stop [MHz] | 2401.000 2403.000 |
| RBW [MHz] VBW [MHz] | 1.000000 3.000000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 1001 SWE |



Peak output power

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------|-------------|-------------|----------|------|---------|
| Peak Power | -- | 30.00 | 4.06 | dBm | PASS |
| Peak Power | -- | 1000 | 2.54683 | mW | PASS |
| Frequency at Peak | -- | -- | 2401.84 | MHz | INFO |

Test at TX 2440 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.43 | dBm | INFO |
| Ref. Frequency | -- | -- | 2440.200 | MHz | INFO |

READ SA SETTINGS:

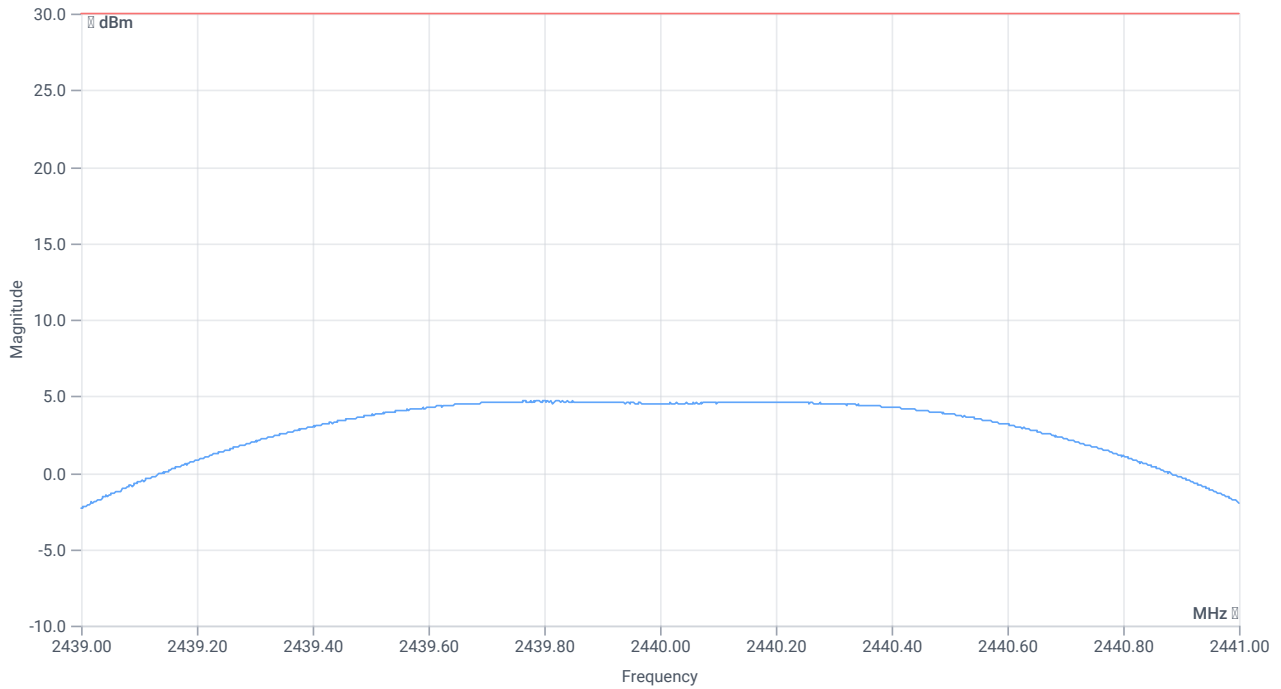
| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.43 11.86 15 |
| Start [MHz] Stop [MHz] | 2439.000 2441.000 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |

DTS Bandwidth

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | -- | -- | 663 | kHz | INFO |

READ SA SETTINGS:

| | |
|--|-----------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 14.43 11.86 20 |
| Start [MHz] Stop [MHz] | 2439.000 2441.000 |
| RBW [MHz] VBW [MHz] | 1.000000 3.000000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 1001 SWE |



Peak output power

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------|-------------|-------------|----------|------|---------|
| Peak Power | -- | 30.00 | 4.68 | dBm | PASS |
| Peak Power | -- | 1000 | 2.93765 | mW | PASS |
| Frequency at Peak | -- | -- | 2439.786 | MHz | INFO |

Test at TX 2480 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.57 | dBm | INFO |
| Ref. Frequency | -- | -- | 2480.200 | MHz | INFO |

READ SA SETTINGS:

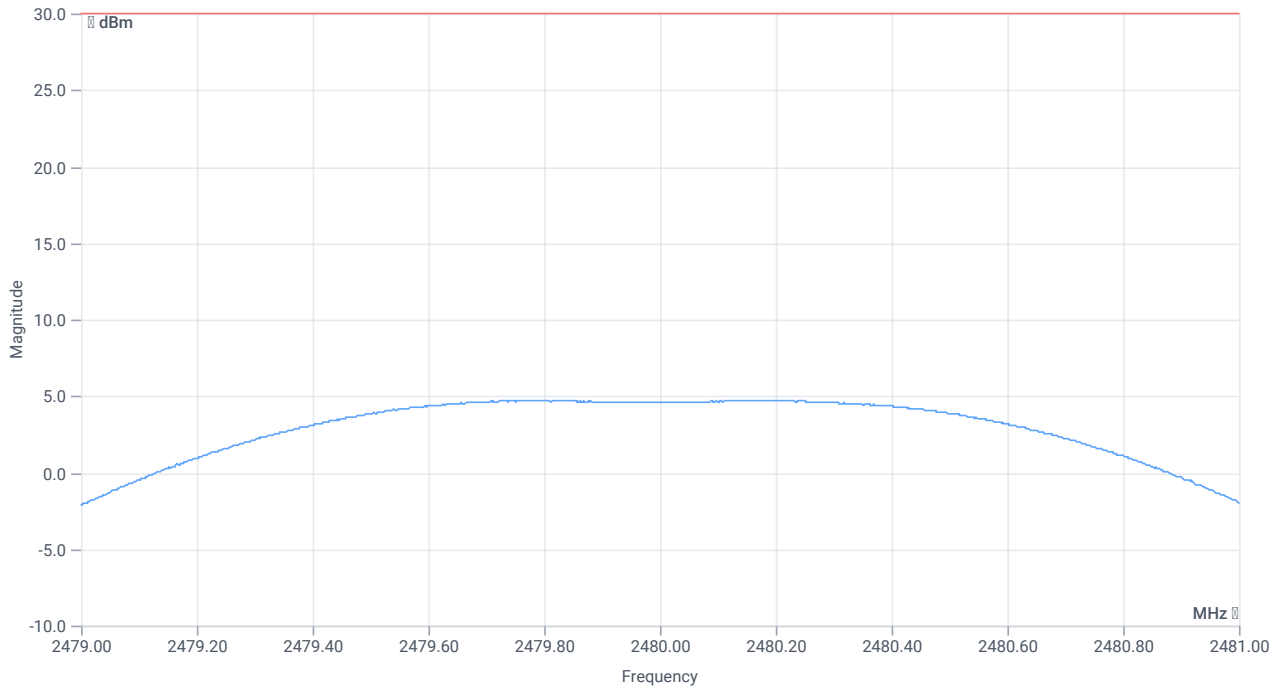
| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.57 11.91 15 |
| Start [MHz] Stop [MHz] | 2479.000 2481.000 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 10001 SWE |

DTS Bandwidth

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | -- | -- | 664 | kHz | INFO |

READ SA SETTINGS:

| | |
|--|-----------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 14.57 11.91 20 |
| Start [MHz] Stop [MHz] | 2479.000 2481.000 |
| RBW [MHz] VBW [MHz] | 1.000000 3.000000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 50 200 1001 SWE |



Peak output power

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------|-------------|-------------|----------|------|---------|
| Peak Power | -- | 30.00 | 4.71 | dBm | PASS |
| Peak Power | -- | 1000 | 2.958012 | mW | PASS |
| Frequency at Peak | -- | -- | 2480.186 | MHz | INFO |

Verdict

PASS

FCC 15.247 # Peak psd DTS ~ BT LE 2 Msps

References

| | |
|-----------------------------------|--|
| TC start | 25.07.2023 15:26:29 |
| Ambit temp [°C] humidity [rel%] | 0.0 0 |
| System version | 4.6.0.0 |
| Specification | FCC 15.247 - |
| Method | DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission |
| Description | FCC 15.247 Peak psd DTS - BT LE 2 Msps |
| Information | |

EUT Common Settings BT Low Energy

| | |
|--|--|
| Intermodulation Value N | 3 |
| Image Freq. Low Mid High [MHz] | 0 0 0 |
| Power Class | 2 |
| 1 Mbps supported | True TXpayload 255 RXpayload 255 |
| 2 Mbps supported | True TXpayload 255 RXpayload 255 |
| Longrange S8 supported | True TXpayload 255 RXpayload 255 |
| Longrange S2 supported | True TXpayload 255 RXpayload 255 |
| Signaling Settings | WS_USB_RS232 HCI 5 115200 None S1 None Off |
| 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] | 1.2 |
| Switched path | EUT - SignalingUnit - SpectrumAnalyzer |

Equipment

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

Equipment

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

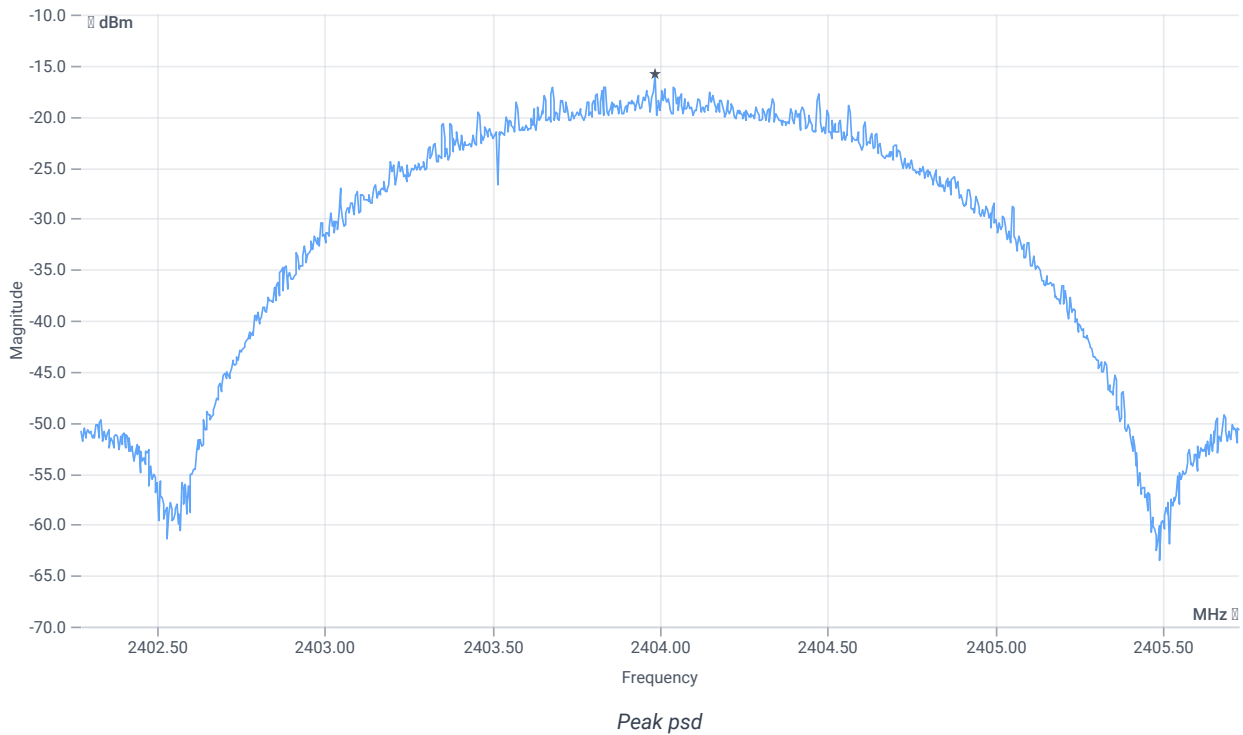
Test at TX 2404 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.26 | dBm | INFO |
| Ref. Frequency | -- | -- | 2404.500 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.26 11.8 15 |
| Start [MHz] Stop [MHz] | 2402.275 2405.725 |
| RBW [MHz] VBW [MHz] | 0.003000 0.010000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 1000 20 1001 SWE |



RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------|-------------|-------------|----------|----------|---------|
| Peak psd | -- | 8 | -15.84 | dBm/3KHz | PASS |

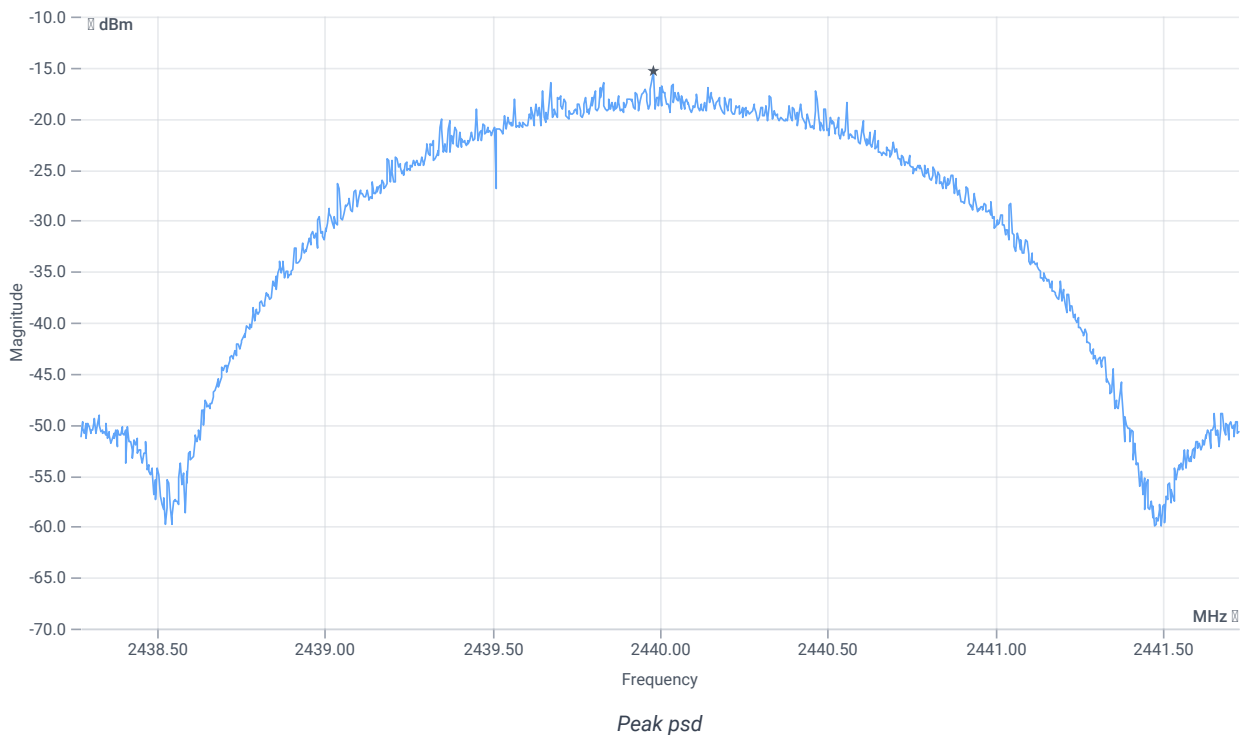
Test at TX 2440 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.78 | dBm | INFO |
| Ref. Frequency | -- | -- | 2440.500 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.78 11.86 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

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------|-------------|-------------|----------|----------|---------|
| Peak psd | -- | 8 | -15.35 | dBm/3KHz | PASS |

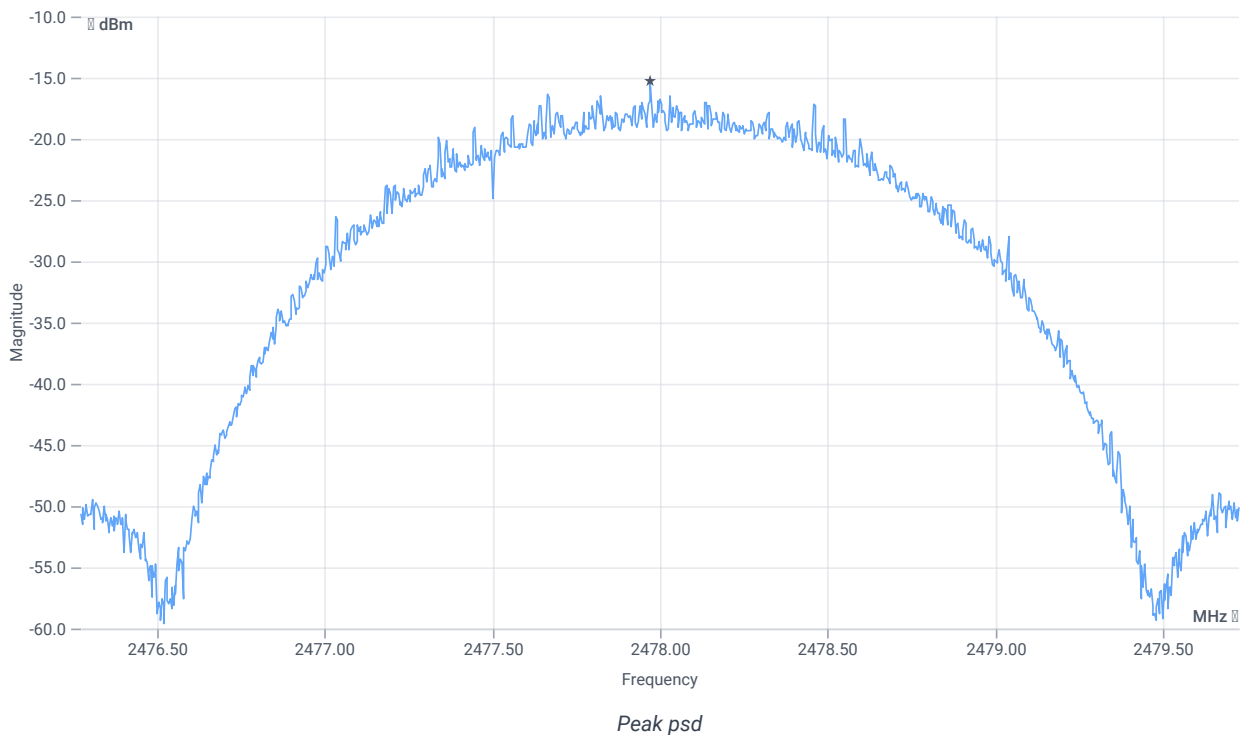
Test at TX 2478 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.83 | dBm | INFO |
| Ref. Frequency | -- | -- | 2478.500 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.83 11.9 15 |
| Start [MHz] Stop [MHz] | 2476.275 2479.725 |
| RBW [MHz] VBW [MHz] | 0.003000 0.010000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 1000 20 1001 SWE |



RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------|-------------|-------------|----------|----------|---------|
| Peak psd | -- | 8 | -15.23 | dBm/3KHz | PASS |

Verdict

PASS

FCC 15.247 # Peak psd DTS ~ BT LE 1 Msps

References

| | |
|-----------------------------------|--|
| TC start | 25.07.2023 14:59:37 |
| Ambit temp [°C] humidity [rel%] | 0.0 0 |
| System version | 4.6.0.0 |
| Specification | FCC 15.247 - |
| Method | DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission |
| Description | FCC 15.247 Peak psd DTS - BT LE 1 Msps |
| Information | |

EUT Common Settings BT Low Energy

| | |
|--|--|
| Intermodulation Value N | 3 |
| Image Freq. Low Mid High [MHz] | 0 0 0 |
| Power Class | 2 |
| 1 Mbps supported | True TXpayload 255 RXpayload 255 |
| 2 Mbps supported | True TXpayload 255 RXpayload 255 |
| Longrange S8 supported | True TXpayload 255 RXpayload 255 |
| Longrange S2 supported | True TXpayload 255 RXpayload 255 |
| Signaling Settings | WS_USB_RS232 HCI 5 115200 None S1 None Off |
| 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] | 1.2 |
| Switched path | EUT - SignalingUnit - SpectrumAnalyzer |

Equipment

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

Equipment

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

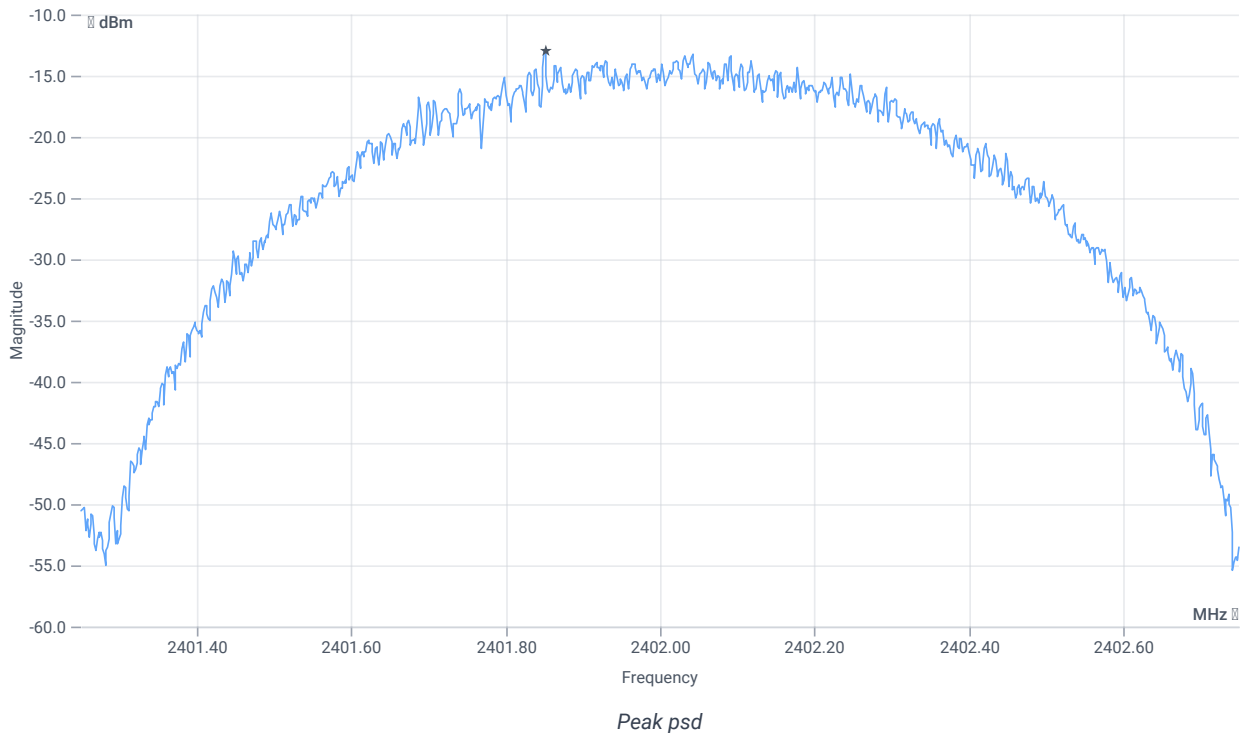
Test at TX 2402 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 3.99 | dBm | INFO |
| Ref. Frequency | -- | -- | 2402.200 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 8.99 11.79 15 |
| Start [MHz] Stop [MHz] | 2401.250 2402.750 |
| RBW [MHz] VBW [MHz] | 0.003000 0.010000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 1000 20 1001 SWE |



RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------|-------------|-------------|----------|----------|---------|
| Peak psd | -- | 8 | -12.97 | dBm/3KHz | PASS |

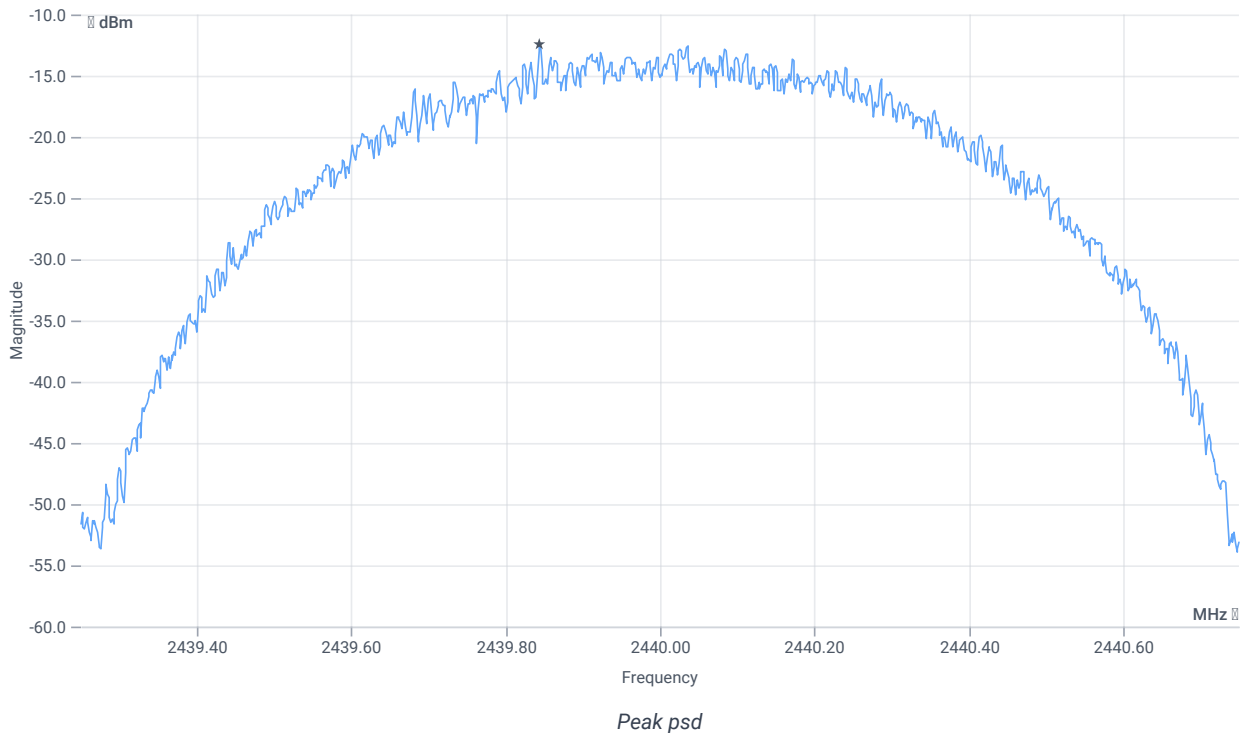
Test at TX 2440 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.46 | dBm | INFO |
| Ref. Frequency | -- | -- | 2440.200 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.46 11.86 15 |
| Start [MHz] Stop [MHz] | 2439.250 2440.750 |
| RBW [MHz] VBW [MHz] | 0.003000 0.010000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 1000 20 1001 SWE |



RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------|-------------|-------------|----------|----------|---------|
| Peak psd | -- | 8 | -12.37 | dBm/3KHz | PASS |

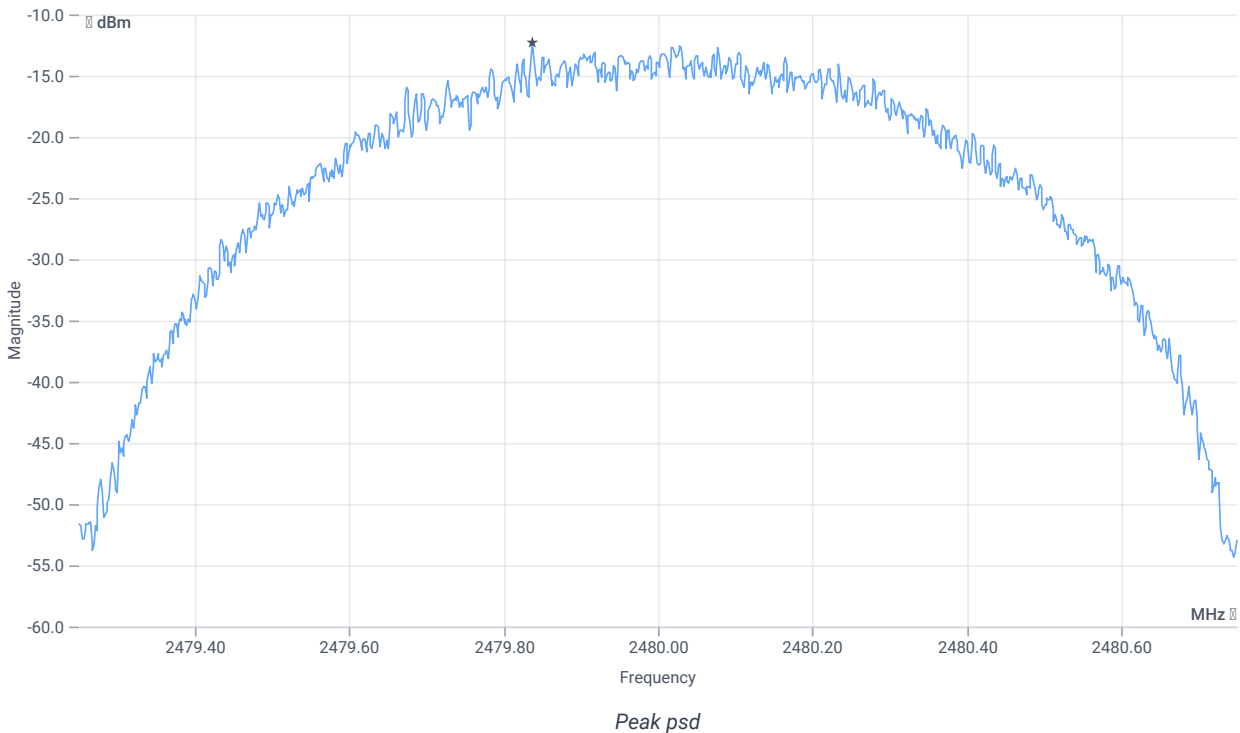
Test at TX 2480 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.59 | dBm | INFO |
| Ref. Frequency | -- | -- | 2480.200 | MHz | INFO |

READ SA SETTINGS:

| | |
|--|------------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 9.59 11.91 15 |
| Start [MHz] Stop [MHz] | 2479.250 2480.750 |
| RBW [MHz] VBW [MHz] | 0.003000 0.010000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 1000 20 1001 SWE |



RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------|-------------|-------------|----------|----------|---------|
| Peak psd | -- | 8 | -12.27 | dBm/3KHz | PASS |

Verdict

PASS

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

References

| | |
|-----------------------------------|--|
| TC start | 25.07.2023 15:30:03 |
| Ambit temp [°C] humidity [rel%] | 0.0 0 |
| System version | 4.6.0.0 |
| Specification | FCC 15.247 - |
| Method | IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable |
| Description | FCC 15.247 TX Emissions Conducted DTS - BT LE 2 Msps |
| Information | |

EUT Common Settings BT Low Energy

| | |
|--|--|
| Intermodulation Value N | 3 |
| Image Freq. Low Mid High [MHz] | 0 0 0 |
| Power Class | 2 |
| 1 Mbps supported | True TXpayload 255 RXpayload 255 |
| 2 Mbps supported | True TXpayload 255 RXpayload 255 |
| Longrange S8 supported | True TXpayload 255 RXpayload 255 |
| Longrange S2 supported | True TXpayload 255 RXpayload 255 |
| Signaling Settings | WS_USB_RS232 HCI 5 115200 None S1 None Off |
| 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] | 1.2 |
| Switched path | EUT - SignalingUnit - SpectrumAnalyzer |

Equipment

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

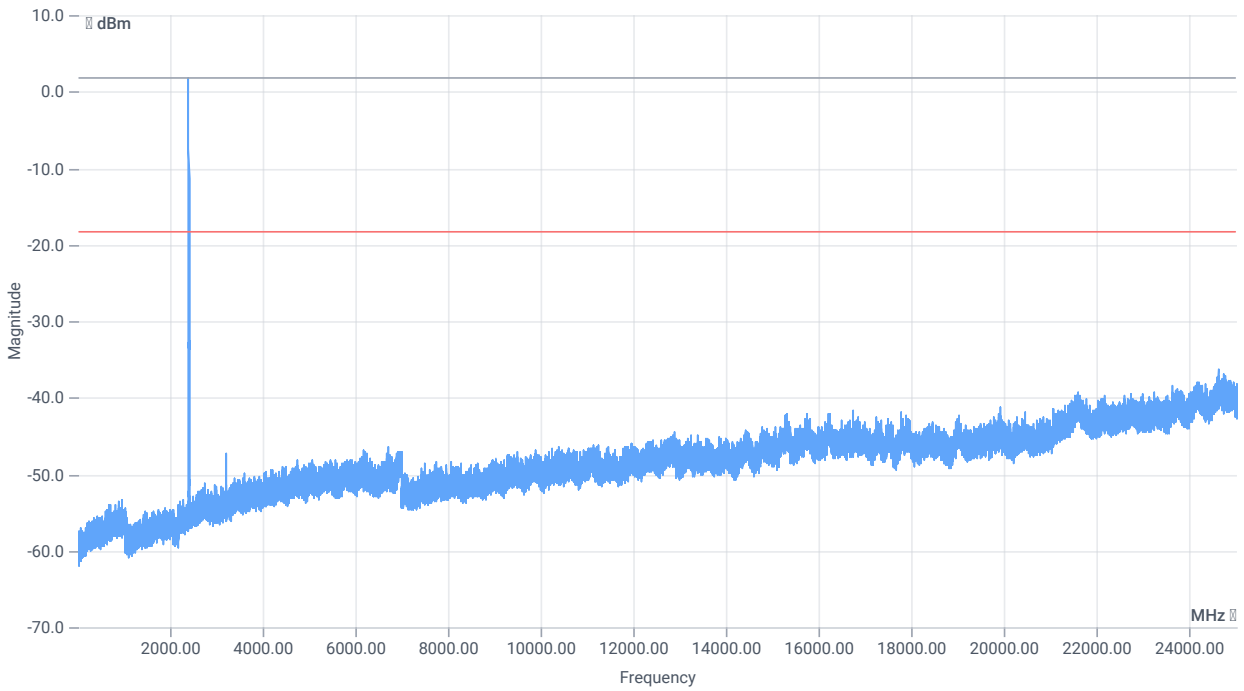
Equipment

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

Test at TX 2404 MHz

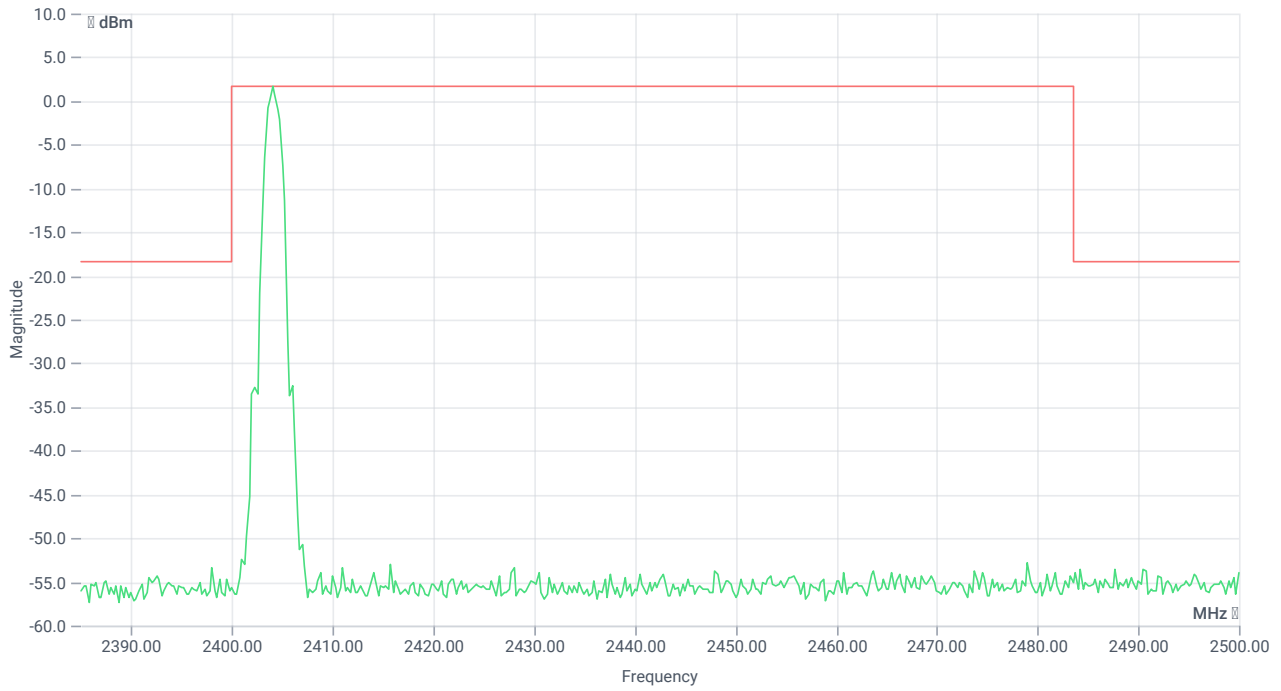
RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.25 | dBm | INFO |
| Ref. Frequency | -- | -- | 2404.500 | MHz | INFO |



READ SA SETTINGS:

| | |
|--|-----------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 4.25 0 20 |
| Start [MHz] Stop [MHz] | 24530.000 25030.000 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 200 25 2001 SWE |



TX emissions band zoomed

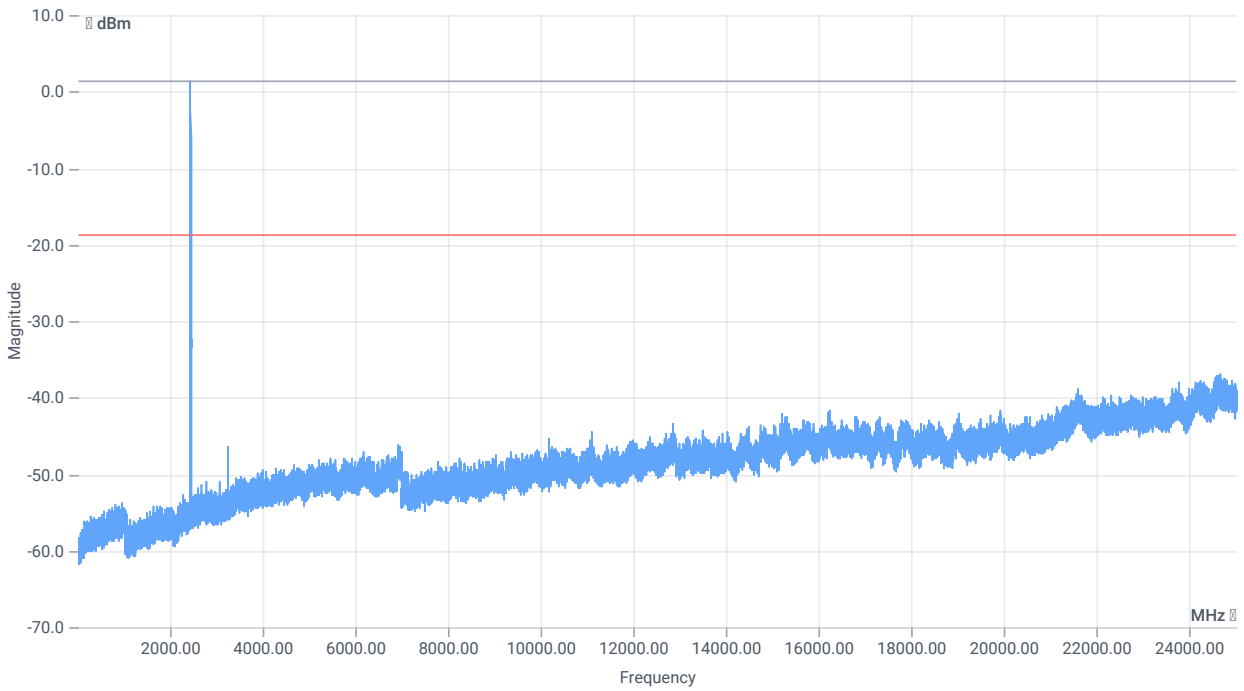
RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|----------------------------------|-------------|-------------|----------|------|---------|
| Reference @ 2404.00 MHz | -- | -- | 1.68 | dBm | INFO |
| No peaks detected | -- | -- | | | PASS |
| Lowest margin to limit 24619 MHz | 0 | -- | 18.04 | dB | INFO |

Test at TX 2440 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.80 | dBm | INFO |
| Ref. Frequency | -- | -- | 2440.500 | MHz | INFO |



READ SA SETTINGS:

| | |
|--|-----------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 4.80 0 20 |
| Start [MHz] Stop [MHz] | 24530.000 25030.000 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 200 25 2001 SWE |



TX emissions band zoomed

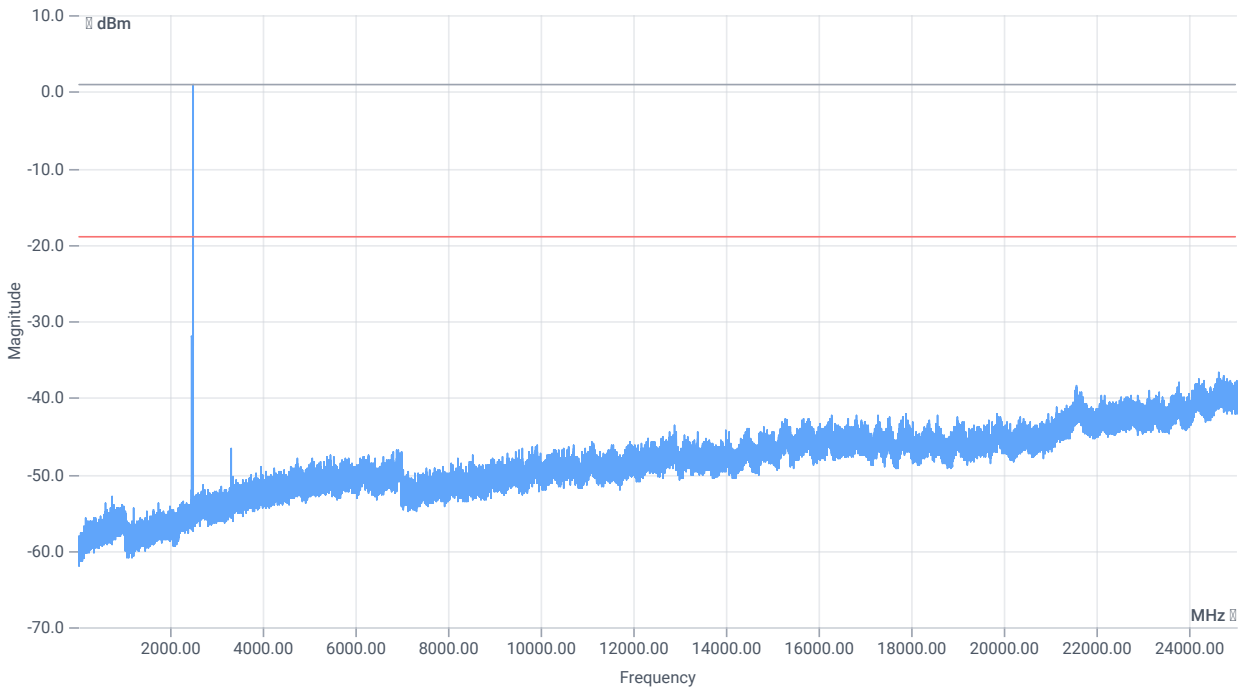
RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Reference @ 2440.25 MHz | -- | -- | 1.26 | dBm | INFO |
| No peaks detected | -- | -- | | | PASS |
| Lowest margin to limit 30 MHz | 0 | -- | -140.5 | dB | INFO |

Test at TX 2478 MHz

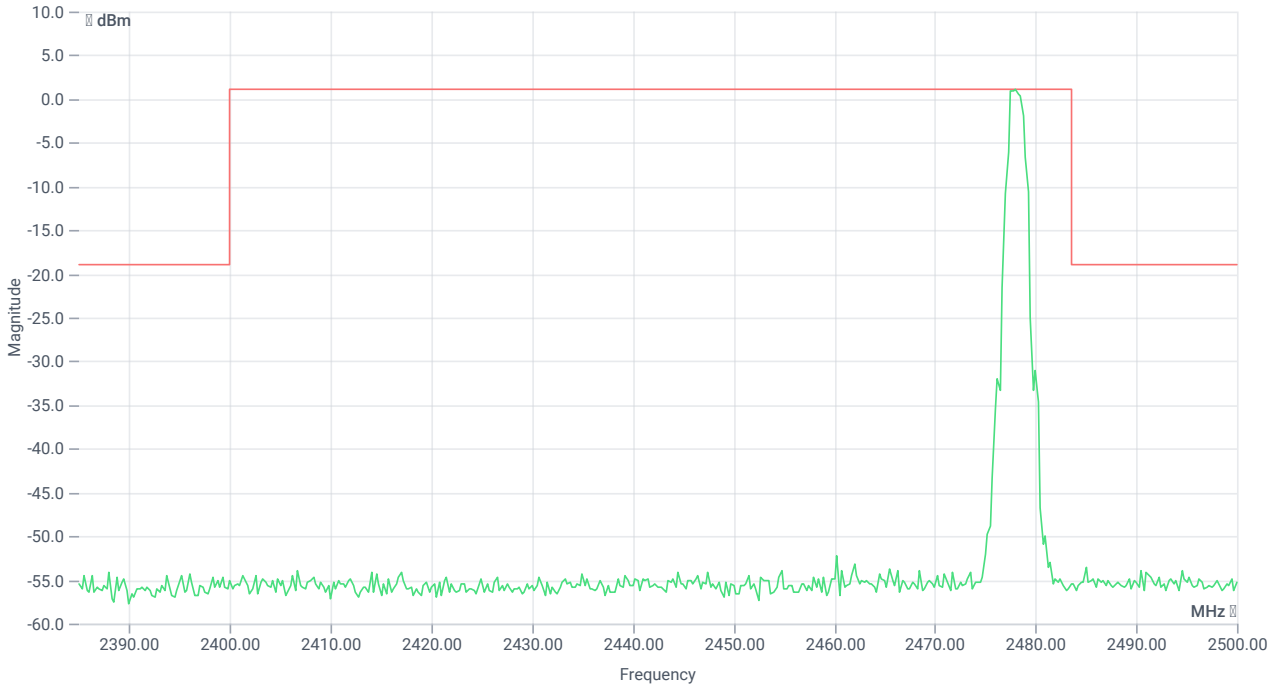
RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.70 | dBm | INFO |
| Ref. Frequency | -- | -- | 2478.600 | MHz | INFO |



READ SA SETTINGS:

| | |
|--|-----------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 4.70 0 20 |
| Start [MHz] Stop [MHz] | 24530.000 25030.000 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 200 25 2001 SWE |



TX emissions band zoomed

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Reference @ 2478.00 MHz | -- | -- | 1.02 | dBm | INFO |
| No peaks detected | -- | -- | | | PASS |
| Lowest margin to limit 30 MHz | 0 | -- | -139.82 | dB | INFO |

Verdict

PASS

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

References

| | |
|-----------------------------------|--|
| TC start | 25.07.2023 15:03:11 |
| Ambit temp [°C] humidity [rel%] | 0.0 0 |
| System version | 4.6.0.0 |
| Specification | FCC 15.247 - |
| Method | IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable |
| Description | FCC 15.247 TX Emissions Conducted DTS - BT LE 1 Msps |
| Information | |

EUT Common Settings BT Low Energy

| | |
|--|--|
| Intermodulation Value N | 3 |
| Image Freq. Low Mid High [MHz] | 0 0 0 |
| Power Class | 2 |
| 1 Mbps supported | True TXpayload 255 RXpayload 255 |
| 2 Mbps supported | True TXpayload 255 RXpayload 255 |
| Longrange S8 supported | True TXpayload 255 RXpayload 255 |
| Longrange S2 supported | True TXpayload 255 RXpayload 255 |
| Signaling Settings | WS_USB_RS232 HCI 5 115200 None S1 None Off |
| 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] | 1.2 |
| Switched path | EUT - SignalingUnit - SpectrumAnalyzer |

Equipment

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

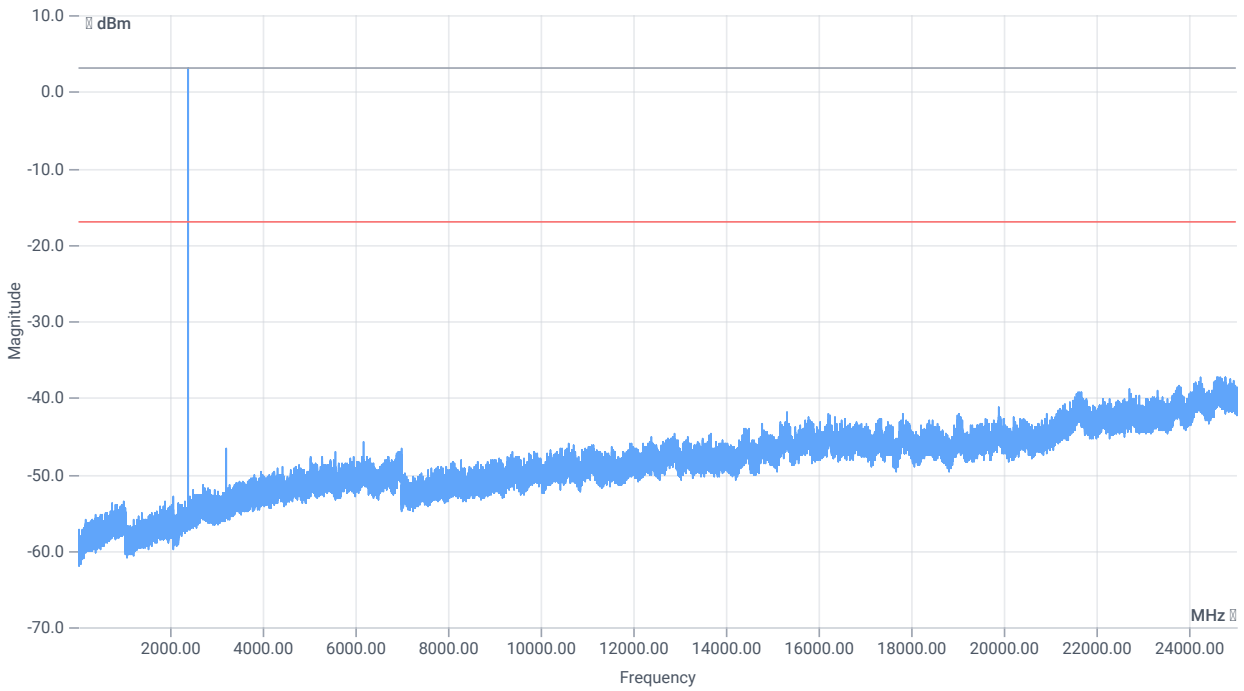
Equipment

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

Test at TX 2402 MHz

RESULT: Reference Power cond.

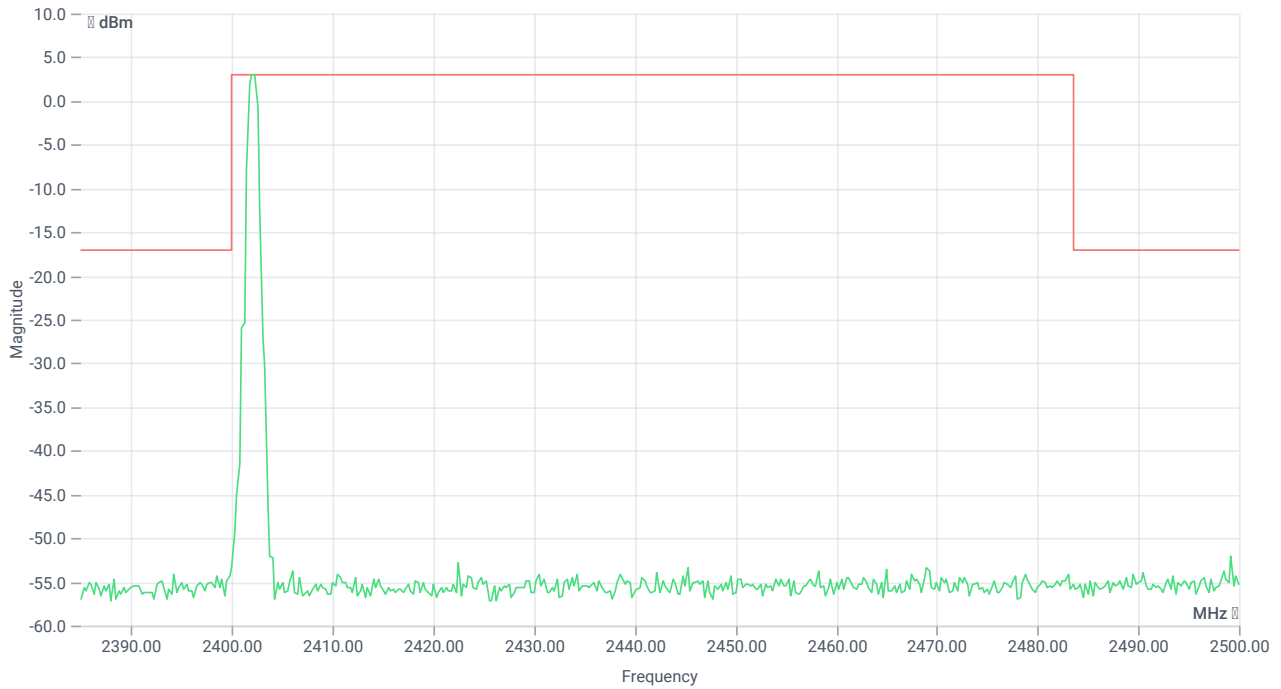
| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 3.94 | dBm | INFO |
| Ref. Frequency | -- | -- | 2401.800 | MHz | INFO |



TX emissions

READ SA SETTINGS:

| | |
|--|-----------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 3.94 0 20 |
| Start [MHz] Stop [MHz] | 24530.000 25030.000 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 200 25 2001 SWE |



TX emissions band zoomed

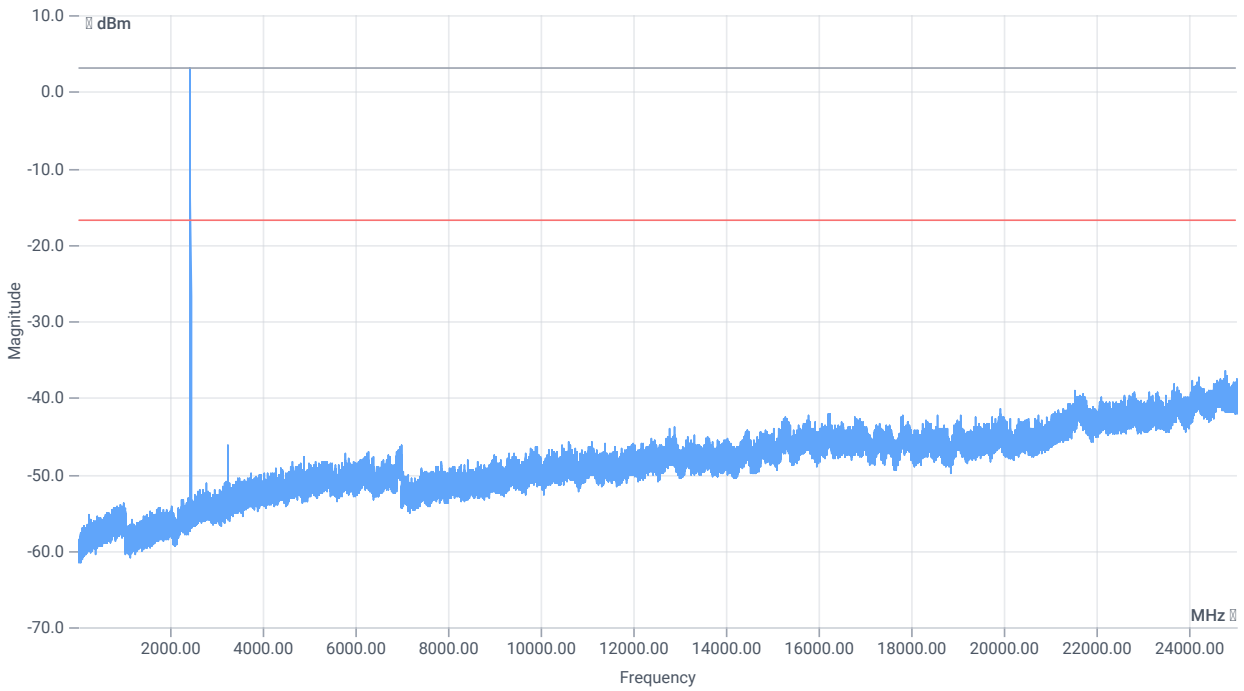
RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Reference @ 2402.00 MHz | -- | -- | 2.99 | dBm | INFO |
| No peaks detected | -- | -- | | | PASS |
| Lowest margin to limit 30 MHz | 0 | -- | -140.86 | dB | INFO |

Test at TX 2440 MHz

RESULT: Reference Power cond.

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.54 | dBm | INFO |
| Ref. Frequency | -- | -- | 2440.300 | MHz | INFO |



READ SA SETTINGS:

| | |
|--|-----------------------|
| RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB] | 4.54 0 20 |
| Start [MHz] Stop [MHz] | 24530.000 25030.000 |
| RBW [MHz] VBW [MHz] | 0.100000 0.300000 |
| Detector TraceMode | POS MAXH |
| Sweep: time [ms] count points per Section type | 200 25 2001 SWE |



TX emissions band zoomed

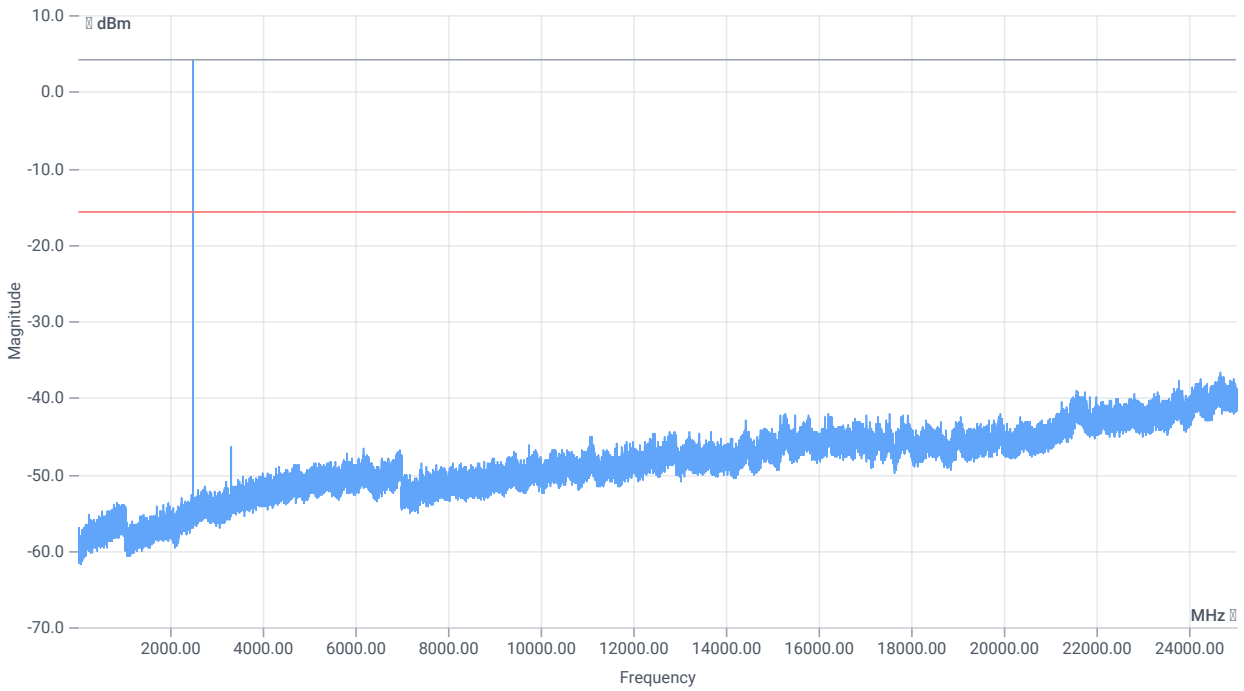
RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------------|-------------|-------------|----------|------|---------|
| Reference @ 2440.00 MHz | -- | -- | 3.17 | dBm | INFO |
| No peaks detected | -- | -- | | | PASS |
| Lowest margin to limit 24774.75 MHz | 0 | -- | 19.67 | dB | INFO |

Test at TX 2480 MHz

RESULT: Reference Power cond.

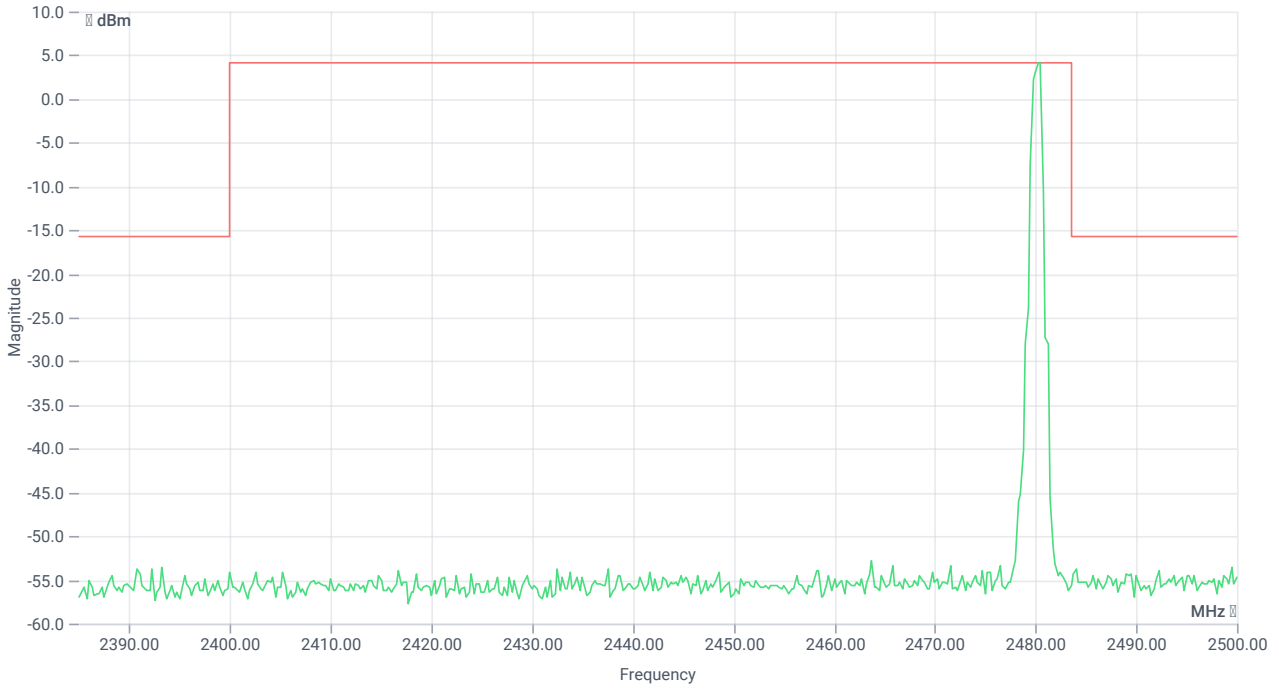
| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Ref. Power 1MHz/1MHz cond. | -- | -- | 4.66 | dBm | INFO |
| Ref. Frequency | -- | -- | 2480.200 | MHz | INFO |



TX emissions

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 | 200 25 2001 SWE |



TX emissions band zoomed

RESULT

| DESCRIPTION | LOWER LIMIT | UPPER LIMIT | MEASURED | UNIT | VERDICT |
|-------------------------------|-------------|-------------|----------|------|---------|
| Reference @ 2480.25 MHz | -- | -- | 4.22 | dBm | INFO |
| No peaks detected | -- | -- | | | PASS |
| Lowest margin to limit 30 MHz | 0 | -- | -141.29 | dB | INFO |

Verdict

PASS

- END OF DOCUMENT -