

# Measurement Results

1-5727/18-05-02\_log1

[Test logging](#)

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## IUT Summary

| IUT DEFINITION |                             |
|----------------|-----------------------------|
| Manufacturer   | Würth Elektronik eiSos GmbH |
| Type           | AMB2623                     |
| Serial No.     | 0A8729                      |
| Setup No.      | NI                          |
| SW Version     | NI                          |
| HW Version     | NI                          |
| Comment 1      | NI                          |
| Comment 2      | NI                          |

| IUT Common Settings       |     |
|---------------------------|-----|
| Tlow [°C]                 | -40 |
| Tmid [°C]                 | 20  |
| Thigh [°C]                | 85  |
| Vlow [V]                  | 1.8 |
| Vmid [V]                  | 3.3 |
| Vhigh [V]                 | 3.6 |
| Imax [A]                  | 1   |
| Antenna Gain [dBi]        | 0   |
| Additional Path Loss [dB] | 0.3 |

| IUT Common Settings BT Low Energy        |                                                     |
|------------------------------------------|-----------------------------------------------------|
| Intermodulation Value N                  | 0                                                   |
| Image Freq. Low   Mid   High [MHz]       | 0   0   0                                           |
| Power Class                              | 2                                                   |
| 1 Mbps supported                         | True   TXpayload 255   RXpayload 255                |
| 2 Mbps supported                         | True   TXpayload 255   RXpayload 255                |
| Longrange S8 supported                   | False   TXpayload 255   RXpayload 255               |
| Longrange S2 supported                   | False   TXpayload 255   RXpayload 255               |
| Signaling Settings                       | USB_RS232   TW0   23   B19K   None   S1   None   On |
| Signaling RF Settings                    | RF1com   0   0   On                                 |
| User Interaction                         | No                                                  |
| Switch Matrix & Pathcompensation enabled | Yes                                                 |

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

| Test References            |                                                                                             |
|----------------------------|---------------------------------------------------------------------------------------------|
| TC Start                   | 25.09.2018 13:40:32                                                                         |
| System Version             | 1.0.0.10                                                                                    |
| Test Specification         | FCC Part 15.247                                                                             |
| Test Method                | DTS: KDB 558074 D01 V04 - Chapter 9.1.1 RBW >= DTS Bandwidth                                |
| Class / TC Version / TC ID | TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 Version: 0.0.1   TCID_FCC15247_3 |
| My Description             | FCC 15.247 Maximum Peak Output Power Conducted DTS - BT LE 1 Msps                           |
| Add. Information           |                                                                                             |

| Test Parameter         |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Technology to test     | BT LE 1 Msps                                                                                            |
| Antenna Port used      | 1                                                                                                       |
| Temperature            | mid                                                                                                     |
| Voltage                | mid                                                                                                     |
| Frequency low to test  | True   Freq [MHz] 2402                                                                                  |
| Frequency mid to test  | True   Freq [MHz] 2440                                                                                  |
| Frequency high to test | True   Freq [MHz] 2480                                                                                  |
| Pattern                | PRBS9                                                                                                   |
| Switched Path          | IUT - SignalingUnit - SpectrumAnalyzer                                                                  |
| Devices in use         | SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.40   SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40 |

## Test at TX 2402 MHz

### RESULT: DTM Connection check

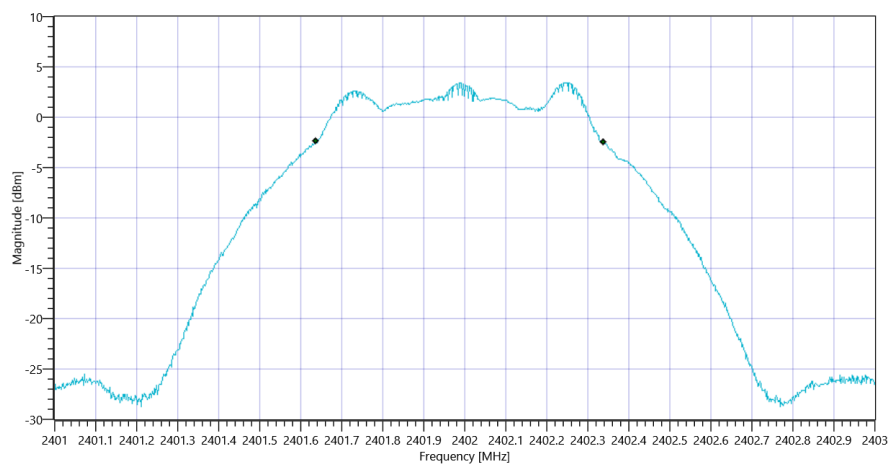
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 8.46     |
| Ref. Lev. offs [dB]    | 10.09    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2401.000 |
| Freq. Stop [MHz]       | 2403.000 |
| Resolution BW. [MHz]   | 0.100000 |
| Video BW. [MHz]        | 0.300000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: DTS Bandwidth

| Test Description    | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|---------------------|-------------|-------------|----------|------|-------------|
| DTS Bandwidth (6dB) | ---         | ---         | 0.702    | MHz  | Information |

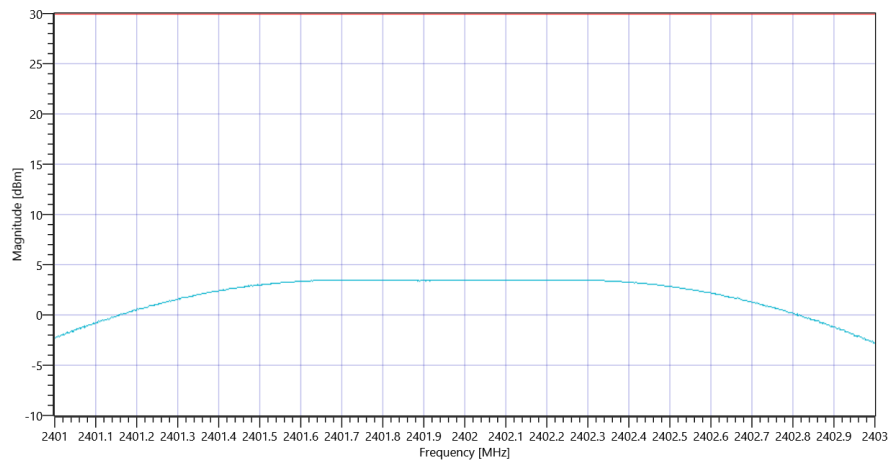


Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS BT LE 1 Msps DTS BW \_25092018\_134108.png

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 13.46    |
| Ref. Lev. offs [dB]    | 10.09    |
| Input Attenuation [dB] | 20       |
| Freq. Start [MHz]      | 2401.000 |
| Freq. Stop [MHz]       | 2403.000 |
| Resolution BW. [MHz]   | 1.000000 |
| Video BW. [MHz]        | 5.000000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

| RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 |             |             |          |      |             |
|--------------------------------------------------------------------|-------------|-------------|----------|------|-------------|
| Test Description                                                   | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
| Peak Power                                                         | ---         | 30.00       | 3.48     | dBm  | PASS        |
| Peak Power                                                         | ---         | 1000        | 2.228435 | mW   | PASS        |
| Frequency at Peak                                                  | ---         | ---         | 2401.73  | MHz  | Information |



Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS BT LE 1 Msps\_25092018\_134123.png

## Test at TX 2440 MHz

### RESULT: DTM Connection check

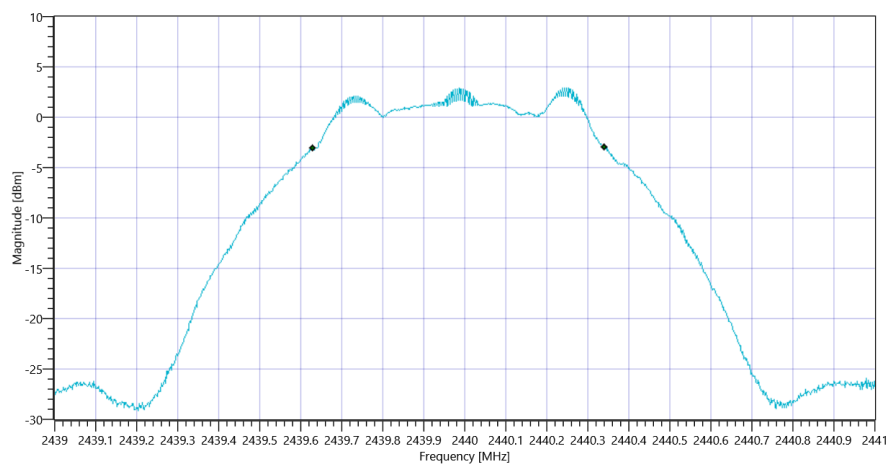
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 8.01     |
| Ref. Lev. offs [dB]    | 10.21    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2439.000 |
| Freq. Stop [MHz]       | 2441.000 |
| Resolution BW. [MHz]   | 0.100000 |
| Video BW. [MHz]        | 0.300000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: DTS Bandwidth

| Test Description    | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|---------------------|-------------|-------------|----------|------|-------------|
| DTS Bandwidth (6dB) | ---         | ---         | 0.71     | MHz  | Information |

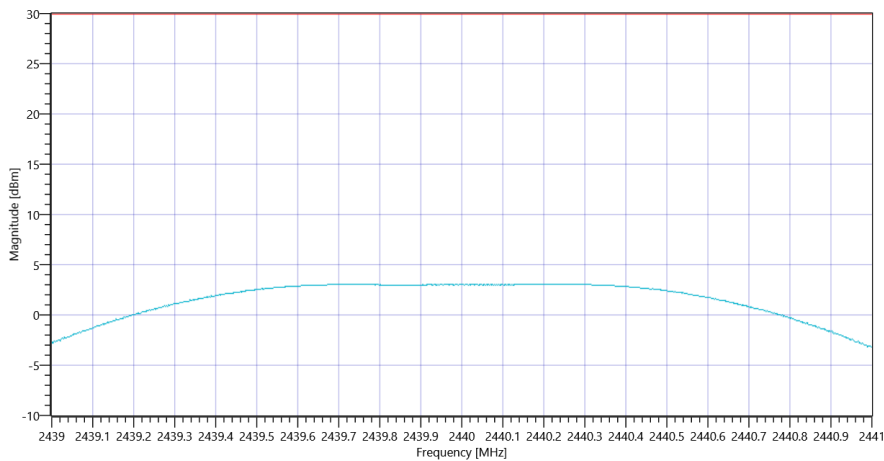


Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS BT LE 1 Msps DTS BW \_25092018\_134204.png

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 13.01    |
| Ref. Lev. offs [dB]    | 10.21    |
| Input Attenuation [dB] | 20       |
| Freq. Start [MHz]      | 2439.000 |
| Freq. Stop [MHz]       | 2441.000 |
| Resolution BW. [MHz]   | 1.000000 |
| Video BW. [MHz]        | 5.000000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

| RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 |             |             |          |      |             |
|--------------------------------------------------------------------|-------------|-------------|----------|------|-------------|
| Test Description                                                   | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
| Peak Power                                                         | ---         | 30.00       | 3.05     | dBm  | PASS        |
| Peak Power                                                         | ---         | 1000        | 2.018366 | mW   | PASS        |
| Frequency at Peak                                                  | ---         | ---         | 2440.24  | MHz  | Information |



Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS BT LE 1 Msps\_25092018\_134218.png

## Test at TX 2480 MHz

### RESULT: DTM Connection check

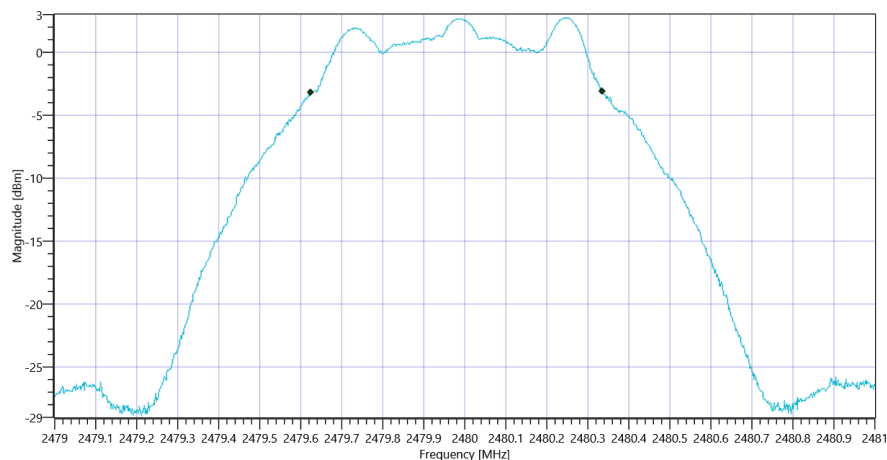
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.76     |
| Ref. Lev. offs [dB]    | 10.26    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2479.000 |
| Freq. Stop [MHz]       | 2481.000 |
| Resolution BW. [MHz]   | 0.100000 |
| Video BW. [MHz]        | 0.300000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: DTS Bandwidth

| Test Description    | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|---------------------|-------------|-------------|----------|------|-------------|
| DTS Bandwidth (6dB) | ---         | ---         | 0.712    | MHz  | Information |

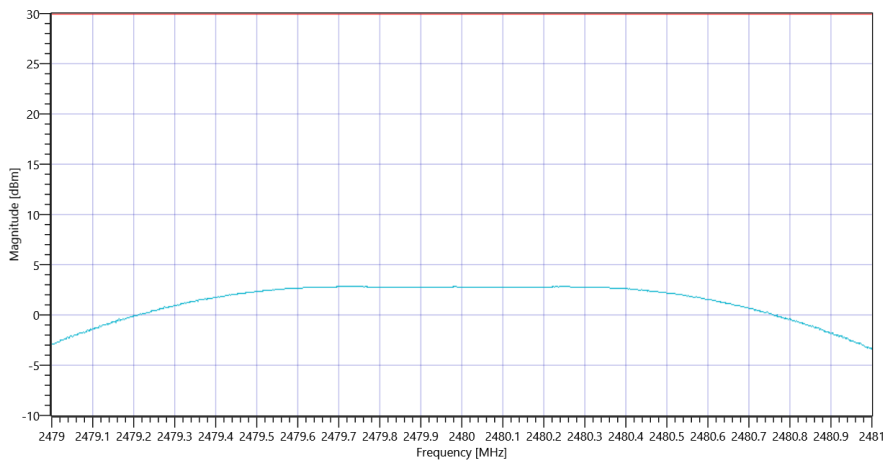


Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS BT LE 1 Msps DTS BW \_25092018\_134300.png

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 12.76    |
| Ref. Lev. offs [dB]    | 10.26    |
| Input Attenuation [dB] | 20       |
| Freq. Start [MHz]      | 2479.000 |
| Freq. Stop [MHz]       | 2481.000 |
| Resolution BW. [MHz]   | 1.000000 |
| Video BW. [MHz]        | 5.000000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

| RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 |             |             |          |      |             |
|--------------------------------------------------------------------|-------------|-------------|----------|------|-------------|
| Test Description                                                   | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
| Peak Power                                                         | ---         | 30.00       | 2.8      | dBm  | PASS        |
| Peak Power                                                         | ---         | 1000        | 1.905461 | mW   | PASS        |
| Frequency at Peak                                                  | ---         | ---         | 2479.724 | MHz  | Information |



Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS BT LE 1 Msps\_25092018\_134314.png

|                 |                                 |      |
|-----------------|---------------------------------|------|
| TEST FINISHED   |                                 |      |
| General Verdict | 25.09.2018 13:43:14 / RT: 162 s | PASS |

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

| Test References            |                                                                                             |
|----------------------------|---------------------------------------------------------------------------------------------|
| TC Start                   | 25.09.2018 13:43:16                                                                         |
| System Version             | 1.0.0.10                                                                                    |
| Test Specification         | FCC Part 15.247                                                                             |
| Test Method                | DTS: KDB 558074 D01 V04 - Chapter 9.1.1 RBW >= DTS Bandwidth                                |
| Class / TC Version / TC ID | TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 Version: 0.0.1   TCID_FCC15247_3 |
| My Description             | FCC 15.247 Maximum Peak Output Power Conducted DTS - BT LE 2 Msps                           |
| Add. Information           |                                                                                             |

| Test Parameter         |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Technology to test     | BT LE 2 Msps                                                                                            |
| Antenna Port used      | 1                                                                                                       |
| Temperature            | mid                                                                                                     |
| Voltage                | mid                                                                                                     |
| Frequency low to test  | True   Freq [MHz] 2402                                                                                  |
| Frequency mid to test  | True   Freq [MHz] 2440                                                                                  |
| Frequency high to test | True   Freq [MHz] 2480                                                                                  |
| Pattern                | PRBS9                                                                                                   |
| Switched Path          | IUT - SignalingUnit - SpectrumAnalyzer                                                                  |
| Devices in use         | SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.40   SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40 |

## Test at TX 2402 MHz

### RESULT: DTM Connection check

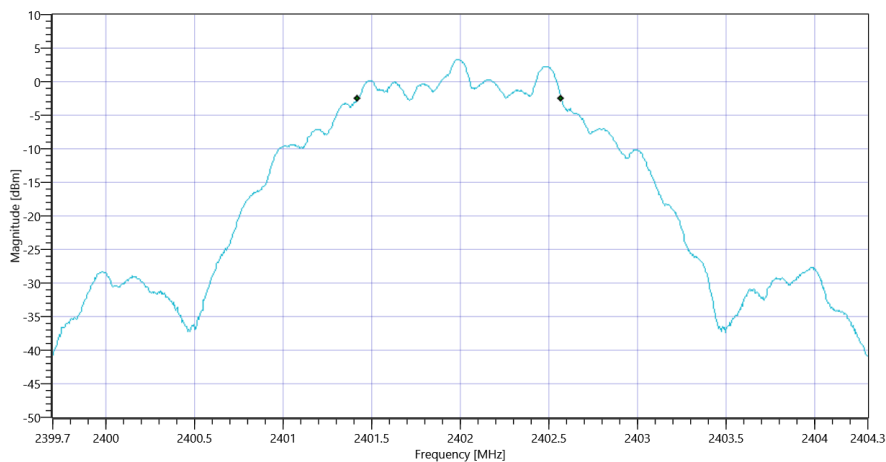
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 8.40     |
| Ref. Lev. offs [dB]    | 10.09    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2399.700 |
| Freq. Stop [MHz]       | 2404.300 |
| Resolution BW. [MHz]   | 0.100000 |
| Video BW. [MHz]        | 0.300000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: DTS Bandwidth

| Test Description    | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|---------------------|-------------|-------------|----------|------|-------------|
| DTS Bandwidth (6dB) | ---         | ---         | 1.15     | MHz  | Information |

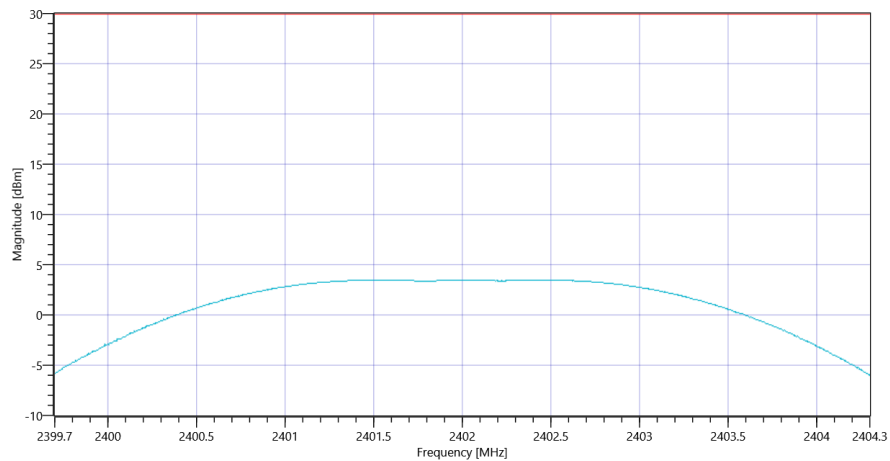


Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS BT LE 2 Msps DTS BW \_25092018\_134352.png

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 13.40    |
| Ref. Lev. offs [dB]    | 10.09    |
| Input Attenuation [dB] | 20       |
| Freq. Start [MHz]      | 2399.700 |
| Freq. Stop [MHz]       | 2404.300 |
| Resolution BW. [MHz]   | 2.000000 |
| Video BW. [MHz]        | 5.000000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

| RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 |             |             |          |      |             |
|--------------------------------------------------------------------|-------------|-------------|----------|------|-------------|
| Test Description                                                   | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
| Peak Power                                                         | ---         | 30.00       | 3.45     | dBm  | PASS        |
| Peak Power                                                         | ---         | 1000        | 2.213095 | mW   | PASS        |
| Frequency at Peak                                                  | ---         | ---         | 2401.49  | MHz  | Information |



Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS BT LE 2 Msps\_25092018\_134406.png

## Test at TX 2440 MHz

### RESULT: DTM Connection check

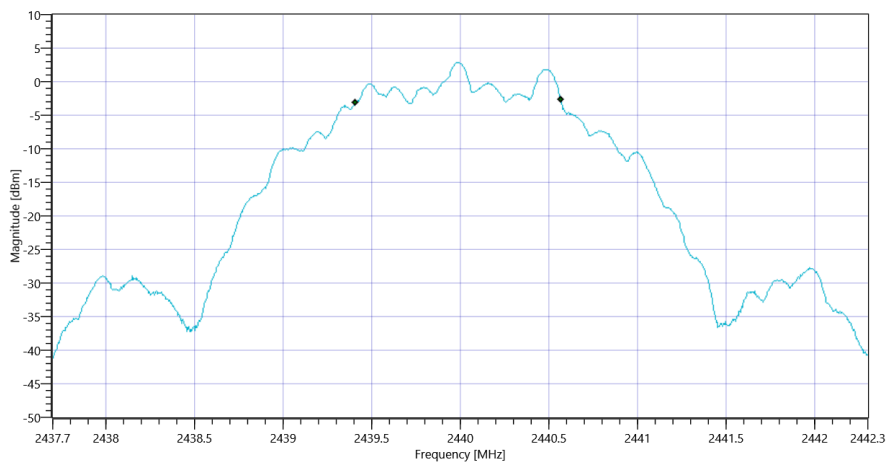
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.98     |
| Ref. Lev. offs [dB]    | 10.21    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2437.700 |
| Freq. Stop [MHz]       | 2442.300 |
| Resolution BW. [MHz]   | 0.100000 |
| Video BW. [MHz]        | 0.300000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: DTS Bandwidth

| Test Description    | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|---------------------|-------------|-------------|----------|------|-------------|
| DTS Bandwidth (6dB) | ---         | ---         | 1.155    | MHz  | Information |

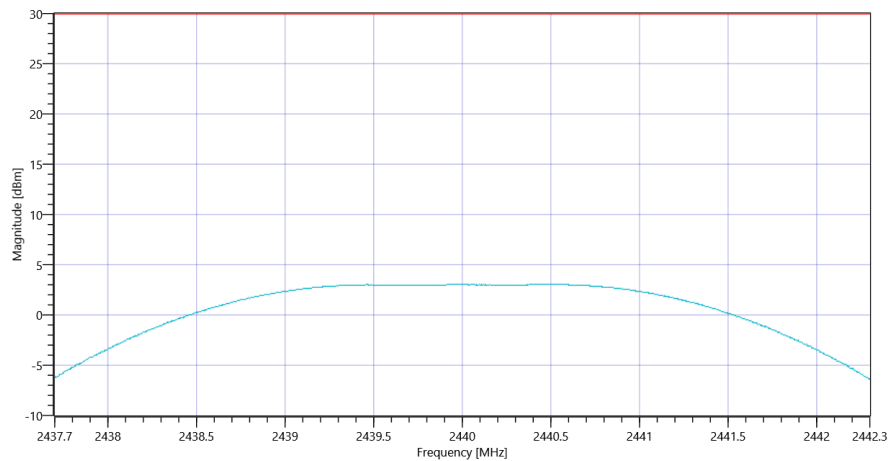


Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS BT LE 2 Msps DTS BW \_25092018\_134447.png

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 12.98    |
| Ref. Lev. offs [dB]    | 10.21    |
| Input Attenuation [dB] | 20       |
| Freq. Start [MHz]      | 2437.700 |
| Freq. Stop [MHz]       | 2442.300 |
| Resolution BW. [MHz]   | 2.000000 |
| Video BW. [MHz]        | 5.000000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

| RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 |             |             |          |      |             |
|--------------------------------------------------------------------|-------------|-------------|----------|------|-------------|
| Test Description                                                   | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
| Peak Power                                                         | ---         | 30.00       | 3.03     | dBm  | PASS        |
| Peak Power                                                         | ---         | 1000        | 2.009093 | mW   | PASS        |
| Frequency at Peak                                                  | ---         | ---         | 2440.469 | MHz  | Information |



Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS BT LE 2 Msps\_25092018\_134502.png

## Test at TX 2480 MHz

### RESULT: DTM Connection check

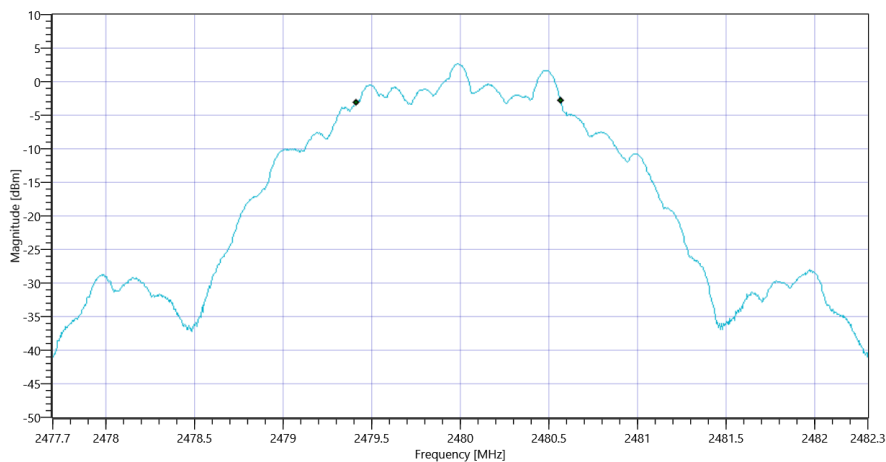
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.75     |
| Ref. Lev. offs [dB]    | 10.26    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2477.700 |
| Freq. Stop [MHz]       | 2482.300 |
| Resolution BW. [MHz]   | 0.100000 |
| Video BW. [MHz]        | 0.300000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: DTS Bandwidth

| Test Description    | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|---------------------|-------------|-------------|----------|------|-------------|
| DTS Bandwidth (6dB) | ---         | ---         | 1.15     | MHz  | Information |

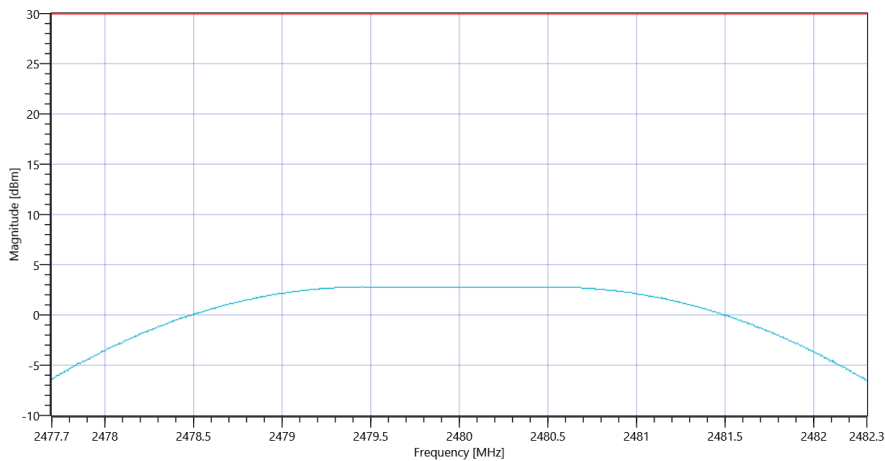


Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS BT LE 2 Msps DTS BW \_25092018\_134543.png

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 12.75    |
| Ref. Lev. offs [dB]    | 10.26    |
| Input Attenuation [dB] | 20       |
| Freq. Start [MHz]      | 2477.700 |
| Freq. Stop [MHz]       | 2482.300 |
| Resolution BW. [MHz]   | 2.000000 |
| Video BW. [MHz]        | 5.000000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

| RESULT: TC_VM_FCC15247_Maximum_Peak_Conducted_Output_Power_DTS_V01 |             |             |          |      |             |
|--------------------------------------------------------------------|-------------|-------------|----------|------|-------------|
| Test Description                                                   | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
| Peak Power                                                         | ---         | 30.00       | 2.8      | dBm  | PASS        |
| Peak Power                                                         | ---         | 1000        | 1.905461 | mW   | PASS        |
| Frequency at Peak                                                  | ---         | ---         | 2479.453 | MHz  | Information |



Plot\_FCC Part 15.247 Maximum Peak Conducted Output Power DTS BT LE 2 Msps\_25092018\_134557.png

|                 |                                 |      |
|-----------------|---------------------------------|------|
| TEST FINISHED   |                                 |      |
| General Verdict | 25.09.2018 13:45:58 / RT: 161 s | PASS |

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

| Test References            |                                                                       |
|----------------------------|-----------------------------------------------------------------------|
| TC Start                   | 25.09.2018 13:47:35                                                   |
| System Version             | 1.0.0.10                                                              |
| Test Specification         | FCC Part 15.247                                                       |
| Test Method                | DTS: KDB 558074 D01 V04 - Chapter 8.1 DTS Bandwidth                   |
| Class / TC Version / TC ID | TC_VM_FCC15247_Bandwidth_6dB_DTS_V01 Version: 0.0.1   TCID_FCC15247_1 |
| My Description             | FCC 15.247 Bandwidth 6dB DTS - BT LE 1 Msps                           |
| Add. Information           |                                                                       |

| Test Parameter         |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Technology to test     | BT LE 1 Msps                                                                                            |
| Antenna Port used      | 1                                                                                                       |
| Temperature            | mid                                                                                                     |
| Voltage                | mid                                                                                                     |
| Frequency low to test  | True   Freq [MHz] 2402                                                                                  |
| Frequency mid to test  | True   Freq [MHz] 2440                                                                                  |
| Frequency high to test | True   Freq [MHz] 2480                                                                                  |
| Pattern                | PRBS9                                                                                                   |
| Switched Path          | IUT - SignalingUnit - SpectrumAnalyzer                                                                  |
| Devices in use         | SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.40   SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40 |

## Test at TX 2402 MHz

### RESULT: DTM Connection check

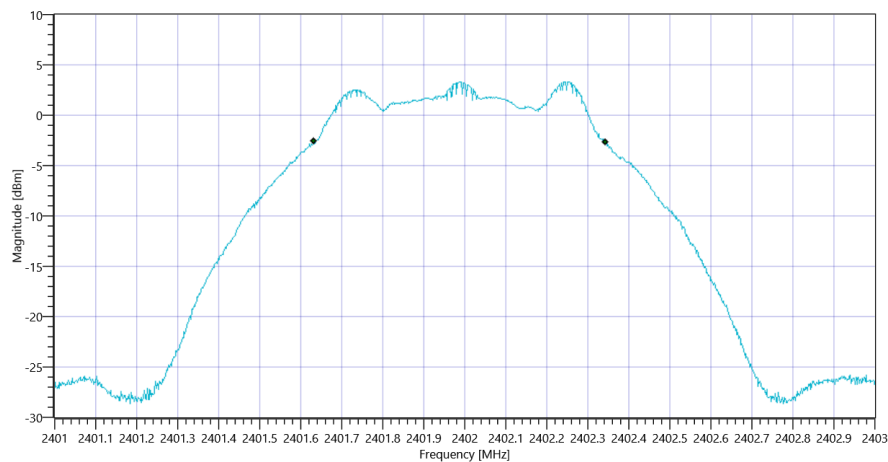
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 8.40     |
| Ref. Lev. offs [dB]    | 10.09    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2401.000 |
| Freq. Stop [MHz]       | 2403.000 |
| Resolution BW. [MHz]   | 0.100000 |
| Video BW. [MHz]        | 0.300000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: TC\_VM\_FCC15247\_Bandwidth\_6dB\_DTS\_V01

| Test Description    | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | 0.500       | ---         | 0.71     | MHz  | PASS    |



Plot\_FCC Part 15.247 Bandwidth 6dB DTS BT LE 1 Msps\_25092018\_134811.png

## Test at TX 2440 MHz

### RESULT: DTM Connection check

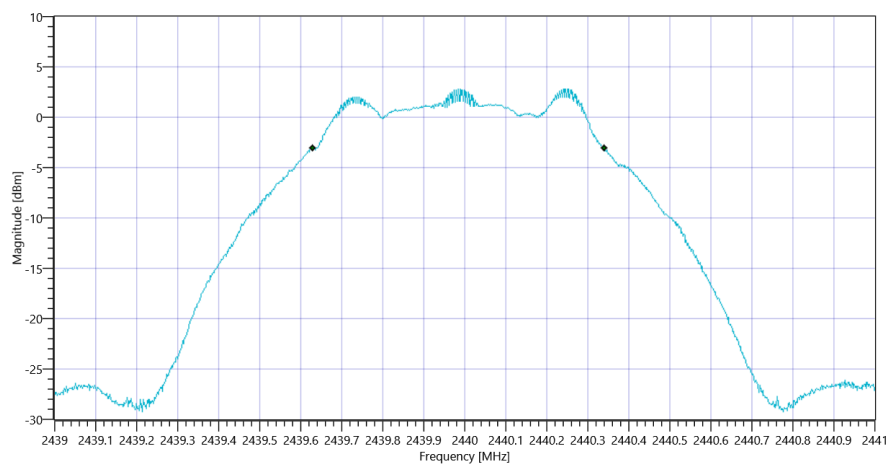
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.96     |
| Ref. Lev. offs [dB]    | 10.21    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2439.000 |
| Freq. Stop [MHz]       | 2441.000 |
| Resolution BW. [MHz]   | 0.100000 |
| Video BW. [MHz]        | 0.300000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: TC\_VM\_FCC15247\_Bandwidth\_6dB\_DTS\_V01

| Test Description    | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | 0.500       | ---         | 0.71     | MHz  | PASS    |



Plot\_FCC Part 15.247 Bandwidth 6dB DTS BT LE 1 Msps\_25092018\_134852.png

## Test at TX 2480 MHz

RESULT: DTM Connection check

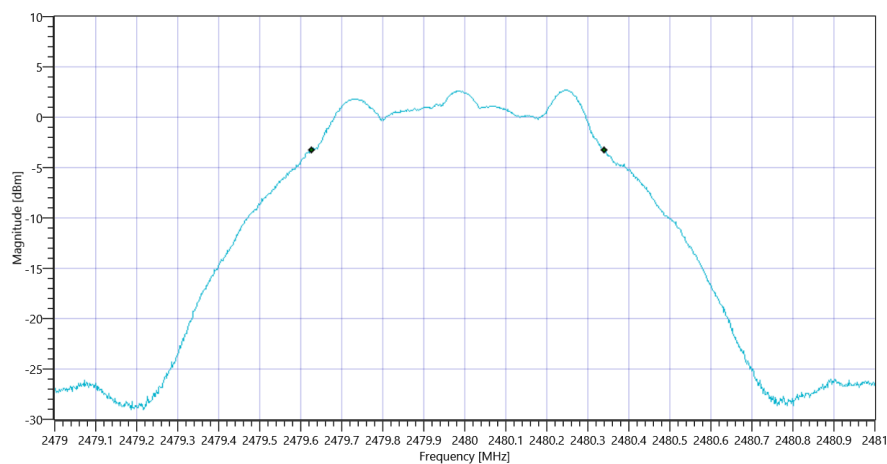
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.67     |
| Ref. Lev. offs [dB]    | 10.26    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2479.000 |
| Freq. Stop [MHz]       | 2481.000 |
| Resolution BW. [MHz]   | 0.100000 |
| Video BW. [MHz]        | 0.300000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

RESULT: TC\_VM\_FCC15247\_Bandwidth\_6dB\_DTS\_V01

| Test Description    | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | 0.500       | ---         | 0.714    | MHz  | PASS    |



Plot\_FCC Part 15.247 Bandwidth 6dB DTS BT LE 1 Msps\_25092018\_134933.png

TEST FINISHED

General Verdict

25.09.2018 13:49:33 / RT: 118 s

PASS

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

| Test References            |                                                                       |
|----------------------------|-----------------------------------------------------------------------|
| TC Start                   | 25.09.2018 13:49:34                                                   |
| System Version             | 1.0.0.10                                                              |
| Test Specification         | FCC Part 15.247                                                       |
| Test Method                | DTS: KDB 558074 D01 V04 - Chapter 8.1 DTS Bandwidth                   |
| Class / TC Version / TC ID | TC_VM_FCC15247_Bandwidth_6dB_DTS_V01 Version: 0.0.1   TCID_FCC15247_1 |
| My Description             | FCC 15.247 Bandwidth 6dB DTS - BT LE 2 Msps                           |
| Add. Information           |                                                                       |

| Test Parameter         |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Technology to test     | BT LE 2 Msps                                                                                            |
| Antenna Port used      | 1                                                                                                       |
| Temperature            | mid                                                                                                     |
| Voltage                | mid                                                                                                     |
| Frequency low to test  | True   Freq [MHz] 2402                                                                                  |
| Frequency mid to test  | True   Freq [MHz] 2440                                                                                  |
| Frequency high to test | True   Freq [MHz] 2480                                                                                  |
| Pattern                | PRBS9                                                                                                   |
| Switched Path          | IUT - SignalingUnit - SpectrumAnalyzer                                                                  |
| Devices in use         | SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.40   SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40 |

## Test at TX 2402 MHz

RESULT: DTM Connection check

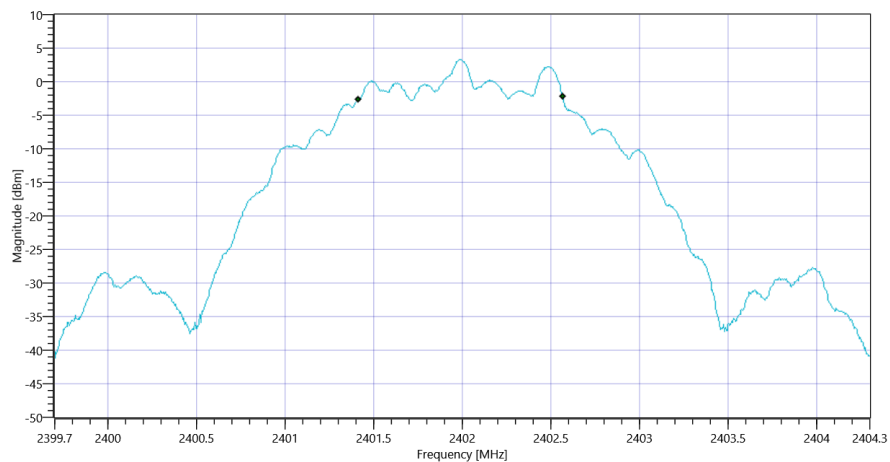
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 8.32     |
| Ref. Lev. offs [dB]    | 10.09    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2399.700 |
| Freq. Stop [MHz]       | 2404.300 |
| Resolution BW. [MHz]   | 0.100000 |
| Video BW. [MHz]        | 0.300000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

RESULT: TC\_VM\_FCC15247\_Bandwidth\_6dB\_DTS\_V01

| Test Description    | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | 0.500       | ---         | 1.15     | MHz  | PASS    |



Plot\_FCC Part 15.247 Bandwidth 6dB DTS BT LE 2 Msps\_25092018\_135010.png

## Test at TX 2440 MHz

RESULT: DTM Connection check

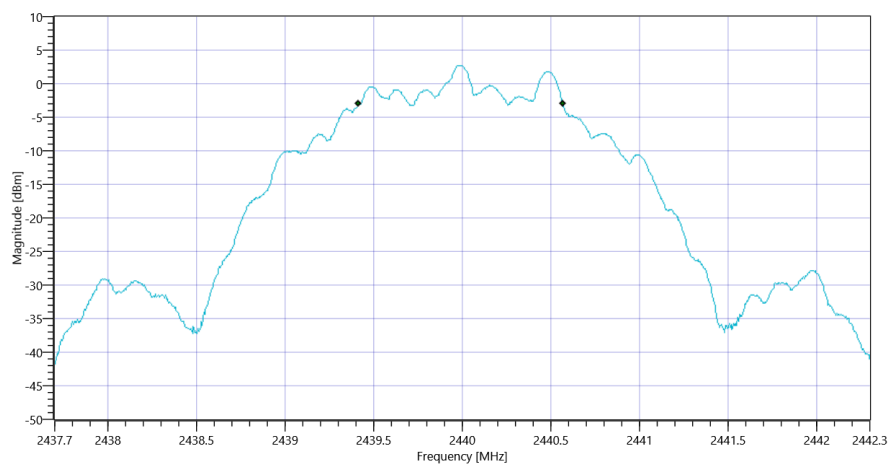
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.92     |
| Ref. Lev. offs [dB]    | 10.21    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2437.700 |
| Freq. Stop [MHz]       | 2442.300 |
| Resolution BW. [MHz]   | 0.100000 |
| Video BW. [MHz]        | 0.300000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

RESULT: TC\_VM\_FCC15247\_Bandwidth\_6dB\_DTS\_V01

| Test Description    | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | 0.500       | ---         | 1.15     | MHz  | PASS    |



Plot\_FCC Part 15.247 Bandwidth 6dB DTS BT LE 2 Msps\_25092018\_135051.png

## Test at TX 2480 MHz

RESULT: DTM Connection check

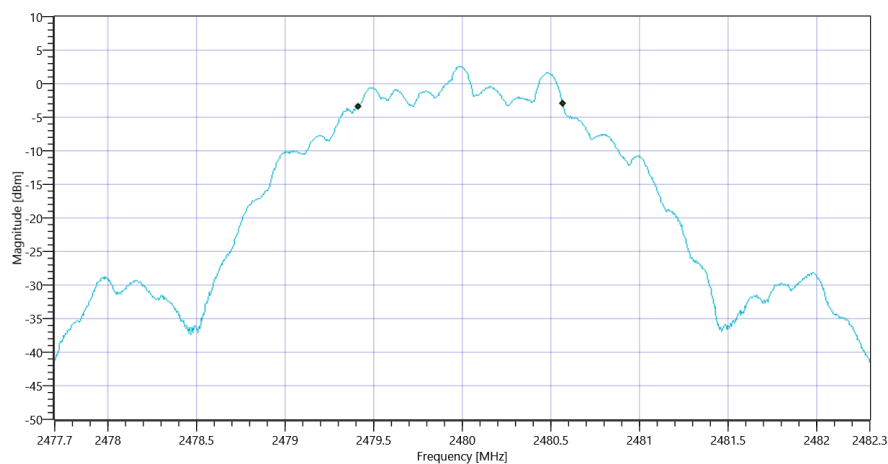
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.65     |
| Ref. Lev. offs [dB]    | 10.26    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2477.700 |
| Freq. Stop [MHz]       | 2482.300 |
| Resolution BW. [MHz]   | 0.100000 |
| Video BW. [MHz]        | 0.300000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

RESULT: TC\_VM\_FCC15247\_Bandwidth\_6dB\_DTS\_V01

| Test Description    | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|---------------------|-------------|-------------|----------|------|---------|
| DTS Bandwidth (6dB) | 0.500       | ---         | 1.15     | MHz  | PASS    |



Plot\_FCC Part 15.247 Bandwidth 6dB DTS BT LE 2 Msps\_25092018\_135132.png

TEST FINISHED

General Verdict

25.09.2018 13:51:32 / RT: 117 s

PASS

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

| Test References            |                                                                                     |
|----------------------------|-------------------------------------------------------------------------------------|
| TC Start                   | 25.09.2018 13:51:34                                                                 |
| System Version             | 1.0.0.10                                                                            |
| Test Specification         | FCC Part 15.247                                                                     |
| Test Method                | DTS: KDB 558074 D01 V04 - Chapter 10.2 Peak PSD                                     |
| Class / TC Version / TC ID | TC_VM_FCC15247_Peak_Power_Spectral_Density_DTS_V01 Version: 0.0.1   TCID_FCC15247_6 |
| My Description             | FCC 15.247 Peak Power Spectral Density DTS - BT LE 1 Msps                           |
| Add. Information           |                                                                                     |

| Test Parameter         |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Technology to test     | BT LE 1 Msps                                                                                            |
| Antenna Port used      | 1                                                                                                       |
| Temperature            | mid                                                                                                     |
| Voltage                | mid                                                                                                     |
| Frequency low to test  | True   Freq [MHz] 2402                                                                                  |
| Frequency mid to test  | True   Freq [MHz] 2440                                                                                  |
| Frequency high to test | True   Freq [MHz] 2480                                                                                  |
| Pattern                | PRBS9                                                                                                   |
| Switched Path          | IUT - SignalingUnit - SpectrumAnalyzer                                                                  |
| Devices in use         | SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.40   SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40 |

## Test at TX 2402 MHz

RESULT: DTM Connection check

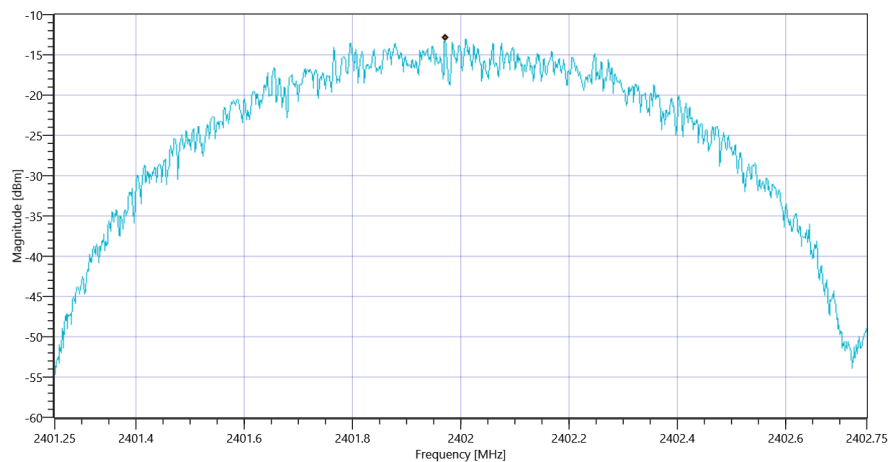
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 8.35     |
| Ref. Lev. offs [dB]    | 10.09    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2401.250 |
| Freq. Stop [MHz]       | 2402.750 |
| Resolution BW. [MHz]   | 0.003000 |
| Video BW. [MHz]        | 0.010000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 20       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

RESULT: TC\_VM\_FCC15247\_Peak\_Power\_Spectral\_Density\_DTS\_V01

| Test Description       | Lower Limit | Upper Limit | Measured | Unit     | Verdict |
|------------------------|-------------|-------------|----------|----------|---------|
| Max Peak power Density | ---         | 8           | -12.9    | dBm/3KHz | PASS    |



Plot\_FCC Part 15.247 Peak Power Spectral Density DTS BT LE 1 Msps\_25092018\_135220.png

## Test at TX 2440 MHz

RESULT: DTM Connection check

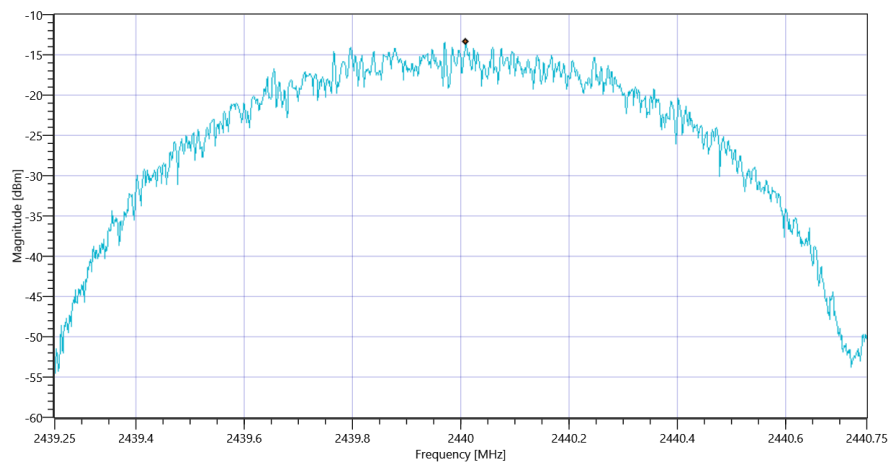
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.90     |
| Ref. Lev. offs [dB]    | 10.21    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2439.250 |
| Freq. Stop [MHz]       | 2440.750 |
| Resolution BW. [MHz]   | 0.003000 |
| Video BW. [MHz]        | 0.010000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 20       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

RESULT: TC\_VM\_FCC15247\_Peak\_Power\_Spectral\_Density\_DTS\_V01

| Test Description       | Lower Limit | Upper Limit | Measured | Unit     | Verdict |
|------------------------|-------------|-------------|----------|----------|---------|
| Max Peak power Density | ---         | 8           | -13.38   | dBm/3KHz | PASS    |



Plot\_FCC Part 15.247 Peak Power Spectral Density DTS BT LE 1 Msps\_25092018\_135310.png

## Test at TX 2480 MHz

RESULT: DTM Connection check

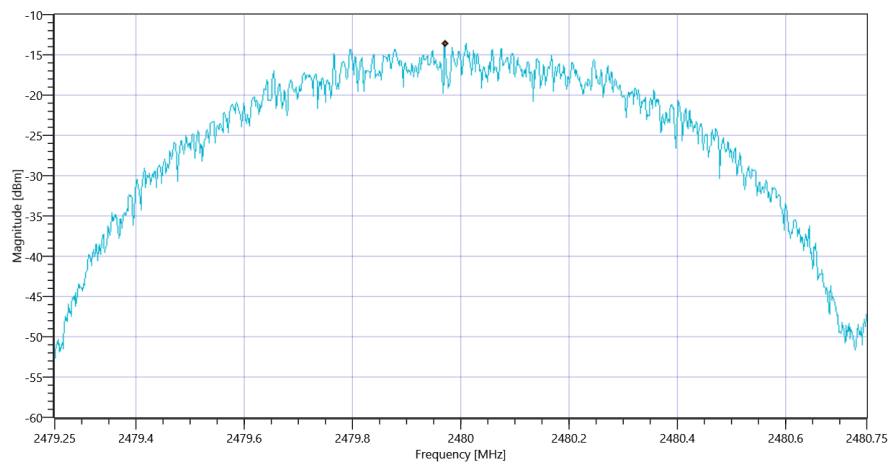
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.61     |
| Ref. Lev. offs [dB]    | 10.26    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2479.250 |
| Freq. Stop [MHz]       | 2480.750 |
| Resolution BW. [MHz]   | 0.003000 |
| Video BW. [MHz]        | 0.010000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 20       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

RESULT: TC\_VM\_FCC15247\_Peak\_Power\_Spectral\_Density\_DTS\_V01

| Test Description       | Lower Limit | Upper Limit | Measured | Unit     | Verdict |
|------------------------|-------------|-------------|----------|----------|---------|
| Max Peak power Density | ---         | 8           | -13.59   | dBm/3KHz | PASS    |



TEST FINISHED

General Verdict 25.09.2018 13:54:01 / RT: 147 s

PASS

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

| Test References            |                                                                                     |
|----------------------------|-------------------------------------------------------------------------------------|
| TC Start                   | 25.09.2018 13:54:03                                                                 |
| System Version             | 1.0.0.10                                                                            |
| Test Specification         | FCC Part 15.247                                                                     |
| Test Method                | DTS: KDB 558074 D01 V04 - Chapter 10.2 Peak PSD                                     |
| Class / TC Version / TC ID | TC_VM_FCC15247_Peak_Power_Spectral_Density_DTS_V01 Version: 0.0.1   TCID_FCC15247_6 |
| My Description             | FCC 15.247 Peak Power Spectral Density DTS - BT LE 2 Msps                           |
| Add. Information           |                                                                                     |

| Test Parameter         |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Technology to test     | BT LE 2 Msps                                                                                            |
| Antenna Port used      | 1                                                                                                       |
| Temperature            | mid                                                                                                     |
| Voltage                | mid                                                                                                     |
| Frequency low to test  | True   Freq [MHz] 2402                                                                                  |
| Frequency mid to test  | True   Freq [MHz] 2440                                                                                  |
| Frequency high to test | True   Freq [MHz] 2480                                                                                  |
| Pattern                | PRBS9                                                                                                   |
| Switched Path          | IUT - SignalingUnit - SpectrumAnalyzer                                                                  |
| Devices in use         | SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.40   SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40 |

## Test at TX 2402 MHz

RESULT: DTM Connection check

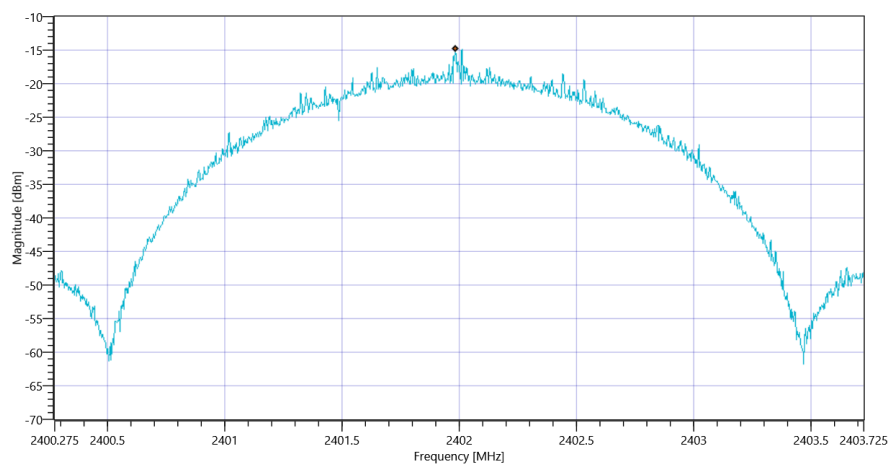
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 8.28     |
| Ref. Lev. offs [dB]    | 10.09    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2400.275 |
| Freq. Stop [MHz]       | 2403.725 |
| Resolution BW. [MHz]   | 0.003000 |
| Video BW. [MHz]        | 0.010000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 20       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

RESULT: TC\_VM\_FCC15247\_Peak\_Power\_Spectral\_Density\_DTS\_V01

| Test Description       | Lower Limit | Upper Limit | Measured | Unit     | Verdict |
|------------------------|-------------|-------------|----------|----------|---------|
| Max Peak power Density | ---         | 8           | -14.85   | dBm/3KHz | PASS    |



Plot\_FCC Part 15.247 Peak Power Spectral Density DTS BT LE 2 Msps\_25092018\_135449.png

## Test at TX 2440 MHz

RESULT: DTM Connection check

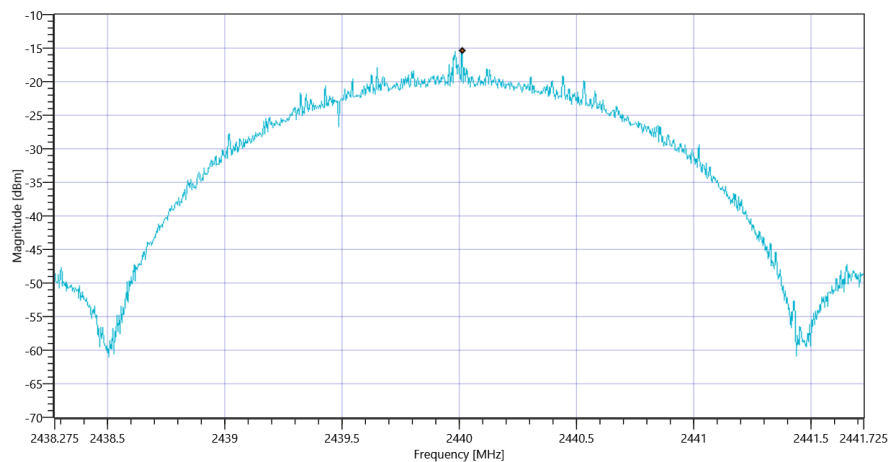
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.87     |
| Ref. Lev. offs [dB]    | 10.21    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2438.275 |
| Freq. Stop [MHz]       | 2441.725 |
| Resolution BW. [MHz]   | 0.003000 |
| Video BW. [MHz]        | 0.010000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 20       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

RESULT: TC\_VM\_FCC15247\_Peak\_Power\_Spectral\_Density\_DTS\_V01

| Test Description       | Lower Limit | Upper Limit | Measured | Unit     | Verdict |
|------------------------|-------------|-------------|----------|----------|---------|
| Max Peak power Density | ---         | 8           | -15.46   | dBm/3KHz | PASS    |



Plot\_FCC Part 15.247 Peak Power Spectral Density DTS BT LE 2 Msps\_25092018\_135540.png

## Test at TX 2480 MHz

RESULT: DTM Connection check

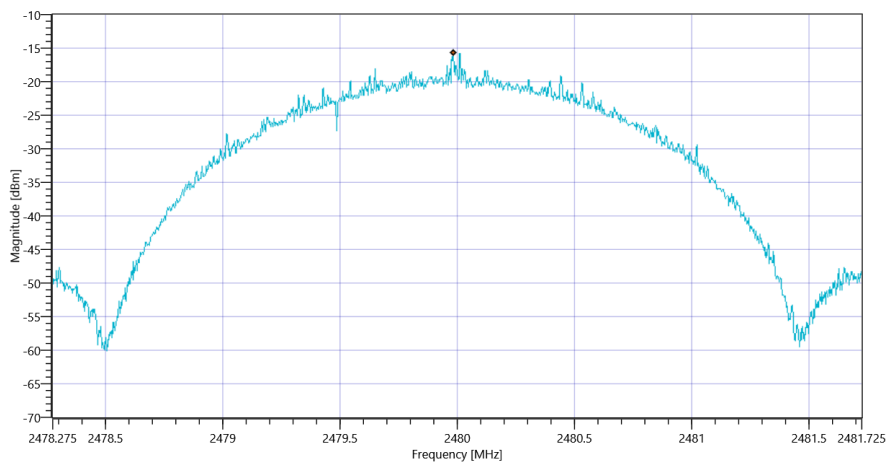
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.60     |
| Ref. Lev. offs [dB]    | 10.26    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2478.275 |
| Freq. Stop [MHz]       | 2481.725 |
| Resolution BW. [MHz]   | 0.003000 |
| Video BW. [MHz]        | 0.010000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 20       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

RESULT: TC\_VM\_FCC15247\_Peak\_Power\_Spectral\_Density\_DTS\_V01

| Test Description       | Lower Limit | Upper Limit | Measured | Unit     | Verdict |
|------------------------|-------------|-------------|----------|----------|---------|
| Max Peak power Density | ---         | 8           | -15.68   | dBm/3KHz | PASS    |



Plot\_FCC Part 15.247 Peak Power Spectral Density DTS BT LE 2 Msps\_25092018\_135631.png

TEST FINISHED

General Verdict

25.09.2018 13:56:32 / RT: 148 s

PASS

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

| Test References            |                                                                                   |
|----------------------------|-----------------------------------------------------------------------------------|
| TC Start                   | 25.09.2018 13:56:33                                                               |
| System Version             | 1.0.0.10                                                                          |
| Test Specification         | FCC Part 15.247                                                                   |
| Test Method                |                                                                                   |
| Class / TC Version / TC ID | TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 Version: 0.0.2   TCID_FCC15247_2 |
| My Description             | FCC 15.247 Bandwidth 99PCT - 20dB DTS - BT LE 1 Msps                              |
| Add. Information           |                                                                                   |

| Test Parameter         |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Technology to test     | BT LE 1 Msps                                                                                            |
| Antenna Port used      | 1                                                                                                       |
| Temperature            | mid                                                                                                     |
| Voltage                | mid                                                                                                     |
| Frequency low to test  | True   Freq [MHz] 2402                                                                                  |
| Frequency mid to test  | True   Freq [MHz] 2440                                                                                  |
| Frequency high to test | True   Freq [MHz] 2480                                                                                  |
| Pattern                | PRBS9                                                                                                   |
| Switched Path          | IUT - SignalingUnit - SpectrumAnalyzer                                                                  |
| Devices in use         | SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.40   SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40 |

## Test at TX 2402 MHz

### RESULT: DTM Connection check

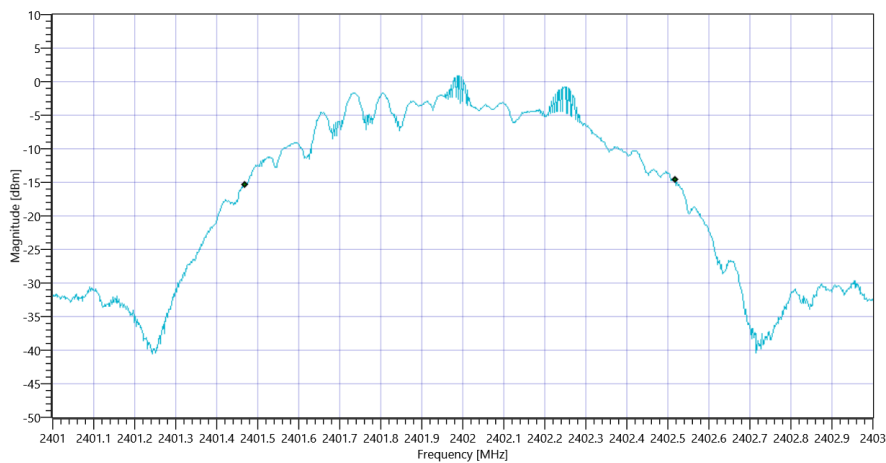
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

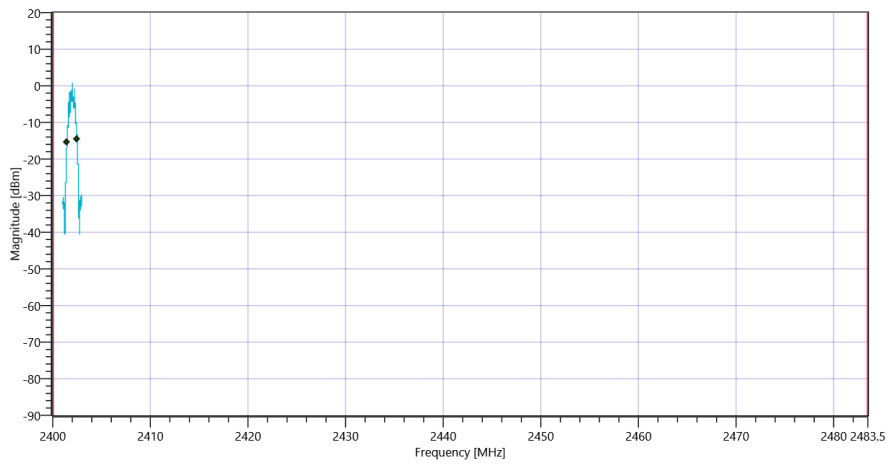
|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 8.28     |
| Ref. Lev. offs [dB]    | 10.09    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2401.000 |
| Freq. Stop [MHz]       | 2403.000 |
| Resolution BW. [MHz]   | 0.030000 |
| Video BW. [MHz]        | 0.100000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: TC\_VM\_FCC15247\_Bandwidth\_99PCT\_20dB\_DTS\_FHSS\_V01

| Test Description | Lower Limit | Upper Limit | Measured  | Unit | Verdict     |
|------------------|-------------|-------------|-----------|------|-------------|
| Bandwidth 99%    | ---         | ---         | 1.049     | MHz  | Information |
| T1               | 2400.000000 | ---         | 2401.4685 | MHz  | PASS        |
| T2               | ---         | 2483.500000 | 2402.5175 | MHz  | PASS        |

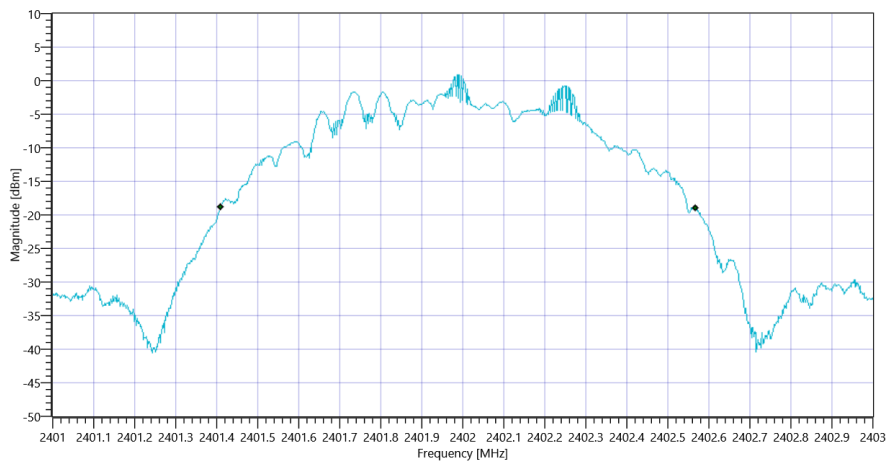


Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 1 Msps 99PCT\_25092018\_135709.png

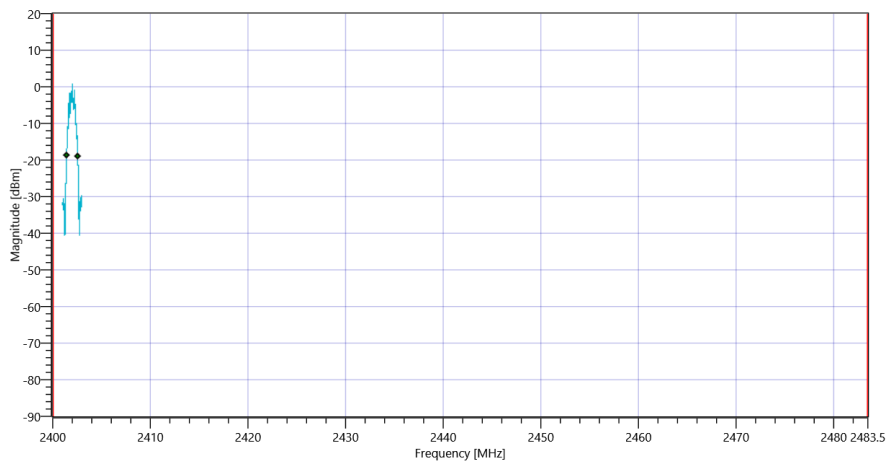


Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 1 Msps\_25092018\_135712.png

| RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 |             |             |           |      |             |
|----------------------------------------------------------|-------------|-------------|-----------|------|-------------|
| Test Description                                         | Lower Limit | Upper Limit | Measured  | Unit | Verdict     |
| Bandwidth 20dB                                           | ---         | ---         | 1.158     | MHz  | Information |
| T1 20dB                                                  | 2400.000000 | ---         | 2401.4100 | MHz  | PASS        |
| T2 20dB                                                  | ---         | 2483.500000 | 2402.5680 | MHz  | PASS        |



Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 1 Msps 20dB\_25092018\_135716.png



Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 1 Msps\_25092018\_135719.png

## Test at TX 2440 MHz

### RESULT: DTM Connection check

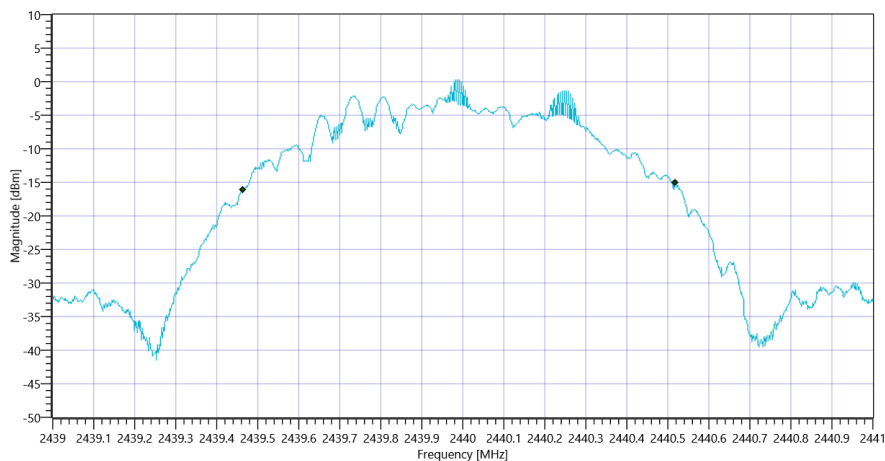
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

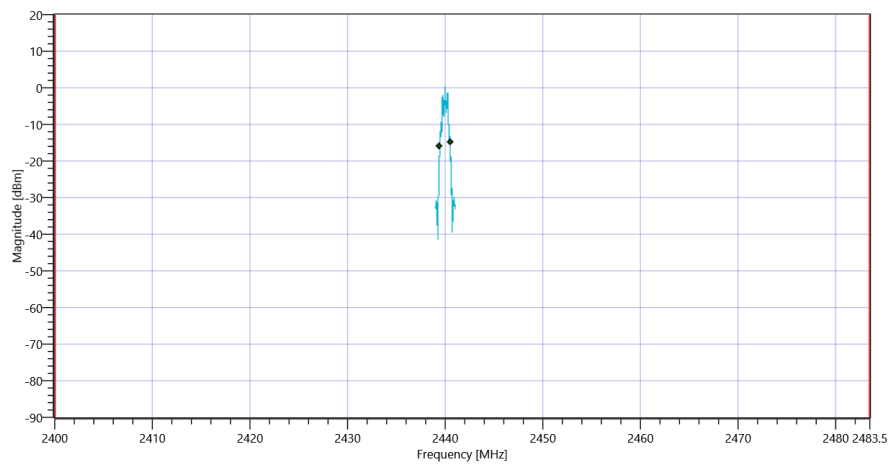
|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.84     |
| Ref. Lev. offs [dB]    | 10.21    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2439.000 |
| Freq. Stop [MHz]       | 2441.000 |
| Resolution BW. [MHz]   | 0.030000 |
| Video BW. [MHz]        | 0.100000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: TC\_VM\_FCC15247\_Bandwidth\_99PCT\_20dB\_DTS\_FHSS\_V01

| Test Description | Lower Limit | Upper Limit | Measured  | Unit | Verdict     |
|------------------|-------------|-------------|-----------|------|-------------|
| Bandwidth 99%    | ---         | ---         | 1.055     | MHz  | Information |
| T1               | 2400.000000 | ---         | 2439.4645 | MHz  | PASS        |
| T2               | ---         | 2483.500000 | 2440.5195 | MHz  | PASS        |

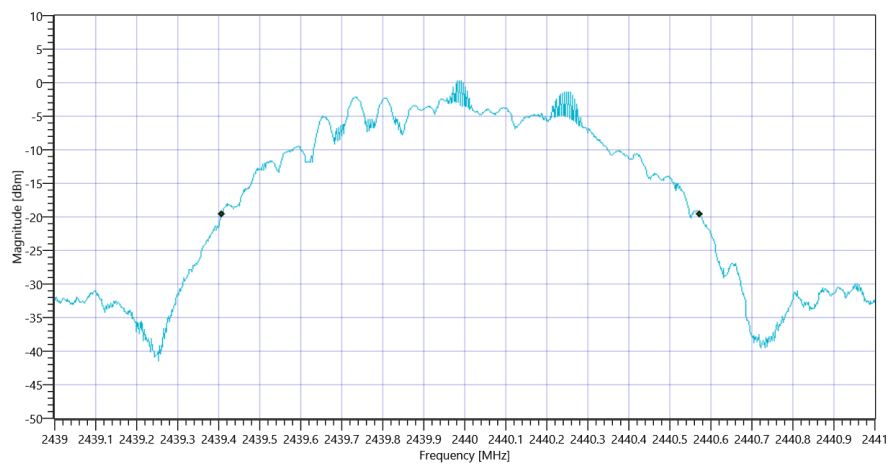


Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 1 Msps 99PCT\_25092018\_135800.png

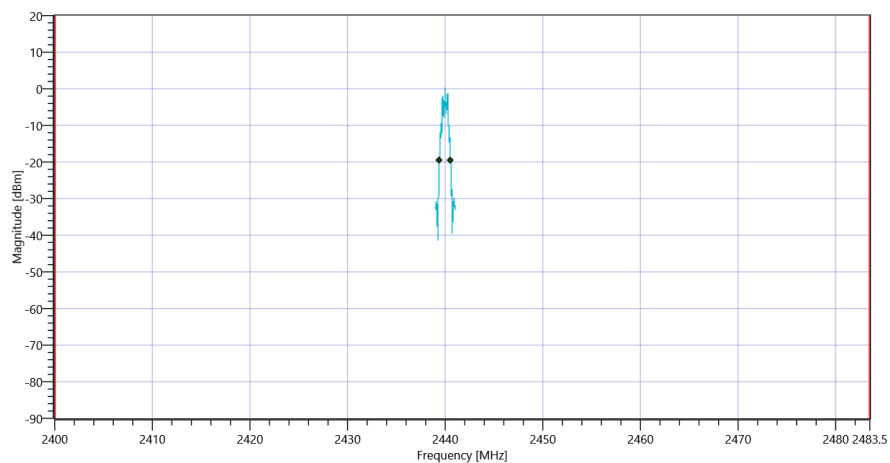


Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 1 Msps\_25092018\_135803.png

| RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 |             |             |           |      |             |
|----------------------------------------------------------|-------------|-------------|-----------|------|-------------|
| Test Description                                         | Lower Limit | Upper Limit | Measured  | Unit | Verdict     |
| Bandwidth 20dB                                           | ---         | ---         | 1.164     | MHz  | Information |
| T1 20dB                                                  | 2400.000000 | ---         | 2439.4080 | MHz  | PASS        |
| T2 20dB                                                  | ---         | 2483.500000 | 2440.5720 | MHz  | PASS        |



Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 1 Msps 20dB\_25092018\_135807.png



Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 1 Msps\_25092018\_135810.png

## Test at TX 2480 MHz

RESULT: DTM Connection check

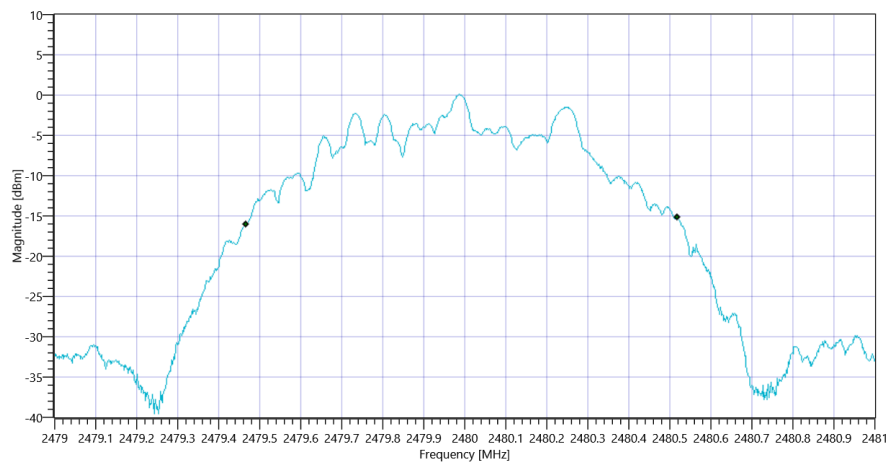
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

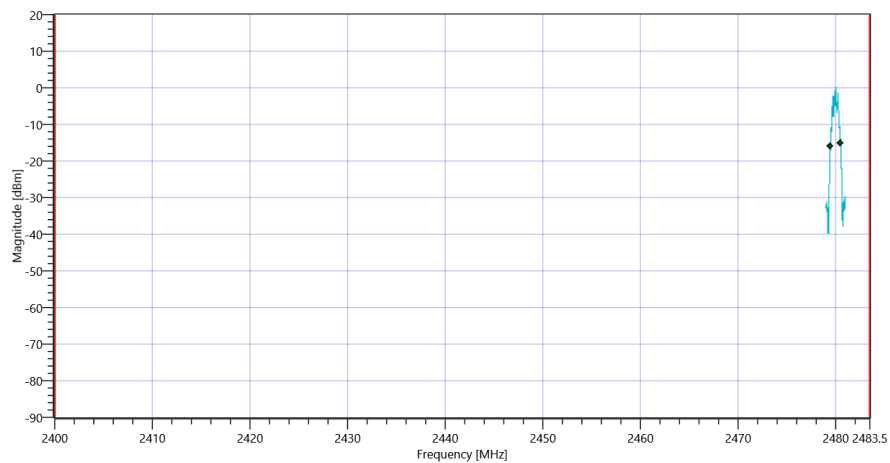
|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.56     |
| Ref. Lev. offs [dB]    | 10.26    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2479.000 |
| Freq. Stop [MHz]       | 2481.000 |
| Resolution BW. [MHz]   | 0.030000 |
| Video BW. [MHz]        | 0.100000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

RESULT: TC\_VM\_FCC15247\_Bandwidth\_99PCT\_20dB\_DTS\_FHSS\_V01

| Test Description | Lower Limit | Upper Limit | Measured  | Unit | Verdict     |
|------------------|-------------|-------------|-----------|------|-------------|
| Bandwidth 99%    | ---         | ---         | 1.051     | MHz  | Information |
| T1               | 2400.000000 | ---         | 2479.4665 | MHz  | PASS        |
| T2               | ---         | 2483.500000 | 2480.5175 | MHz  | PASS        |

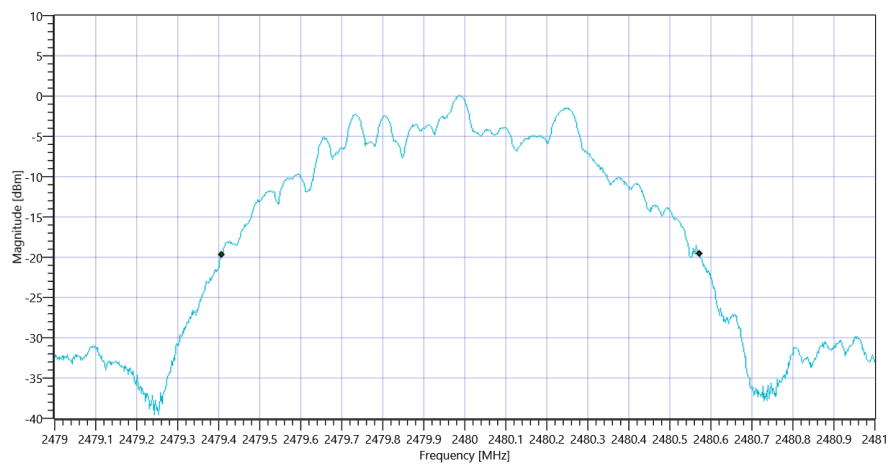


Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 1 Msps 99PCT\_25092018\_135851.png

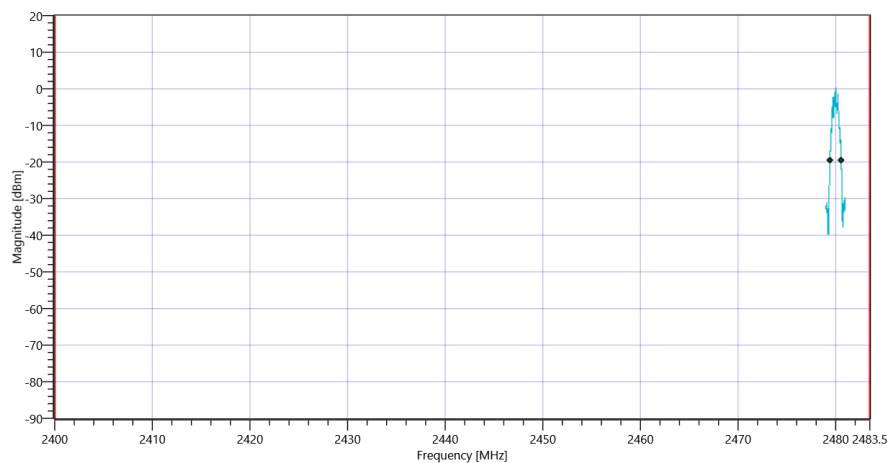


Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 1 Msps\_25092018\_135854.png

| RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 |             |             |           |      |             |
|----------------------------------------------------------|-------------|-------------|-----------|------|-------------|
| Test Description                                         | Lower Limit | Upper Limit | Measured  | Unit | Verdict     |
| Bandwidth 20dB                                           | ---         | ---         | 1.164     | MHz  | Information |
| T1 20dB                                                  | 2400.000000 | ---         | 2479.4080 | MHz  | PASS        |
| T2 20dB                                                  | ---         | 2483.500000 | 2480.5720 | MHz  | PASS        |



Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 1 Msps 20dB\_25092018\_135858.png



Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 1 Msps\_25092018\_135901.png

TEST FINISHED

General Verdict

25.09.2018 13:59:01 / RT: 148 s

PASS

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

| Test References            |                                                                                   |
|----------------------------|-----------------------------------------------------------------------------------|
| TC Start                   | 25.09.2018 13:59:03                                                               |
| System Version             | 1.0.0.10                                                                          |
| Test Specification         | FCC Part 15.247                                                                   |
| Test Method                |                                                                                   |
| Class / TC Version / TC ID | TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 Version: 0.0.2   TCID_FCC15247_2 |
| My Description             | FCC 15.247 Bandwidth 99PCT - 20dB DTS - BT LE 2 Msps                              |
| Add. Information           |                                                                                   |

| Test Parameter         |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Technology to test     | BT LE 2 Msps                                                                                            |
| Antenna Port used      | 1                                                                                                       |
| Temperature            | mid                                                                                                     |
| Voltage                | mid                                                                                                     |
| Frequency low to test  | True   Freq [MHz] 2402                                                                                  |
| Frequency mid to test  | True   Freq [MHz] 2440                                                                                  |
| Frequency high to test | True   Freq [MHz] 2480                                                                                  |
| Pattern                | PRBS9                                                                                                   |
| Switched Path          | IUT - SignalingUnit - SpectrumAnalyzer                                                                  |
| Devices in use         | SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.40   SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40 |

## Test at TX 2402 MHz

RESULT: DTM Connection check

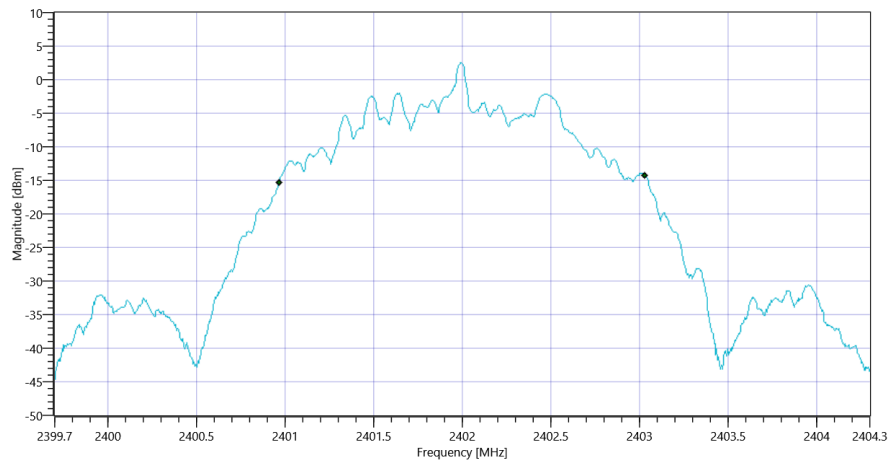
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

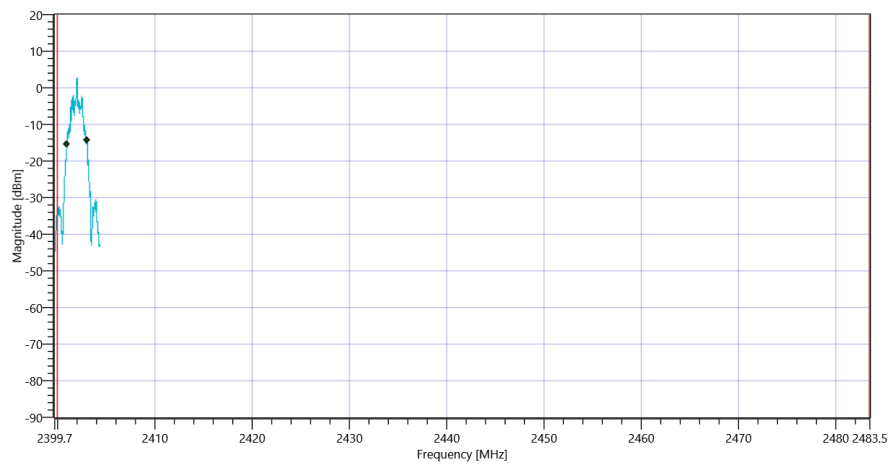
|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 8.25     |
| Ref. Lev. offs [dB]    | 10.09    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2399.700 |
| Freq. Stop [MHz]       | 2404.300 |
| Resolution BW. [MHz]   | 0.050000 |
| Video BW. [MHz]        | 0.200000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

RESULT: TC\_VM\_FCC15247\_Bandwidth\_99PCT\_20dB\_DTS\_FHSS\_V01

| Test Description | Lower Limit | Upper Limit | Measured  | Unit | Verdict     |
|------------------|-------------|-------------|-----------|------|-------------|
| Bandwidth 99%    | ---         | ---         | 2.063     | MHz  | Information |
| T1               | 2400.000000 | ---         | 2400.9706 | MHz  | PASS        |
| T2               | ---         | 2483.500000 | 2403.0340 | MHz  | PASS        |

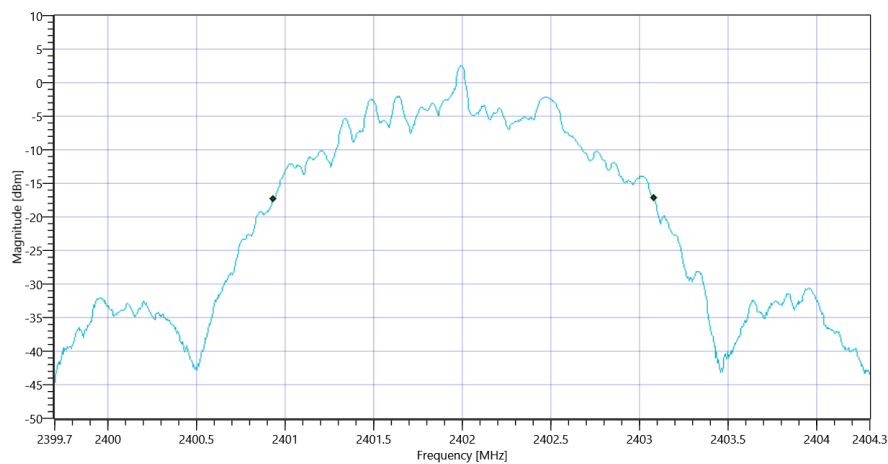


Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 2 Msps 99PCT\_25092018\_135940.png

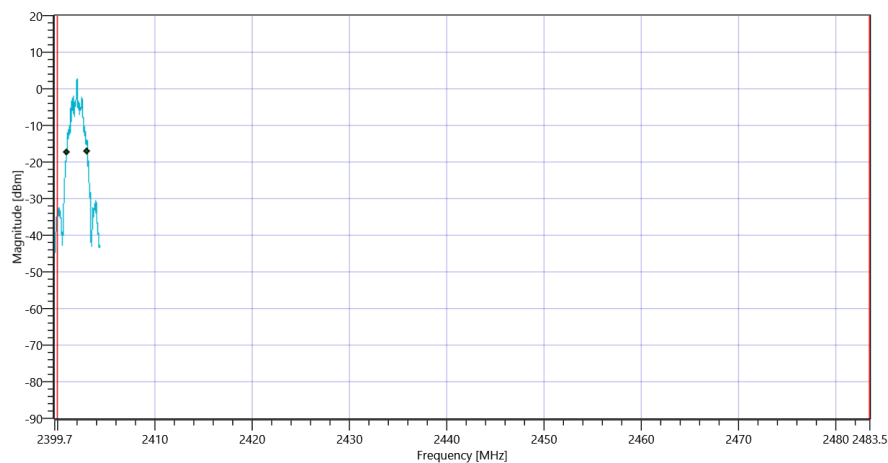


Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 2 Msps\_25092018\_135942.png

| RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 |             |             |           |      |             |
|----------------------------------------------------------|-------------|-------------|-----------|------|-------------|
| Test Description                                         | Lower Limit | Upper Limit | Measured  | Unit | Verdict     |
| Bandwidth 20dB                                           | ---         | ---         | 2.148     | MHz  | Information |
| T1 20dB                                                  | 2400.000000 | ---         | 2400.9328 | MHz  | PASS        |
| T2 20dB                                                  | ---         | 2483.500000 | 2403.0810 | MHz  | PASS        |



Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 2 Msps 20dB\_25092018\_135946.png



Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 2 Msps\_25092018\_135949.png

## Test at TX 2440 MHz

### RESULT: DTM Connection check

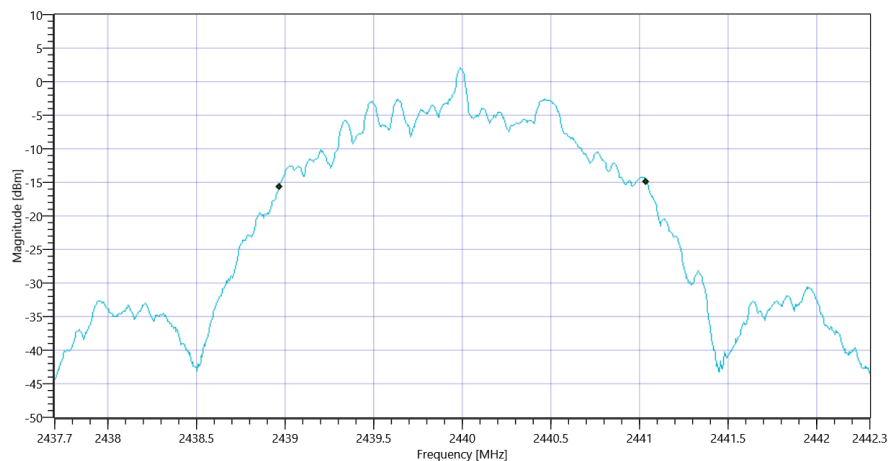
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

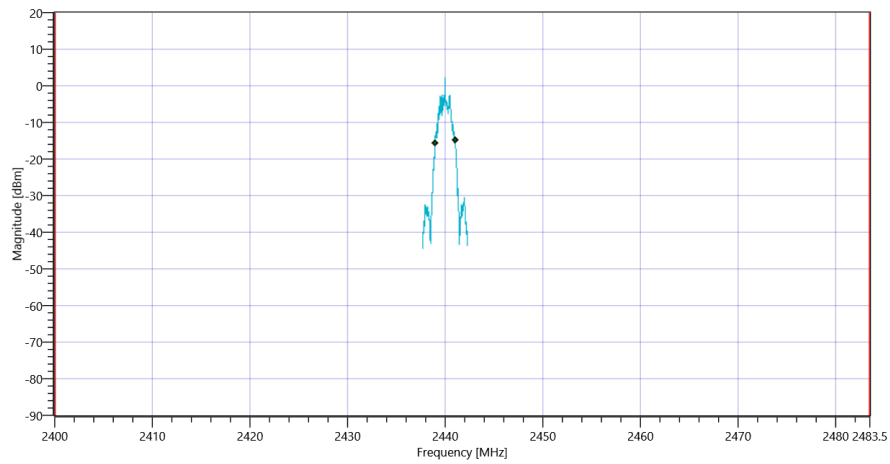
|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.83     |
| Ref. Lev. offs [dB]    | 10.21    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2437.700 |
| Freq. Stop [MHz]       | 2442.300 |
| Resolution BW. [MHz]   | 0.050000 |
| Video BW. [MHz]        | 0.200000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: TC\_VM\_FCC15247\_Bandwidth\_99PCT\_20dB\_DTS\_FHSS\_V01

| Test Description | Lower Limit | Upper Limit | Measured  | Unit | Verdict     |
|------------------|-------------|-------------|-----------|------|-------------|
| Bandwidth 99%    | ---         | ---         | 2.068     | MHz  | Information |
| T1               | 2400.000000 | ---         | 2438.9706 | MHz  | PASS        |
| T2               | ---         | 2483.500000 | 2441.0386 | MHz  | PASS        |

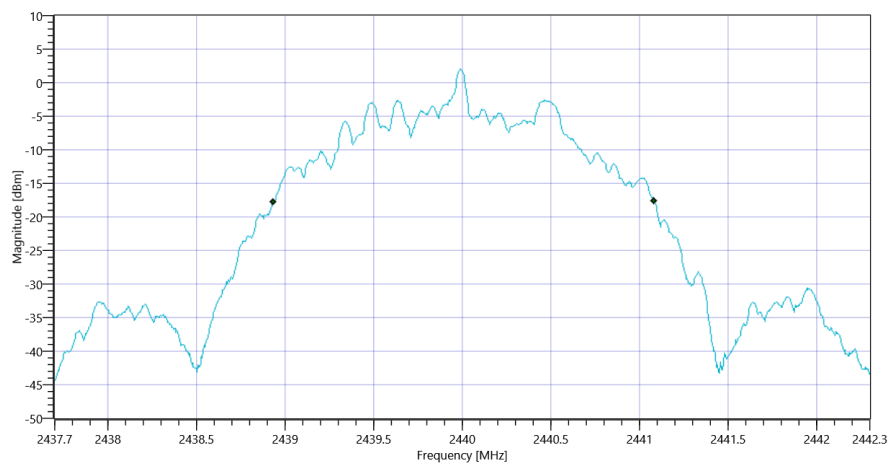


Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 2 Msps 99PCT\_25092018\_140030.png

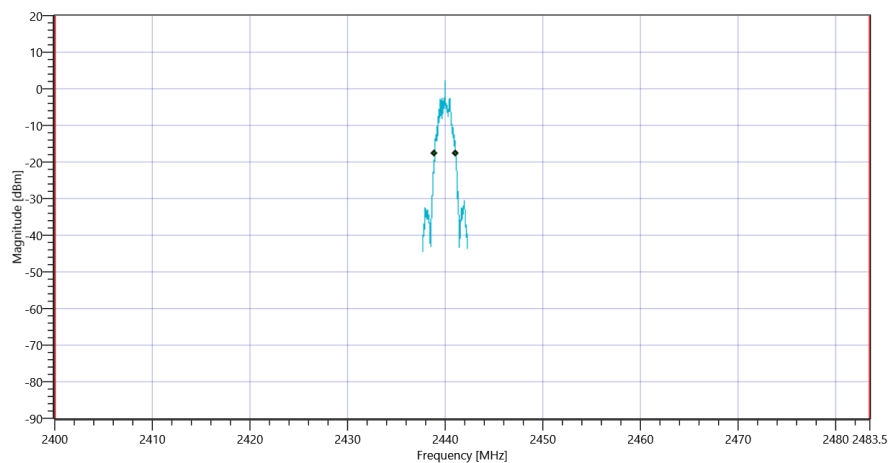


Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 2 Msps\_25092018\_140033.png

| RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 |             |             |           |      |             |
|----------------------------------------------------------|-------------|-------------|-----------|------|-------------|
| Test Description                                         | Lower Limit | Upper Limit | Measured  | Unit | Verdict     |
| Bandwidth 20dB                                           | ---         | ---         | 2.153     | MHz  | Information |
| T1 20dB                                                  | 2400.000000 | ---         | 2438.9328 | MHz  | PASS        |
| T2 20dB                                                  | ---         | 2483.500000 | 2441.0856 | MHz  | PASS        |



Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 2 Msps 20dB\_25092018\_140037.png



Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 2 Msps\_25092018\_140040.png

## Test at TX 2480 MHz

### RESULT: DTM Connection check

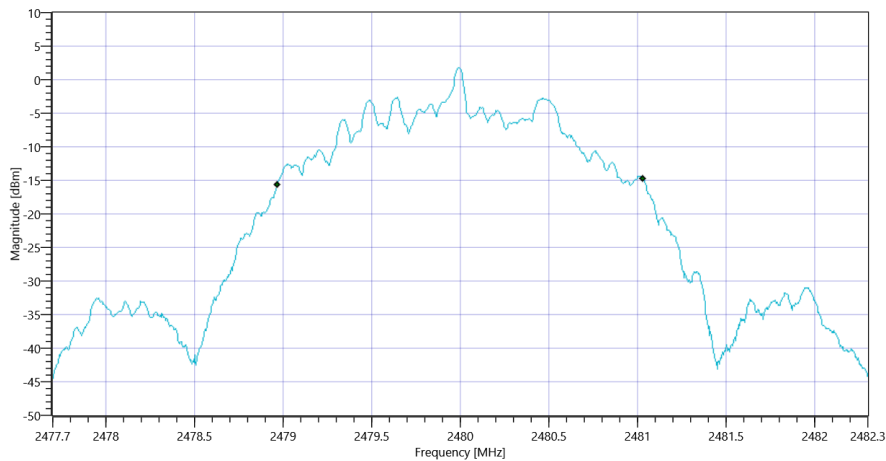
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

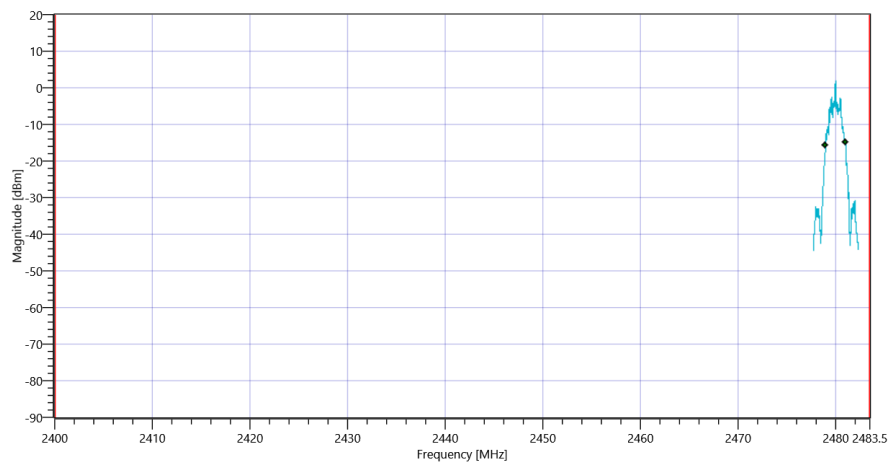
|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 7.55     |
| Ref. Lev. offs [dB]    | 10.26    |
| Input Attenuation [dB] | 15       |
| Freq. Start [MHz]      | 2477.700 |
| Freq. Stop [MHz]       | 2482.300 |
| Resolution BW. [MHz]   | 0.050000 |
| Video BW. [MHz]        | 0.200000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: TC\_VM\_FCC15247\_Bandwidth\_99PCT\_20dB\_DTS\_FHSS\_V01

| Test Description | Lower Limit | Upper Limit | Measured  | Unit | Verdict     |
|------------------|-------------|-------------|-----------|------|-------------|
| Bandwidth 99%    | ---         | ---         | 2.063     | MHz  | Information |
| T1               | 2400.000000 | ---         | 2478.9706 | MHz  | PASS        |
| T2               | ---         | 2483.500000 | 2481.0340 | MHz  | PASS        |

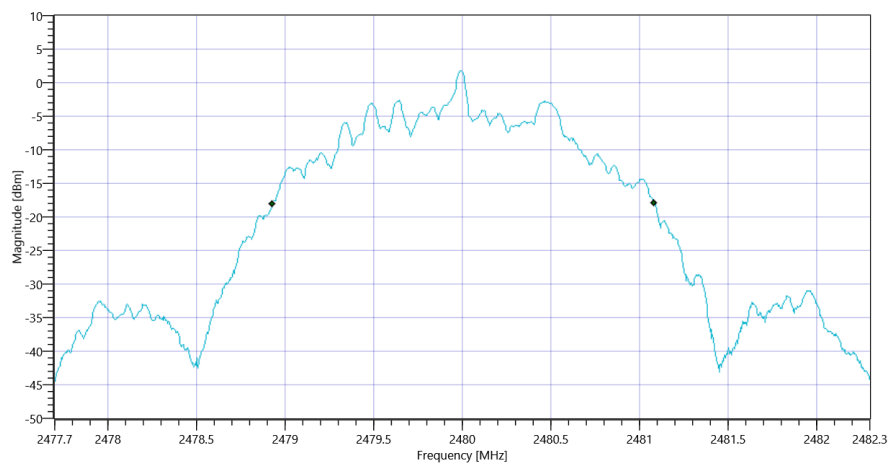


Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 2 Msps 99PCT\_25092018\_140121.png

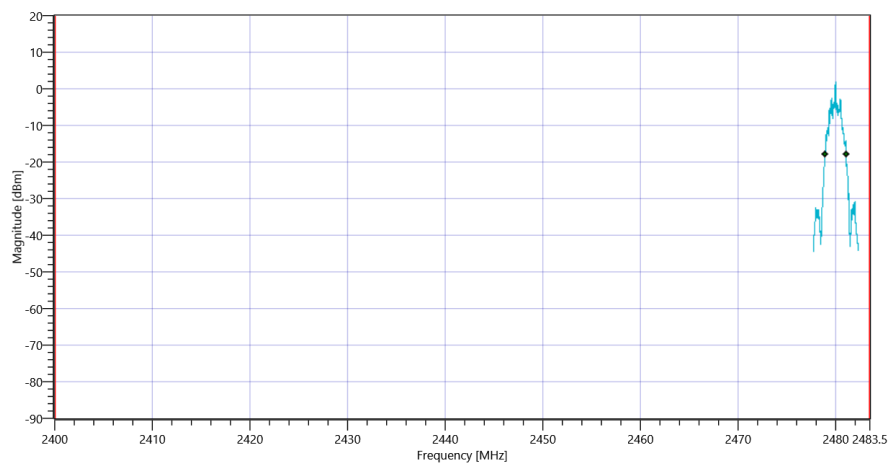


Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 2 Msps\_25092018\_140124.png

| RESULT: TC_VM_FCC15247_Bandwidth_99PCT_20dB_DTS_FHSS_V01 |             |             |           |      |             |
|----------------------------------------------------------|-------------|-------------|-----------|------|-------------|
| Test Description                                         | Lower Limit | Upper Limit | Measured  | Unit | Verdict     |
| Bandwidth 20dB                                           | ---         | ---         | 2.157     | MHz  | Information |
| T1 20dB                                                  | 2400.000000 | ---         | 2478.9282 | MHz  | PASS        |
| T2 20dB                                                  | ---         | 2483.500000 | 2481.0856 | MHz  | PASS        |



Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 2 Msps 20dB\_25092018\_140128.png



Plot\_FCC Part 15.247 Bandwidth 99PCT - 20dB BT LE 2 Msps\_25092018\_140131.png

TEST FINISHED

General Verdict

25.09.2018 14:01:31 / RT: 148 s

PASS

## 9. FCC Part 15.247 TX Spurious Conducted BT LE 1 Msp

| Test References            |                                                                            |
|----------------------------|----------------------------------------------------------------------------|
| TC Start                   | 25.09.2018 14:01:33                                                        |
| System Version             | 1.0.0.10                                                                   |
| Test Specification         | FCC Part 15.247                                                            |
| Test Method                |                                                                            |
| Class / TC Version / TC ID | TC_VM_FCC15247_TX_Emissions_Conducted_V01 Version: 0.0.1   TCID_FCC15247_8 |
| My Description             | FCC 15.247 TX Emissions Conducted DTS - BT LE 1 Msp                        |
| Add. Information           |                                                                            |

| Test Parameter         |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Technology to test     | BT LE 1 Msp                                                                                             |
| Antenna Port used      | 1                                                                                                       |
| Temperature            | mid                                                                                                     |
| Voltage                | mid                                                                                                     |
| Frequency low to test  | True   Freq [MHz] 2402                                                                                  |
| Frequency mid to test  | True   Freq [MHz] 2440                                                                                  |
| Frequency high to test | True   Freq [MHz] 2480                                                                                  |
| Pattern                | PRBS9                                                                                                   |
| Switched Path          | IUT - SignalingUnit - SpectrumAnalyzer                                                                  |
| Devices in use         | SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.40   SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40 |

## Test at TX 2402 MHz

RESULT: DTM Connection check

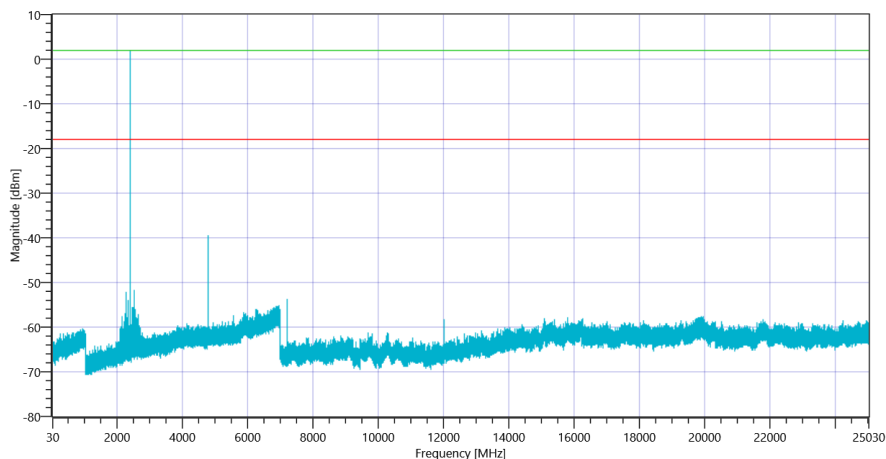
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

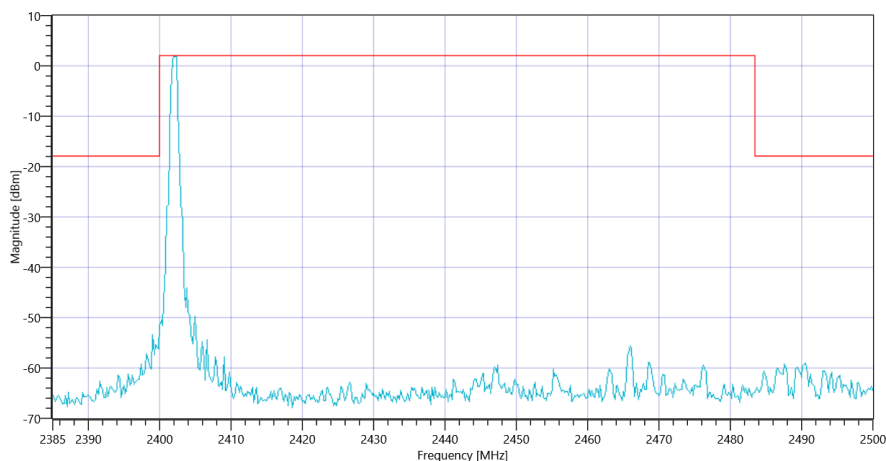
|                      |          |
|----------------------|----------|
| Ref. Level [dBm]     | 8.24     |
| Resolution BW. [MHz] | 0.100000 |
| Video BW. [MHz]      | 0.300000 |
| Detector             | POS      |
| Sweep Time [ms]      | 500      |
| Sweep Points/Section | 1001     |
| Sweep Count          | 3        |
| Sweep Mode           | MAXH     |
| Used Sweep Type      | SWE      |

RESULT: TC\_VM\_FCC15247\_TX\_Emissions\_Conducted\_V01

| Test Description        | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|-------------------------|-------------|-------------|----------|------|-------------|
| Reference @ 2402.00 MHz | ---         | ---         | 2.01     | dBm  | Information |
| No peaks detected       | ---         | ---         |          |      | PASS        |



Plot\_FCC Part 15.247 TX Spurious Conducted BT LE 1 Msps 2402\_25092018\_140727.png



Plot\_FCC Part 15.247 TX Spurious Conducted BT LE 1 Msps 2402\_25092018\_140729.png

## Test at TX 2440 MHz

RESULT: DTM Connection check

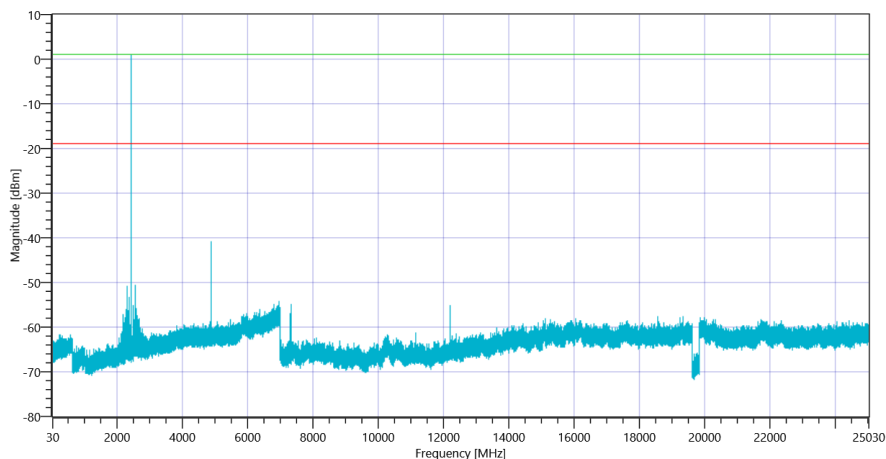
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

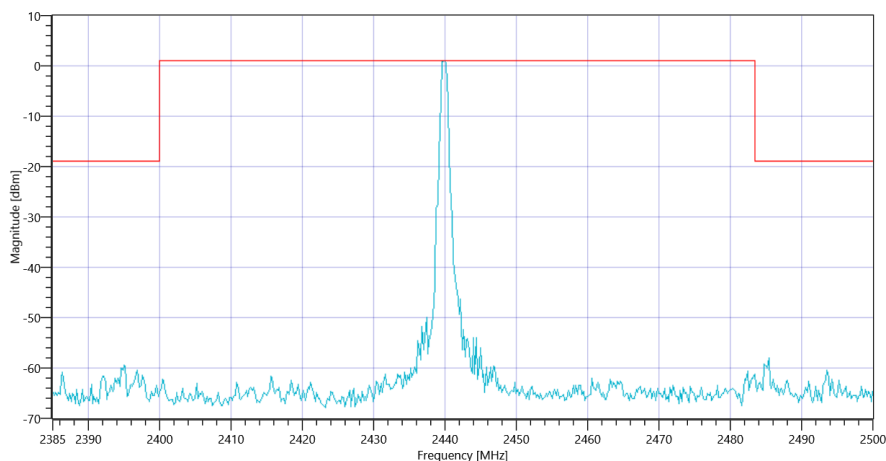
|                      |          |
|----------------------|----------|
| Ref. Level [dBm]     | 7.75     |
| Resolution BW. [MHz] | 0.100000 |
| Video BW. [MHz]      | 0.300000 |
| Detector             | POS      |
| Sweep Time [ms]      | 500      |
| Sweep Points/Section | 1001     |
| Sweep Count          | 3        |
| Sweep Mode           | MAXH     |
| Used Sweep Type      | SWE      |

RESULT: TC\_VM\_FCC15247\_TX\_Emissions\_Conducted\_V01

| Test Description        | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|-------------------------|-------------|-------------|----------|------|-------------|
| Reference @ 2440.00 MHz | ---         | ---         | 1.01     | dBm  | Information |
| No peaks detected       | ---         | ---         |          |      | PASS        |



Plot\_FCC Part 15.247 TX Spurious Conducted BT LE 1 Msps 2440\_25092018\_141329.png



Plot\_FCC Part 15.247 TX Spurious Conducted BT LE 1 Msps 2440\_25092018\_141331.png

## Test at TX 2480 MHz

RESULT: DTM Connection check

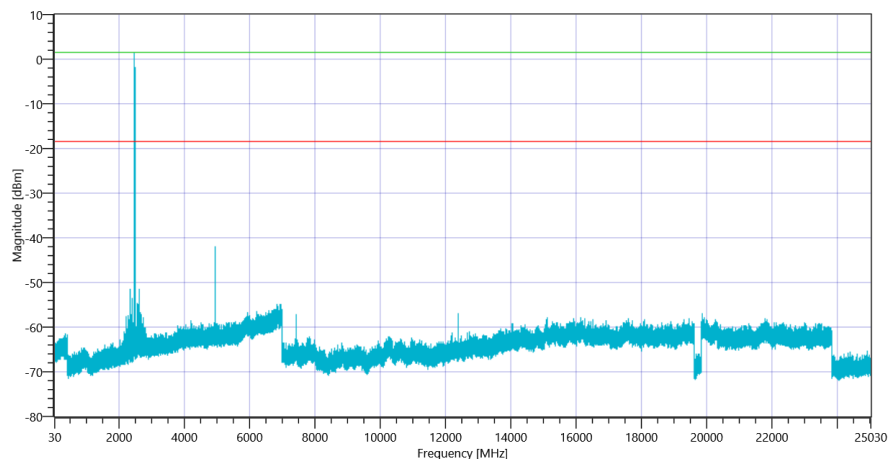
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

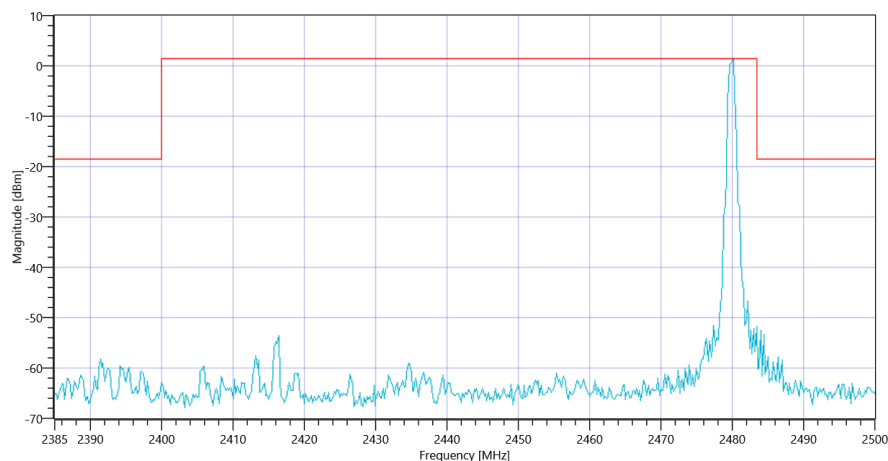
|                      |          |
|----------------------|----------|
| Ref. Level [dBm]     | 7.46     |
| Resolution BW. [MHz] | 0.100000 |
| Video BW. [MHz]      | 0.300000 |
| Detector             | POS      |
| Sweep Time [ms]      | 500      |
| Sweep Points/Section | 1001     |
| Sweep Count          | 3        |
| Sweep Mode           | MAXH     |
| Used Sweep Type      | SWE      |

RESULT: TC\_VM\_FCC15247\_TX\_Emissions\_Conducted\_V01

| Test Description        | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|-------------------------|-------------|-------------|----------|------|-------------|
| Reference @ 2480.20 MHz | ---         | ---         | 1.51     | dBm  | Information |
| No peaks detected       | ---         | ---         |          |      | PASS        |



Plot\_FCC Part 15.247 TX Spurious Conducted BT LE 1 Msps 2480\_25092018\_141931.png



Plot\_FCC Part 15.247 TX Spurious Conducted BT LE 1 Msps 2480\_25092018\_141934.png

TEST FINISHED

General Verdict

25.09.2018 14:19:35 / RT: 1081 s

PASS

## 10. FCC Part 15.247 TX Spurious Conducted BT LE 2 Msps

| Test References            |                                                                            |
|----------------------------|----------------------------------------------------------------------------|
| TC Start                   | 25.09.2018 14:19:36                                                        |
| System Version             | 1.0.0.10                                                                   |
| Test Specification         | FCC Part 15.247                                                            |
| Test Method                |                                                                            |
| Class / TC Version / TC ID | TC_VM_FCC15247_TX_Emissions_Conducted_V01 Version: 0.0.1   TCID_FCC15247_8 |
| My Description             | FCC 15.247 TX Emissions Conducted DTS - BT LE 2 Msps                       |
| Add. Information           |                                                                            |

| Test Parameter         |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Technology to test     | BT LE 2 Msps                                                                                            |
| Antenna Port used      | 1                                                                                                       |
| Temperature            | mid                                                                                                     |
| Voltage                | mid                                                                                                     |
| Frequency low to test  | True   Freq [MHz] 2402                                                                                  |
| Frequency mid to test  | True   Freq [MHz] 2440                                                                                  |
| Frequency high to test | True   Freq [MHz] 2480                                                                                  |
| Pattern                | PRBS9                                                                                                   |
| Switched Path          | IUT - SignalingUnit - SpectrumAnalyzer                                                                  |
| Devices in use         | SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.40   SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40 |

## Test at TX 2402 MHz

RESULT: DTM Connection check

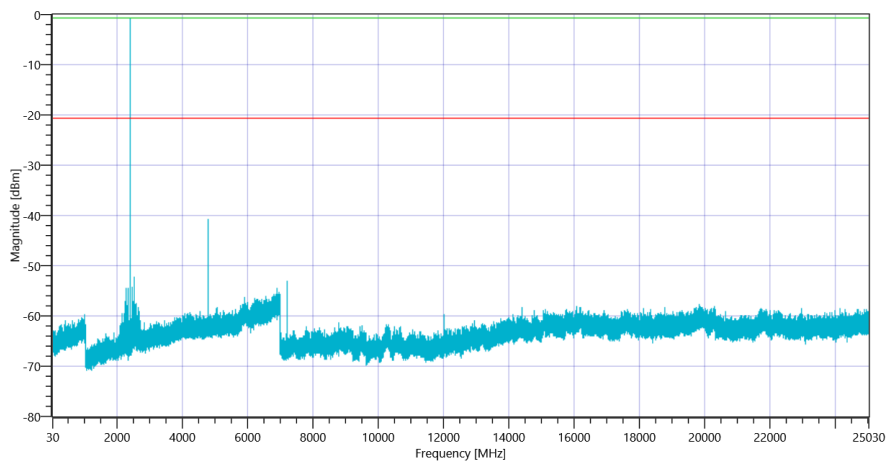
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

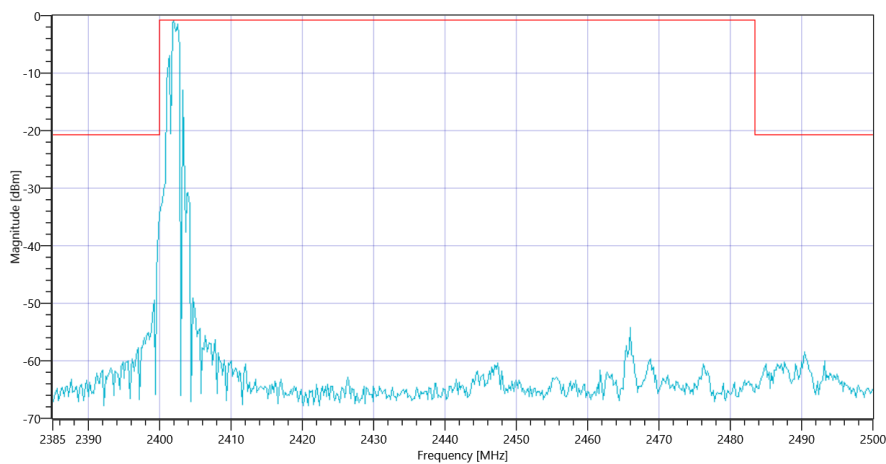
|                      |          |
|----------------------|----------|
| Ref. Level [dBm]     | 8.11     |
| Resolution BW. [MHz] | 0.100000 |
| Video BW. [MHz]      | 0.300000 |
| Detector             | POS      |
| Sweep Time [ms]      | 500      |
| Sweep Points/Section | 1001     |
| Sweep Count          | 3        |
| Sweep Mode           | MAXH     |
| Used Sweep Type      | SWE      |

RESULT: TC\_VM\_FCC15247\_TX\_Emissions\_Conducted\_V01

| Test Description        | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|-------------------------|-------------|-------------|----------|------|-------------|
| Reference @ 2402.00 MHz | ---         | ---         | -0.75    | dBm  | Information |
| No peaks detected       | ---         | ---         |          |      | PASS        |



Plot\_FCC Part 15.247 TX Spurious Conducted BT LE 2 Msps 2402\_25092018\_142530.png



Plot\_FCC Part 15.247 TX Spurious Conducted BT LE 2 Msps 2402\_25092018\_142533.png

## Test at TX 2440 MHz

RESULT: DTM Connection check

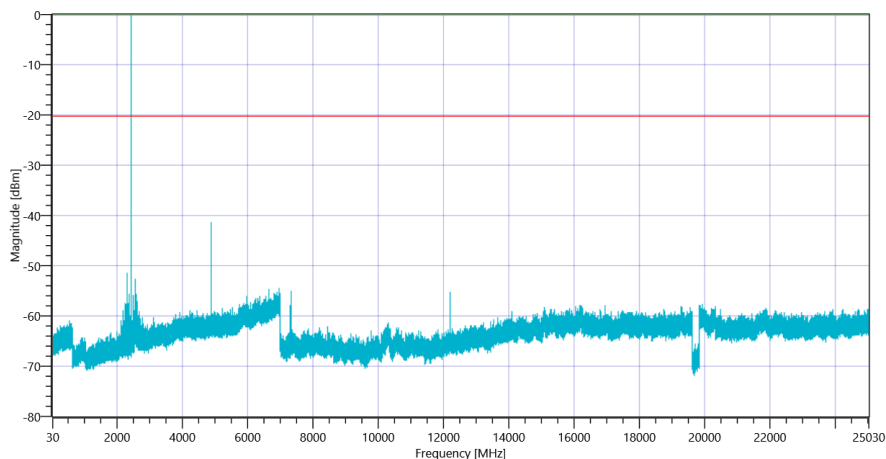
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

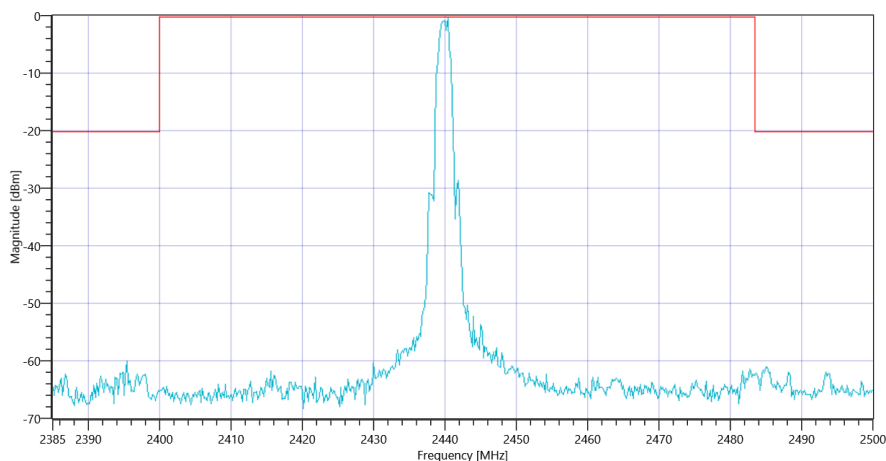
|                      |          |
|----------------------|----------|
| Ref. Level [dBm]     | 7.68     |
| Resolution BW. [MHz] | 0.100000 |
| Video BW. [MHz]      | 0.300000 |
| Detector             | POS      |
| Sweep Time [ms]      | 500      |
| Sweep Points/Section | 1001     |
| Sweep Count          | 3        |
| Sweep Mode           | MAXH     |
| Used Sweep Type      | SWE      |

RESULT: TC\_VM\_FCC15247\_TX\_Emissions\_Conducted\_V01

| Test Description        | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|-------------------------|-------------|-------------|----------|------|-------------|
| Reference @ 2440.40 MHz | ---         | ---         | -0.18    | dBm  | Information |
| No peaks detected       | ---         | ---         |          |      | PASS        |



Plot\_FCC Part 15.247 TX Spurious Conducted BT LE 2 Msps 2440\_25092018\_143132.png



Plot\_FCC Part 15.247 TX Spurious Conducted BT LE 2 Msps 2440\_25092018\_143135.png

## Test at TX 2480 MHz

RESULT: DTM Connection check

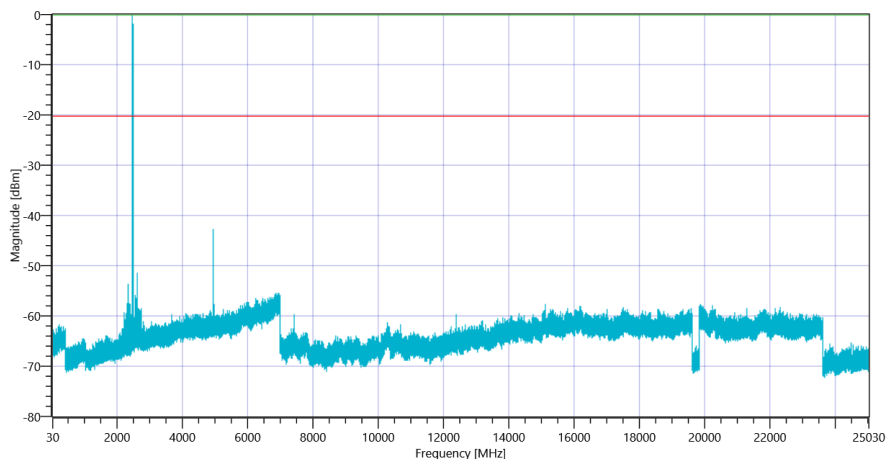
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

READ SA SETTINGS:

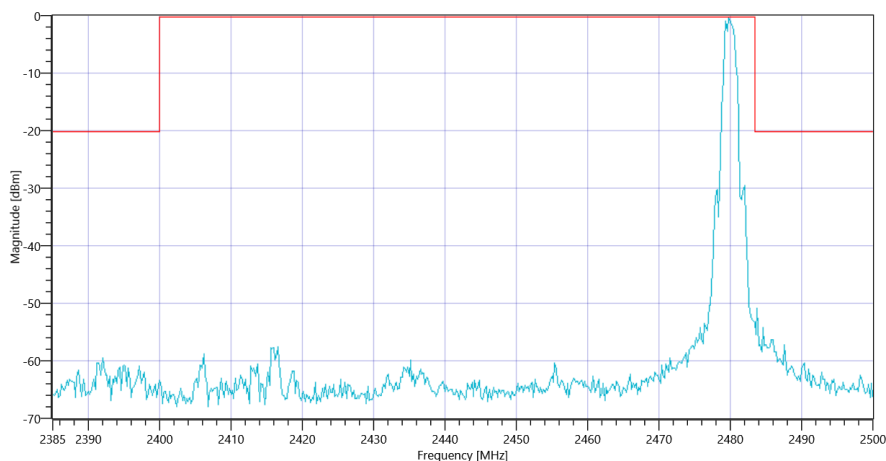
|                      |          |
|----------------------|----------|
| Ref. Level [dBm]     | 7.40     |
| Resolution BW. [MHz] | 0.100000 |
| Video BW. [MHz]      | 0.300000 |
| Detector             | POS      |
| Sweep Time [ms]      | 500      |
| Sweep Points/Section | 1001     |
| Sweep Count          | 3        |
| Sweep Mode           | MAXH     |
| Used Sweep Type      | SWE      |

RESULT: TC\_VM\_FCC15247\_TX\_Emissions\_Conducted\_V01

| Test Description        | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|-------------------------|-------------|-------------|----------|------|-------------|
| Reference @ 2479.80 MHz | ---         | ---         | -0.19    | dBm  | Information |
| No peaks detected       | ---         | ---         |          |      | PASS        |



Plot\_FCC Part 15.247 TX Spurious Conducted BT LE 2 Msps 2480\_25092018\_143735.png



Plot\_FCC Part 15.247 TX Spurious Conducted BT LE 2 Msps 2480\_25092018\_143737.png

TEST FINISHED

General Verdict

25.09.2018 14:37:39 / RT: 1082 s

PASS

## 11. Common2G4 Peak Output Power conducted 3MHz\_3MHz BT LE 1 Msps

| Test References            |                                                                                             |
|----------------------------|---------------------------------------------------------------------------------------------|
| TC Start                   | 25.09.2018 14:37:40                                                                         |
| System Version             | 1.0.0.10                                                                                    |
| Test Specification         | None                                                                                        |
| Test Method                |                                                                                             |
| Class / TC Version / TC ID | TC_VM_Common2G4_Peak_Output_Power_Conducted_3MHz_3MHz_V01 Version: 0.0.1   TCID_Common2G4_1 |
| My Description             | Peak Output Power conducted 3MHz/3MHz - BT LE 1 Msps                                        |
| Add. Information           |                                                                                             |

| Test Parameter         |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Technology to test     | BT LE 1 Msps                                                                                            |
| Antenna Port used      | 1                                                                                                       |
| Temperature            | mid                                                                                                     |
| Voltage                | mid                                                                                                     |
| Frequency low to test  | True   Freq [MHz] 2402                                                                                  |
| Frequency mid to test  | True   Freq [MHz] 2440                                                                                  |
| Frequency high to test | True   Freq [MHz] 2480                                                                                  |
| Pattern                | PRBS9                                                                                                   |
| Switched Path          | IUT - SignalingUnit - SpectrumAnalyzer                                                                  |
| Devices in use         | SigBT: Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.40   SA: Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.40 |

## Test at TX 2402 MHz

### RESULT: DTM Connection check

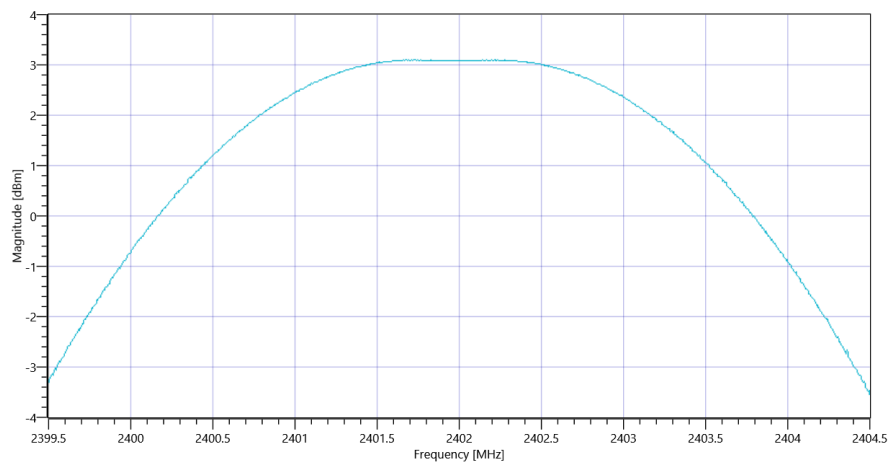
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 13.09    |
| Ref. Lev. offs [dB]    | 10.09    |
| Input Attenuation [dB] | 20       |
| Freq. Start [MHz]      | 2399.500 |
| Freq. Stop [MHz]       | 2404.500 |
| Resolution BW. [MHz]   | 3.000000 |
| Video BW. [MHz]        | 3.000000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: TC\_VM\_Common2G4\_Peak\_Output\_Power\_Conducted\_3MHz\_3MHz\_V01

| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|-------------------|-------------|-------------|----------|------|-------------|
| Peak Power        | ---         | 30.00       | 3.1      | dBm  | Information |
| Peak Power        | ---         | 1000        | 2.041738 | mW   | Information |
| Frequency at Peak | ---         | ---         | 2402.225 | MHz  | Information |



Plot\_Common2G4 Peak Output Power conducted 3MHz\_3MHz BT LE 1 Msps\_25092018\_143817.png

## Test at TX 2440 MHz

### RESULT: DTM Connection check

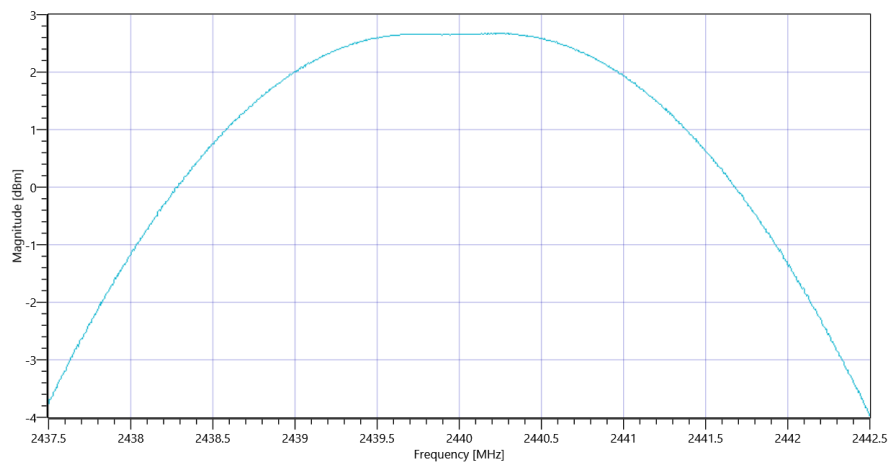
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 12.66    |
| Ref. Lev. offs [dB]    | 10.21    |
| Input Attenuation [dB] | 20       |
| Freq. Start [MHz]      | 2437.500 |
| Freq. Stop [MHz]       | 2442.500 |
| Resolution BW. [MHz]   | 3.000000 |
| Video BW. [MHz]        | 3.000000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: TC\_VM\_Common2G4\_Peak\_Output\_Power\_Conducted\_3MHz\_3MHz\_V01

| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|-------------------|-------------|-------------|----------|------|-------------|
| Peak Power        | ---         | 30.00       | 2.68     | dBm  | Information |
| Peak Power        | ---         | 1000        | 1.853532 | mW   | Information |
| Frequency at Peak | ---         | ---         | 2440.2   | MHz  | Information |



Plot\_Common2G4 Peak Output Power conducted 3MHz\_3MHz BT LE 1 Msps\_25092018\_143858.png

## Test at TX 2480 MHz

### RESULT: DTM Connection check

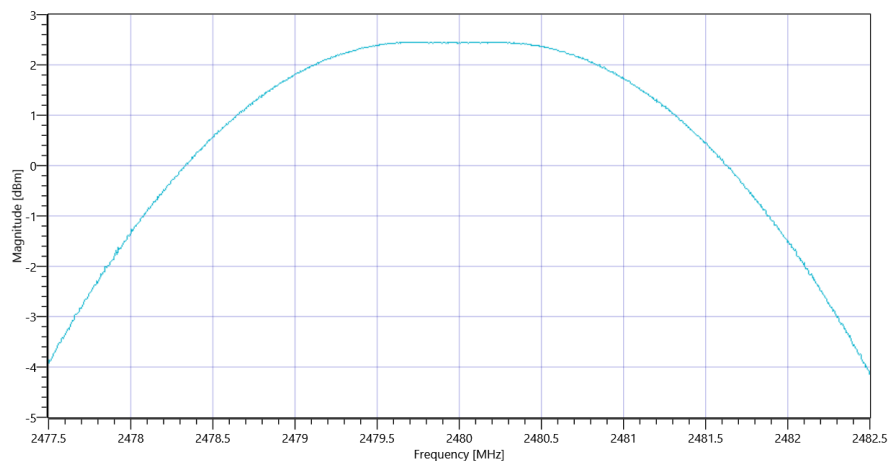
| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict |
|-------------------|-------------|-------------|----------|------|---------|
| Connection result | ---         | ---         | ---      | --   | PASS    |

### READ SA SETTINGS:

|                        |          |
|------------------------|----------|
| Ref. Level [dBm]       | 12.38    |
| Ref. Lev. offs [dB]    | 10.26    |
| Input Attenuation [dB] | 20       |
| Freq. Start [MHz]      | 2477.500 |
| Freq. Stop [MHz]       | 2482.500 |
| Resolution BW. [MHz]   | 3.000000 |
| Video BW. [MHz]        | 3.000000 |
| Detector               | POS      |
| Sweep Time [ms]        | 1000     |
| Sweep Points/Section   | 1001     |
| Sweep Count            | 10       |
| Sweep Mode             | MAXH     |
| Used Sweep Type        | SWE      |

### RESULT: TC\_VM\_Common2G4\_Peak\_Output\_Power\_Conducted\_3MHz\_3MHz\_V01

| Test Description  | Lower Limit | Upper Limit | Measured | Unit | Verdict     |
|-------------------|-------------|-------------|----------|------|-------------|
| Peak Power        | ---         | 30.00       | 2.45     | dBm  | Information |
| Peak Power        | ---         | 1000        | 1.757924 | mW   | Information |
| Frequency at Peak | ---         | ---         | 2480.145 | MHz  | Information |



Plot\_Common2G4 Peak Output Power conducted 3MHz\_3MHz BT LE 1 Msps\_25092018\_143939.png

### TEST FINISHED

General Verdict

25.09.2018 14:39:39 / RT: 118 s

PASS