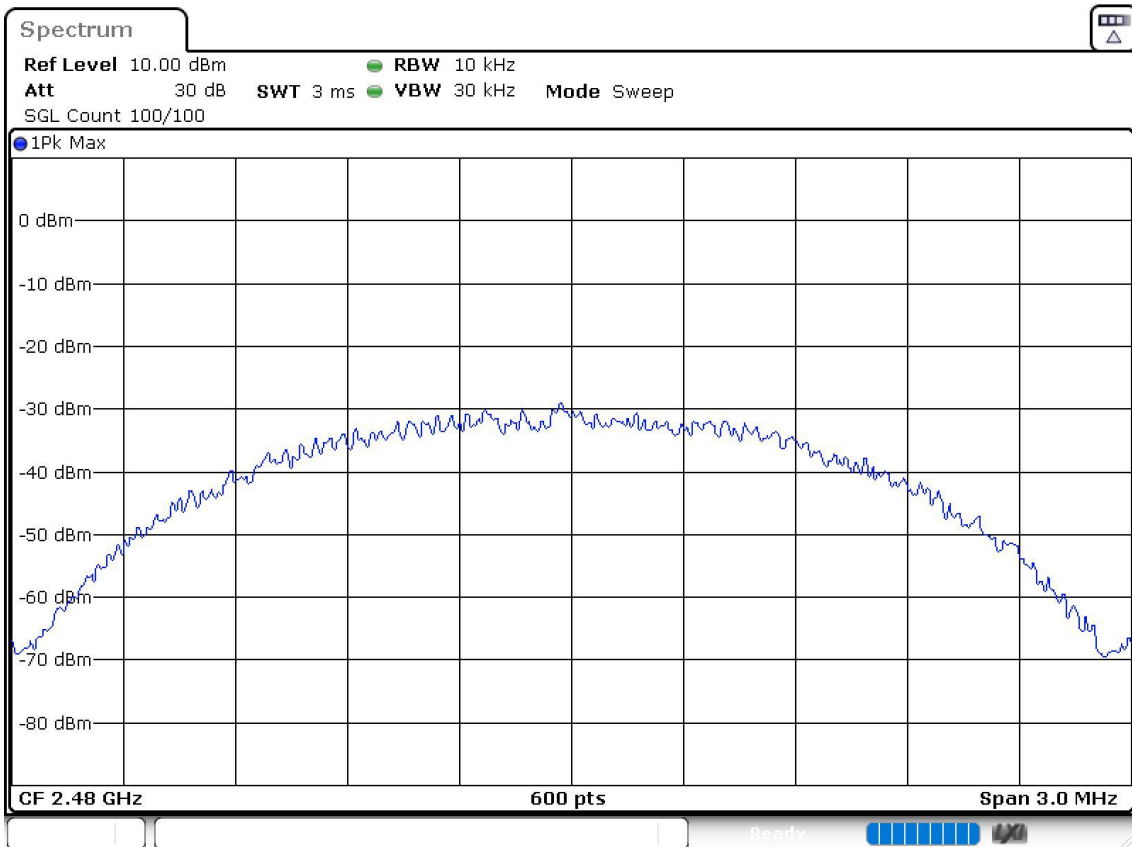
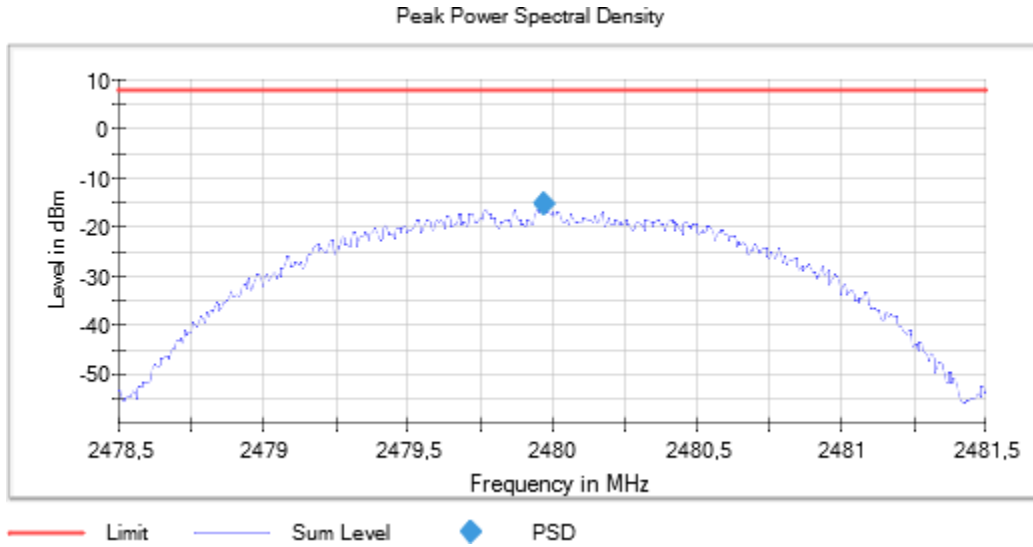


Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Bandwidth MHz = 2, Modulation = BTLE 5.1 (GFSK 2 Mbit/s), Number of Transmission Chains = 1, Active Port = 1

Images:



## FCC 15.247 (b) (3) Maximum Peak Conducted output power

### Limits

For systems using digital modulation in the 2400-2483.5 MHz band: 1 watt (30 dBm).

### Results

The maximum peak conducted output power level in the fundamental emission was measured using the method according to point 11.9.1.1 "RBW  $\geq$  DTS bandwidth" of ANSI C.63.10-2013.

The EIRP power (dBm) is calculated by adding the declared maximum antenna gain to the measured conducted power.

Maximum Declared Antenna Gain: 2 dBi

Modulation: BTLE 5.1 (GFSK 2 Mbit/s)

Freq (MHz)	Maximum Conducted Power (dBm)	Maximum EIRP Power (dBm)
2402.00000	-1.322	0.678
2440.00000	-1.633	0.367
2480.00000	-2.344	-0.344

### Analyzer setting

Setting	Instrument Value	Target Value
Span	6.000 MHz	6.000 MHz
RBW	2.000 MHz	$\geq 1.188$ MHz
VBW	10.000 MHz	$\geq 6.000$ MHz
SweepPoints	101	~ 101
Sweeptime	953.450 ns	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.12 dB	0.50 dB

Modulation: BTLE 5.1 (GFSK 1 Mbit/s)

Freq (MHz)	Maximum Conducted Power (dBm)	Maximum EIRP Power (dBm)
2402.00000	-1.424	0.576
2440.00000	-1.717	0.283
2480.00000	-2.332	-0.332

## Analyzer setting

Setting	Instrument Value	Target Value
Span	3.000 MHz	3.000 MHz
RBW	1.000 MHz	>= 712.873 kHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	101	~ 101
Sweeptime	1.907 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.36 dB	0.50 dB

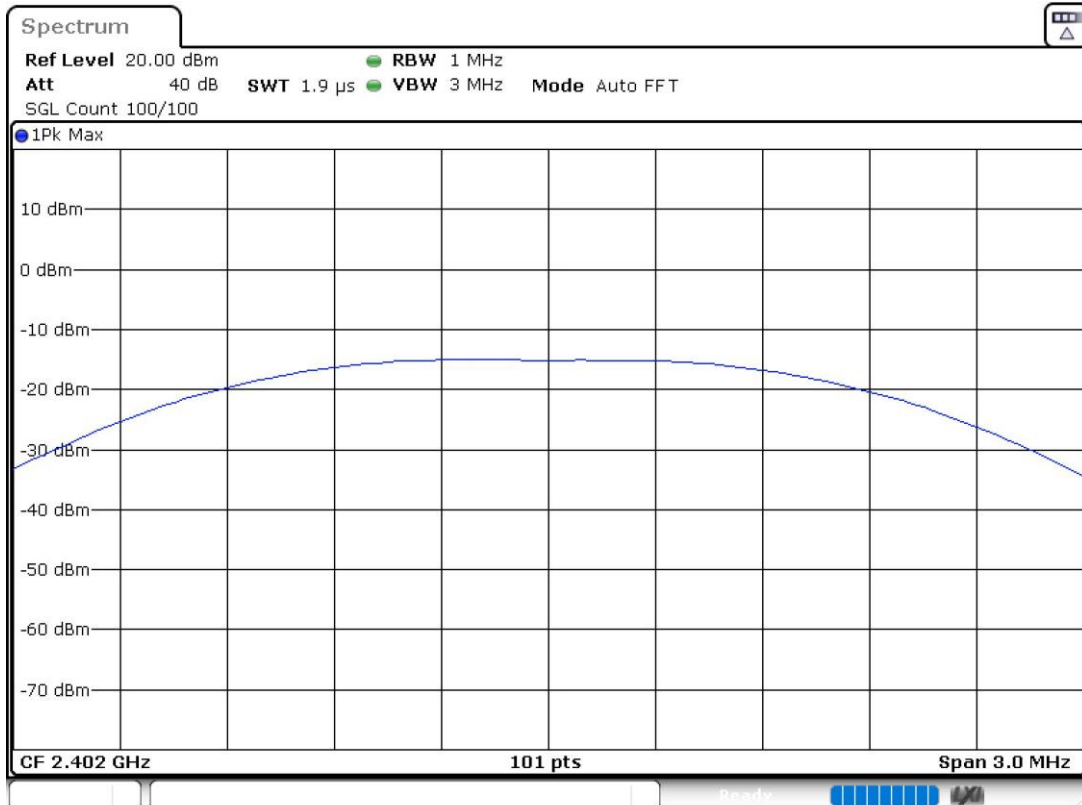
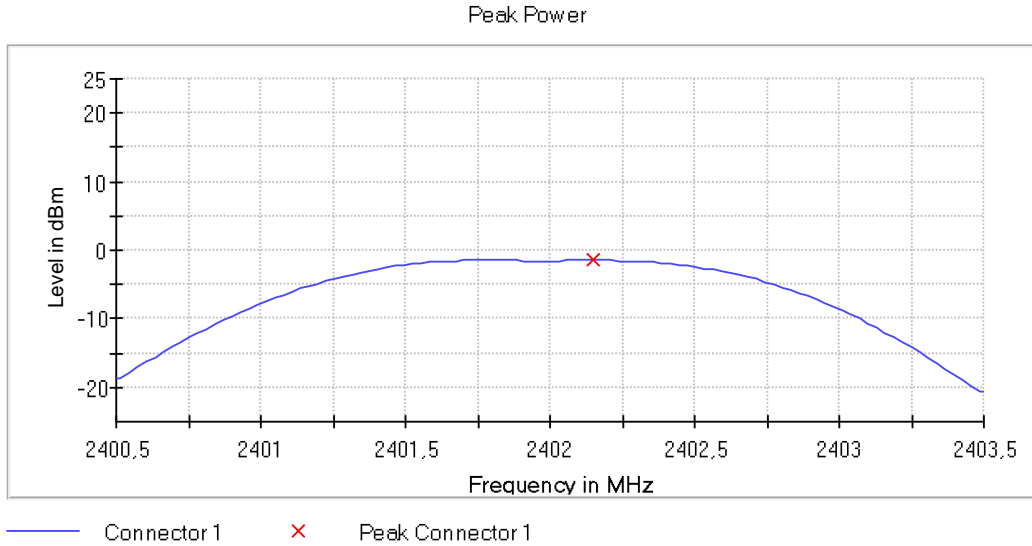
## Verdict

Pass

**Attachments**

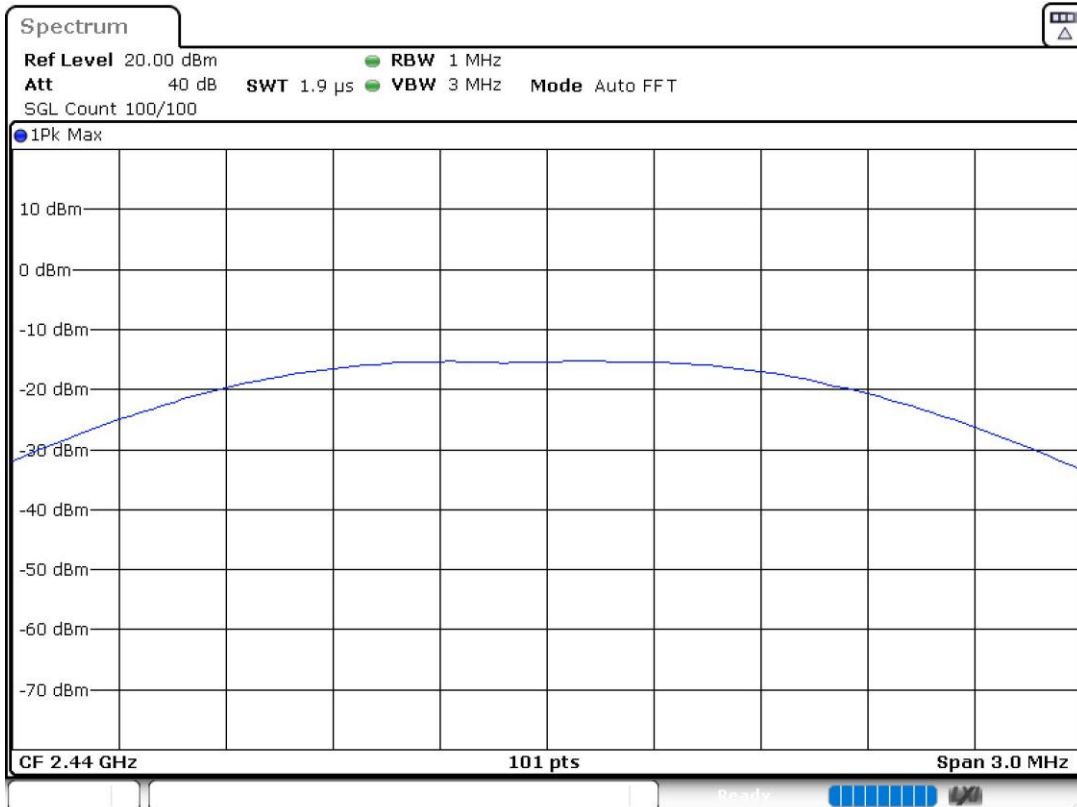
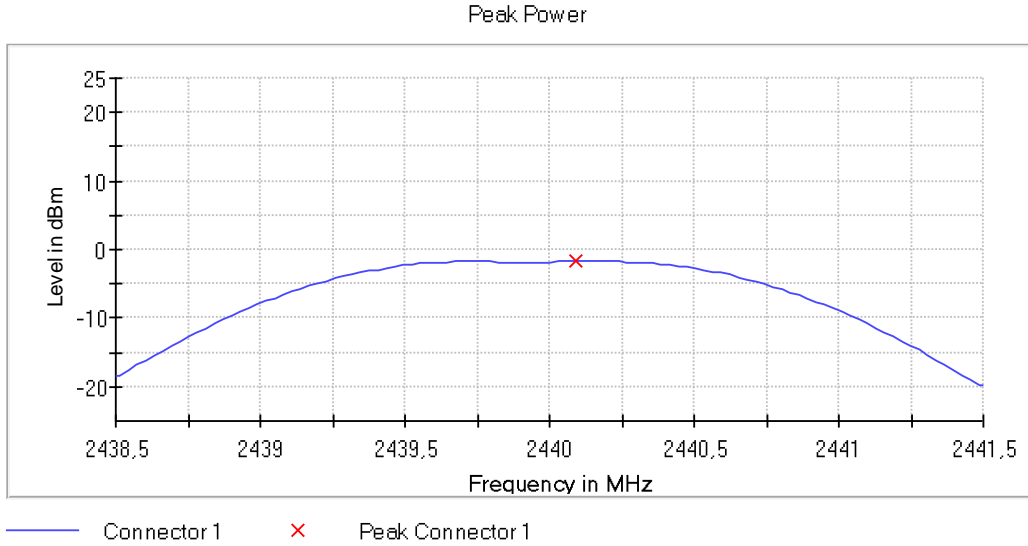
**Operation Band MHz = [2400, 2483.5], Frequency MHz = 2412.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 1 Mbit/s)**

**Images:**



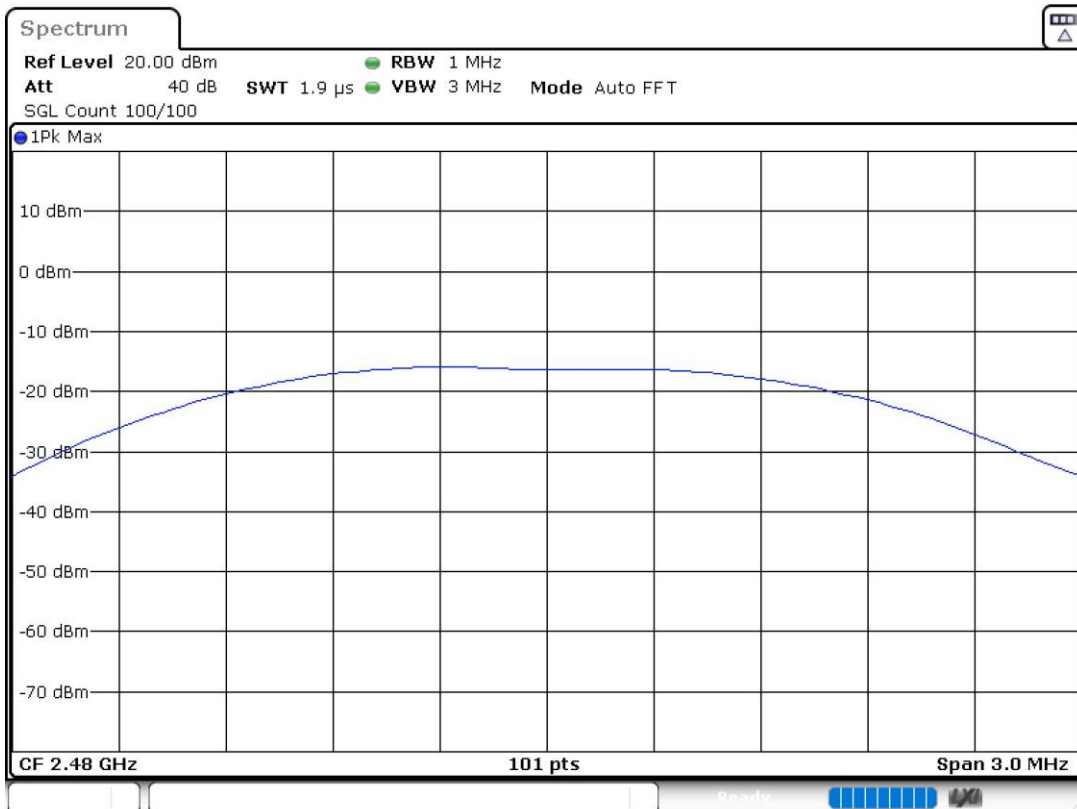
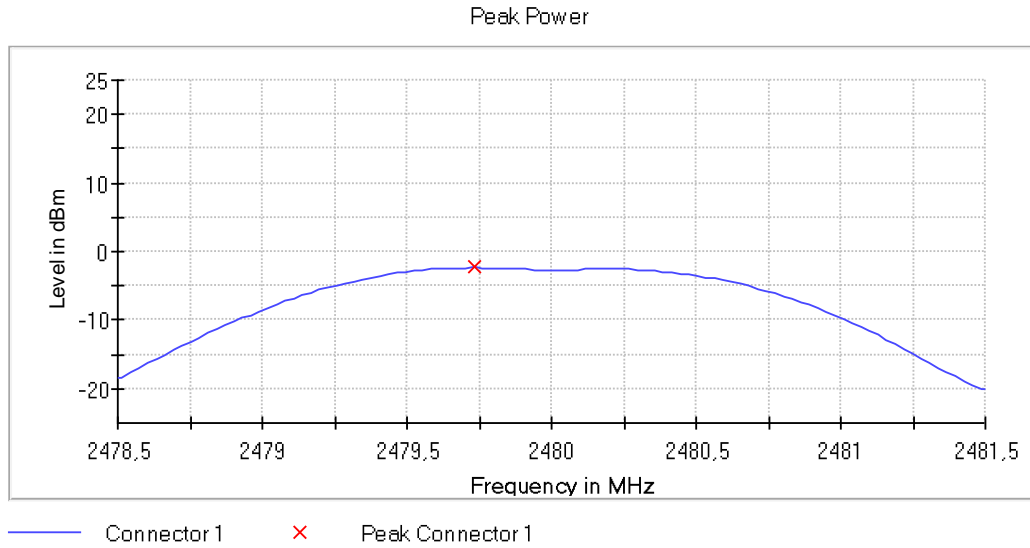
Operation Band MHz = [2400, 2483.5], Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 1 Mbit/s)

Images:



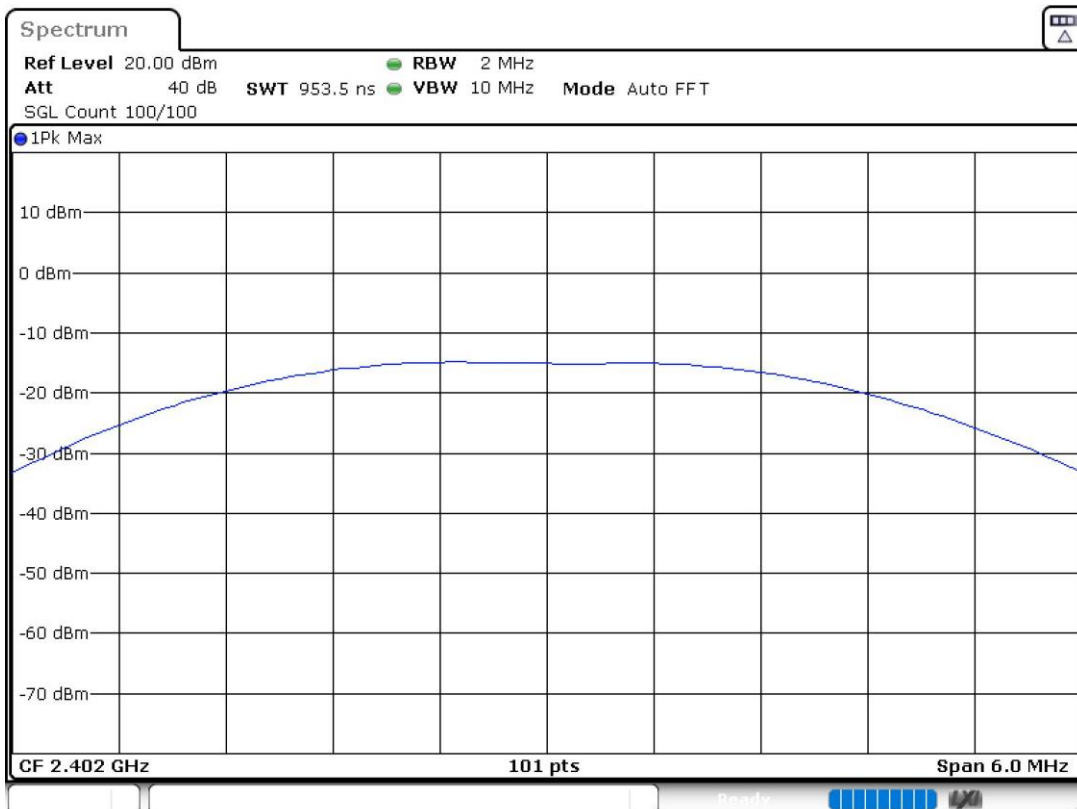
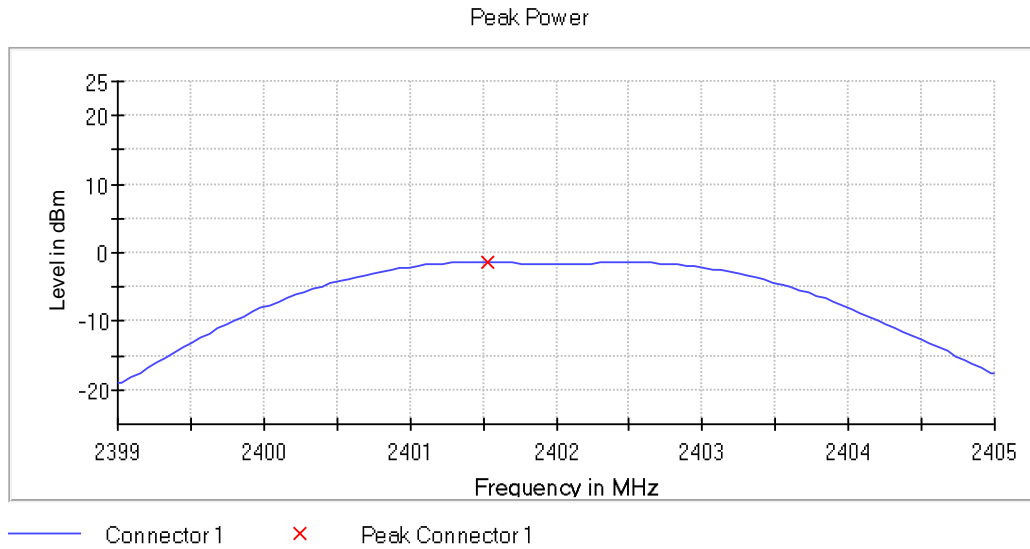
Operation Band MHz = [2400, 2483.5], Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 1 Mbit/s)

Images:



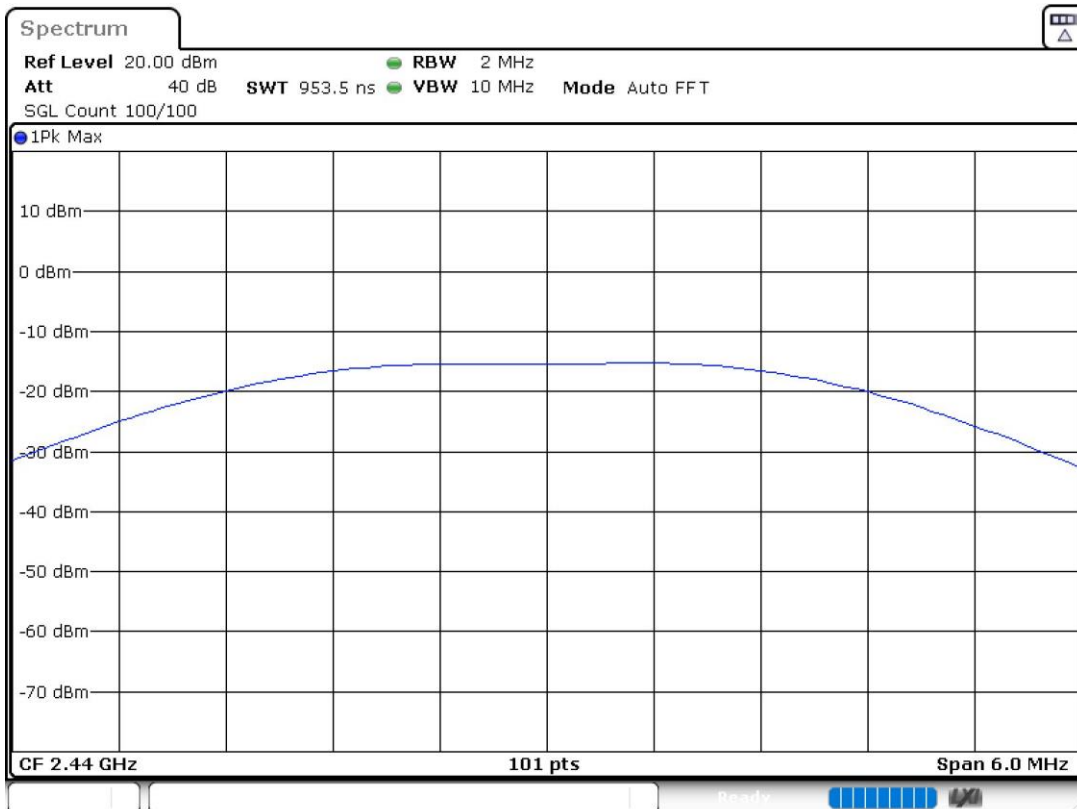
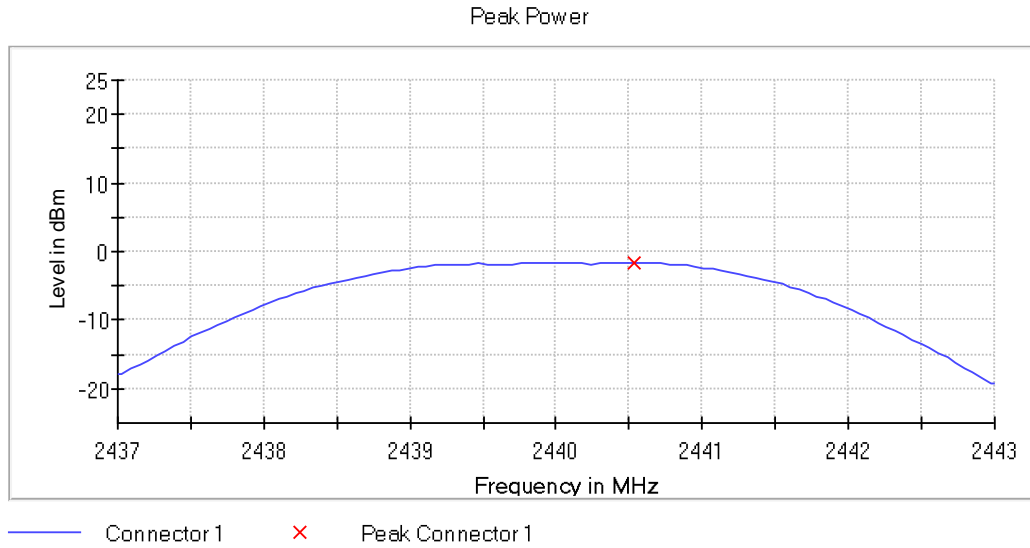
Operation Band MHz = [2400, 2483.5], Frequency MHz = 2412.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 2 Mbit/s)

Images:



Operation Band MHz = [2400, 2483.5], Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 2 Mbit/s)

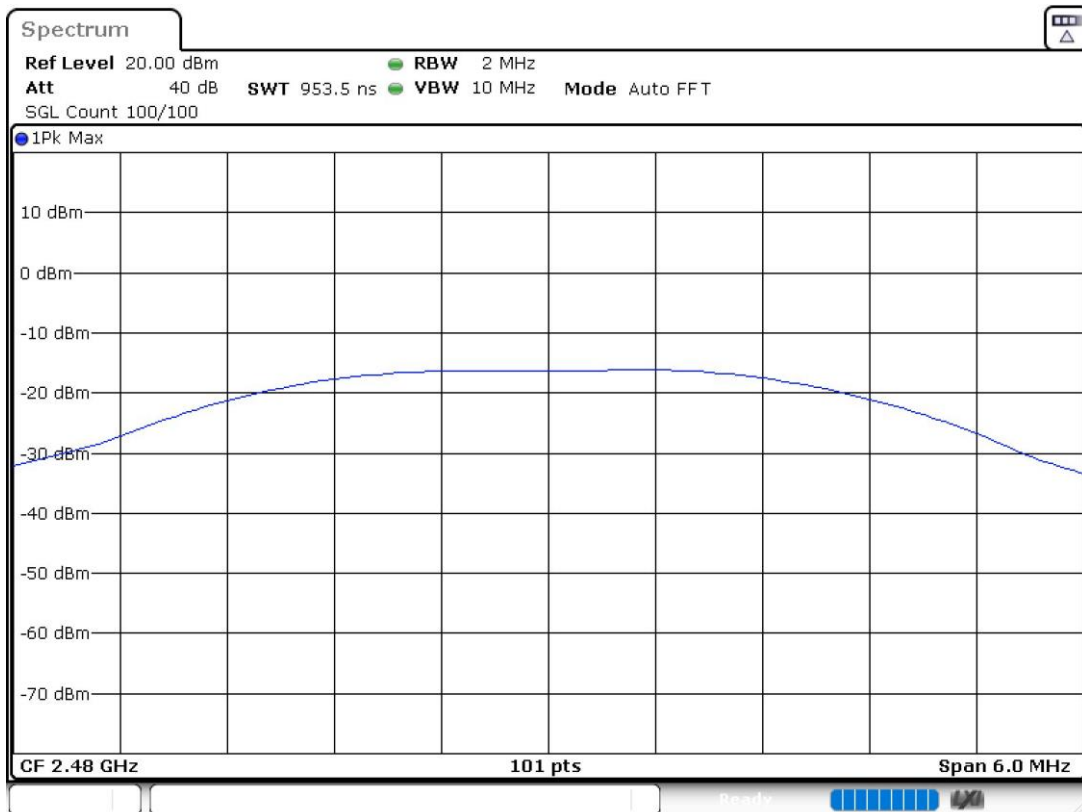
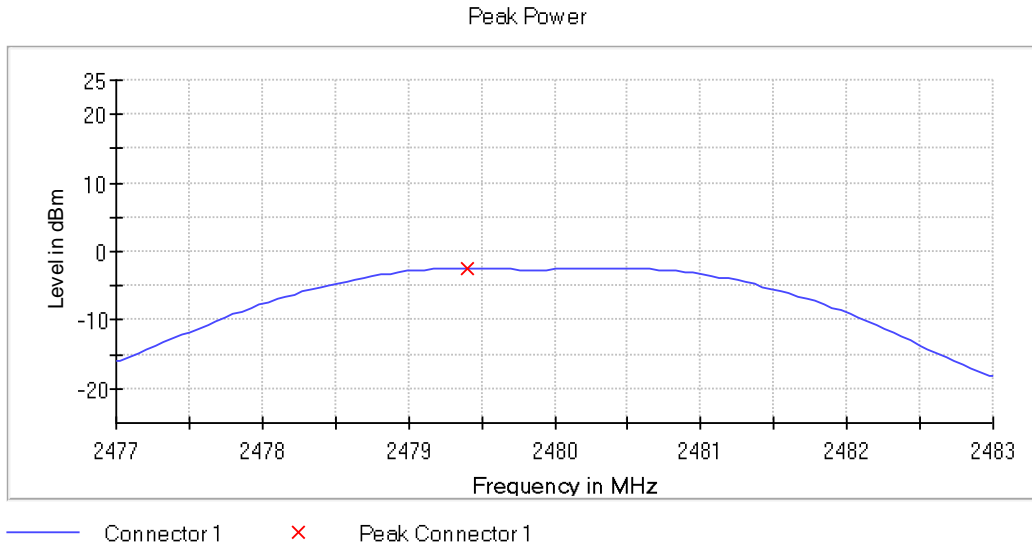
Images:





Operation Band MHz = [2400, 2483.5], Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 2 Mbit/s)

Images:



## FCC 15.247 (d) Band-edge emissions compliance (Transmitter)

### **Limits**

In any 100 kHz bandwidths outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Operation Band: [2400, 2483.5]

Modulation: BTLE 5.1 (GFSK 1 Mbit/s)

### **Results**

Radiated measurements were used to show compliance with the limits in the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz.

Modulation: BTLE 5.1 (GFSK 2 Mbit/s)

### **Results**

Radiated measurements were used to show compliance with the limits in the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz.

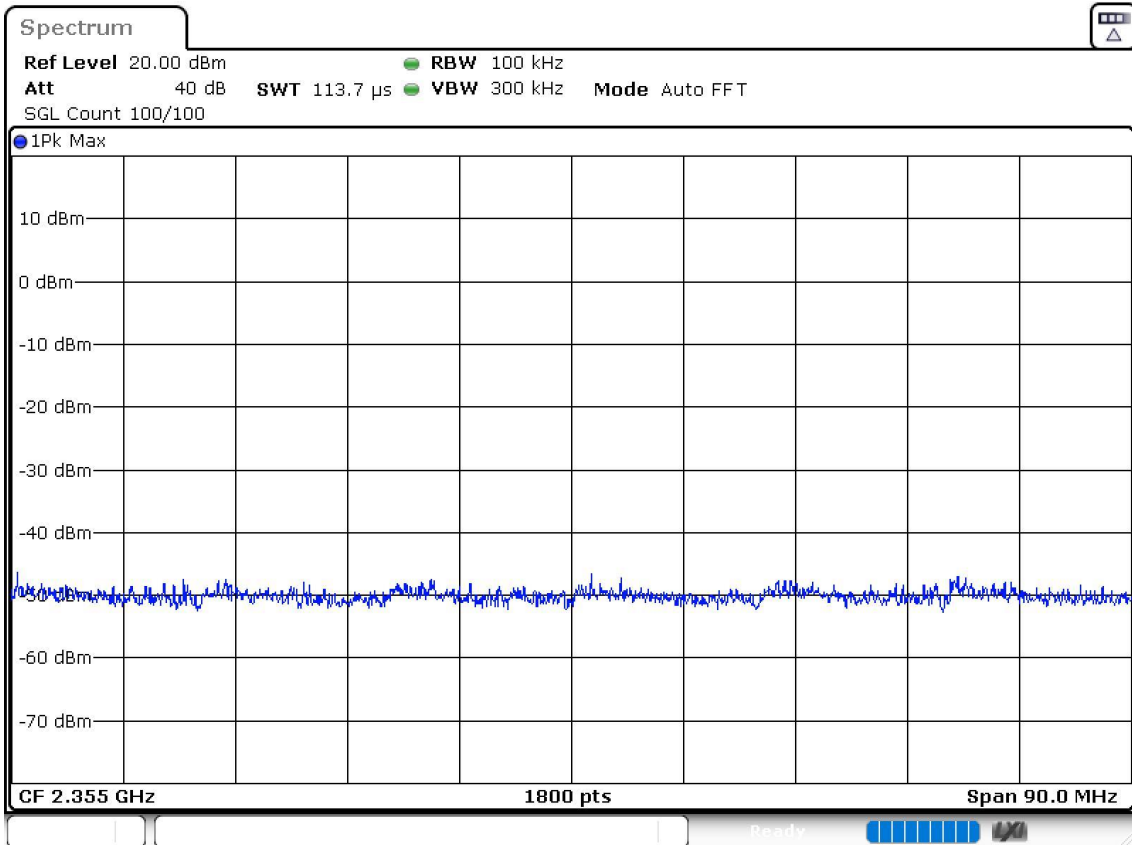
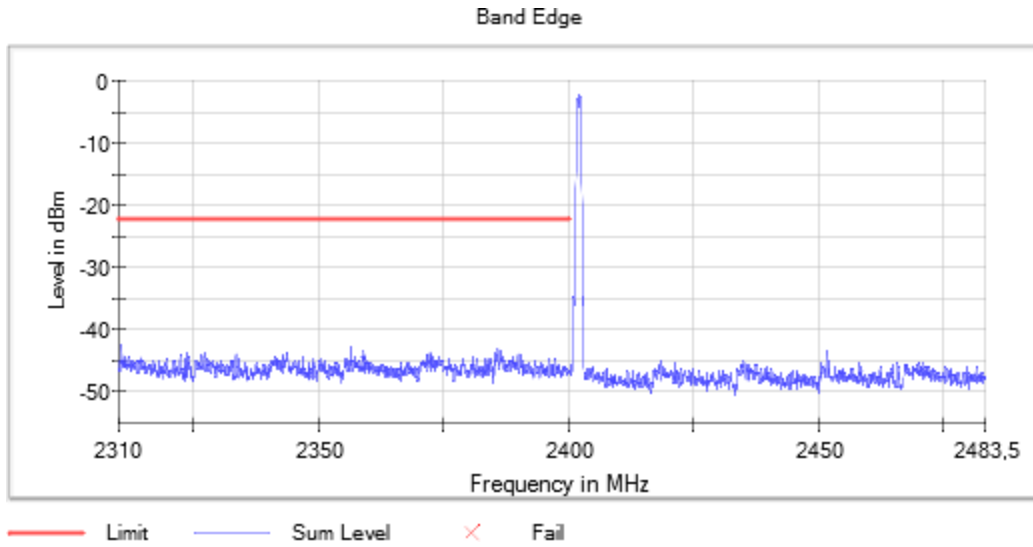
### **Verdict**

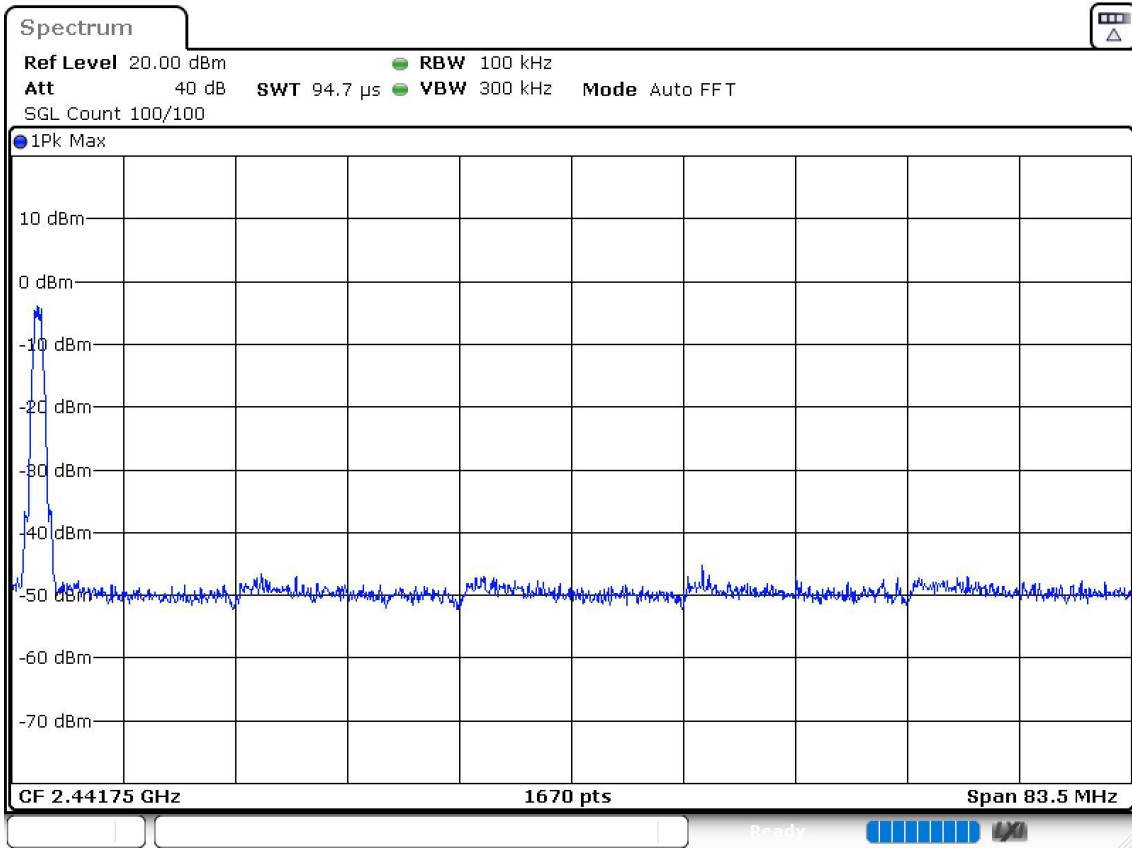
Pass

**Attachments**

**Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Bandwidth MHz = 1, Modulation = BTLE 5.1 (GFSK 1 Mbit/s), Number of Transmission Chains = 1, Measurement Point = 1, Active Port = 1**

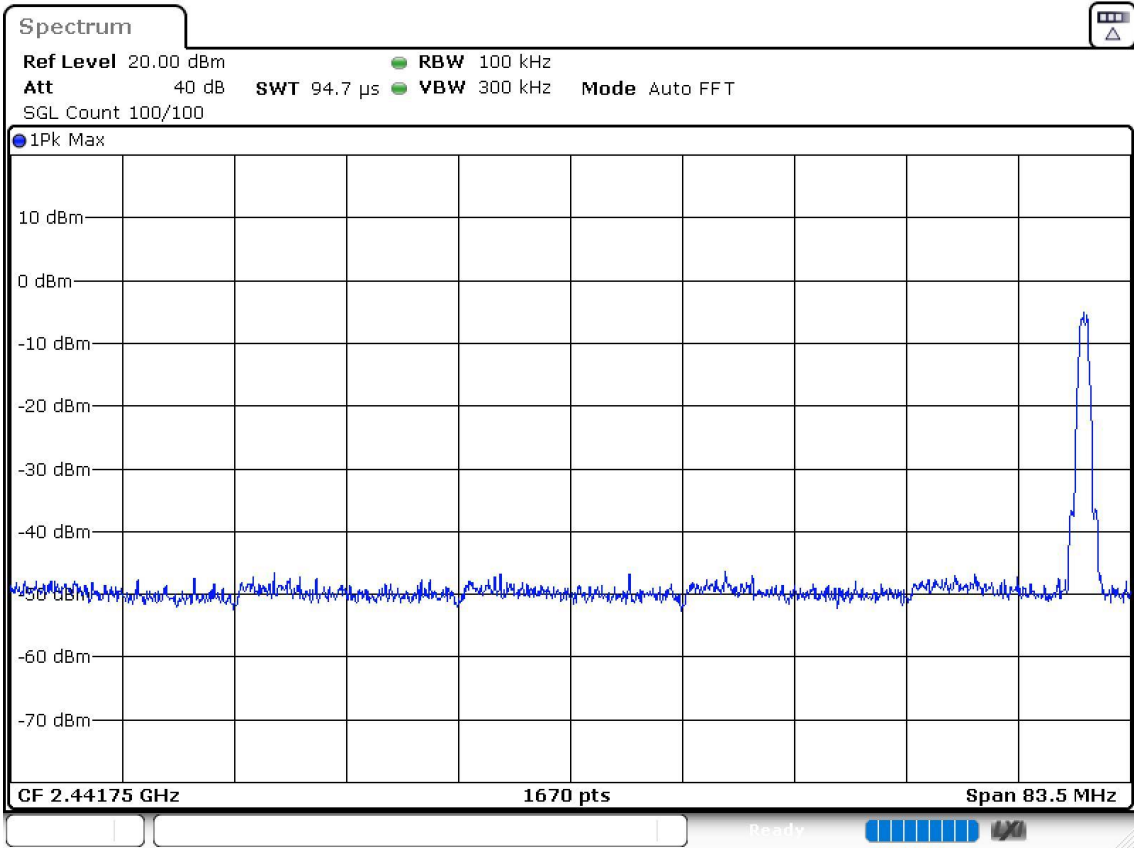
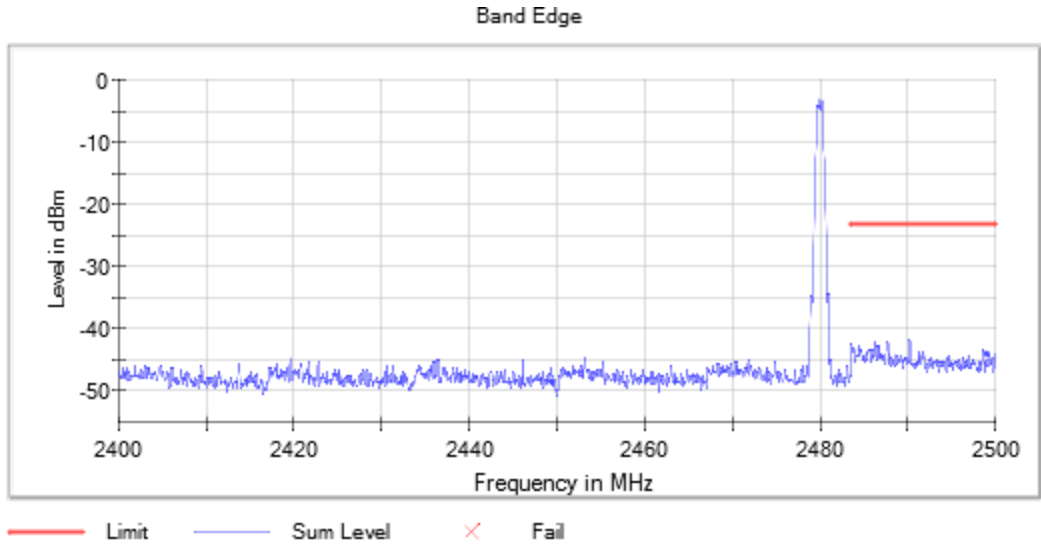
**Images:**

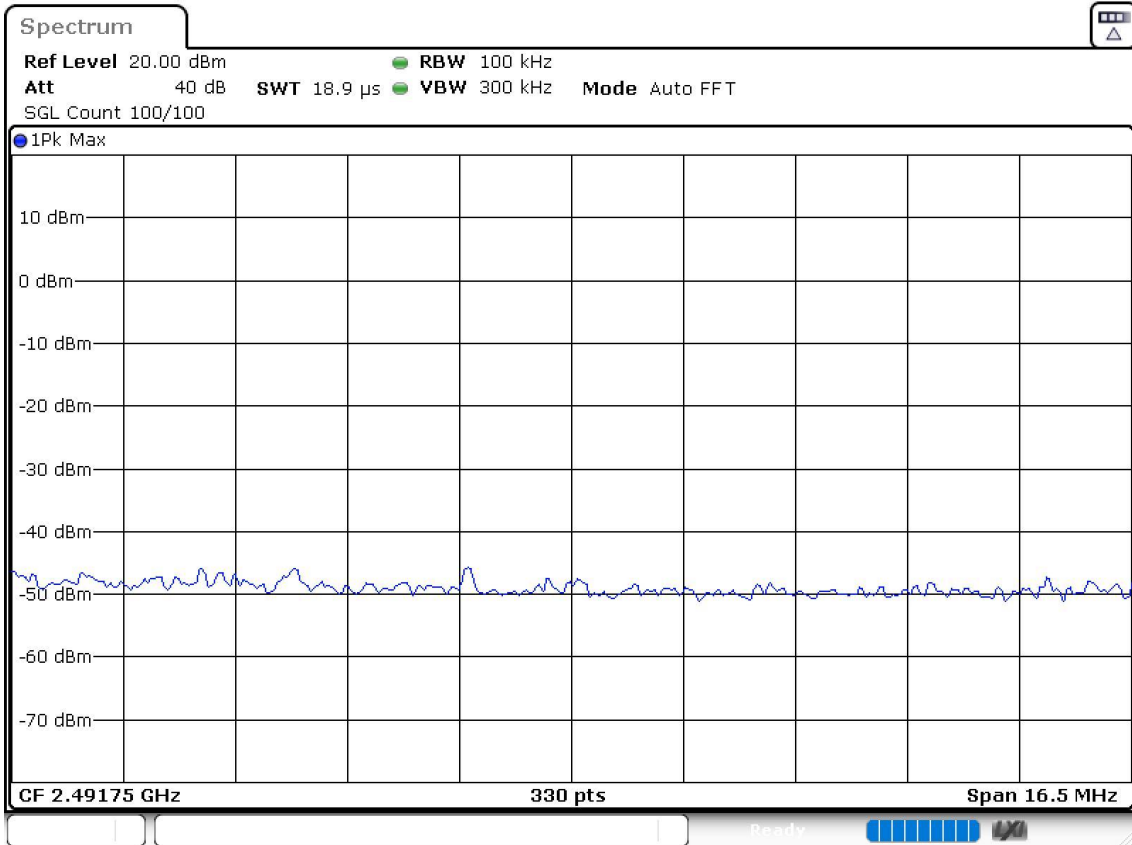




**Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Bandwidth MHz = 1, Modulation = BTLE 5.1 (GFSK 1 Mbit/s), Number of Transmission Chains = 1, Measurement Point = 1, Active Port = 1**

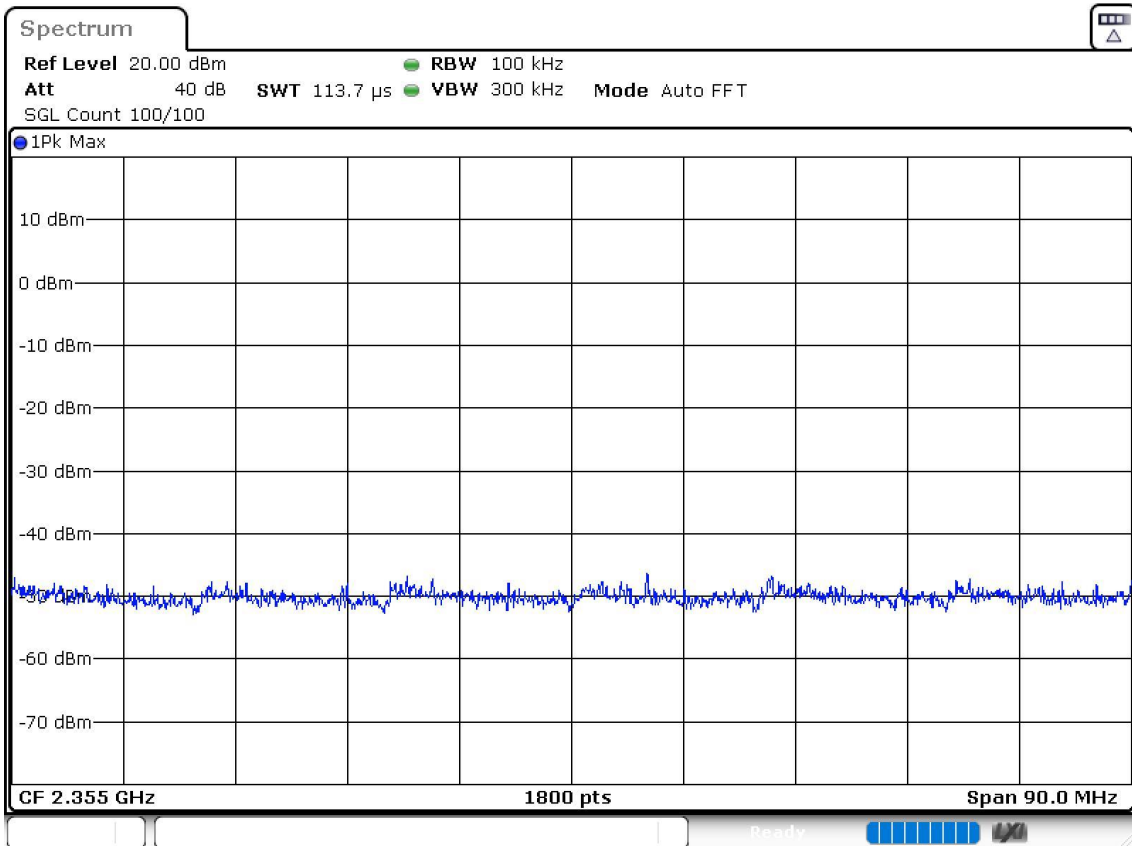
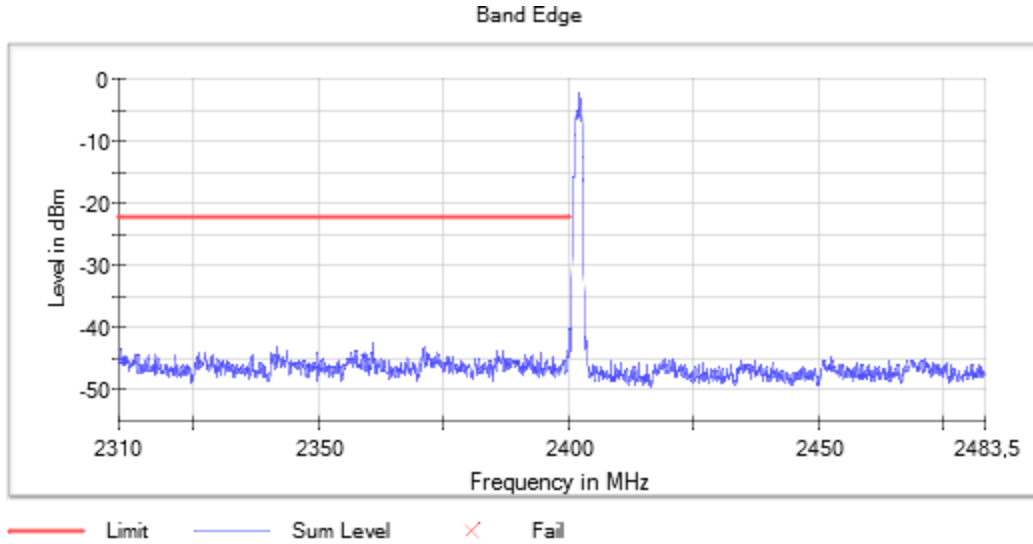
Images:

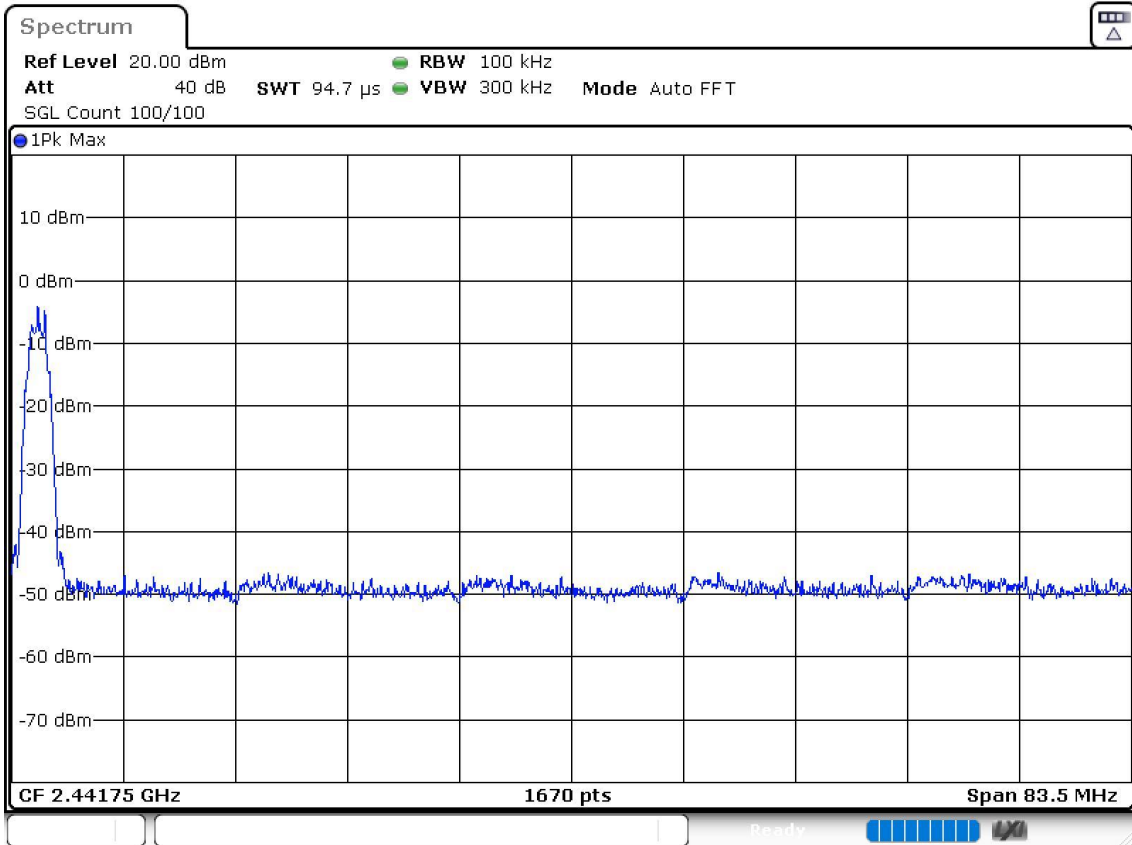




**Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Bandwidth MHz = 2, Modulation = BTLE 5.1 (GFSK 2 Mbit/s), Number of Transmission Chains = 1, Measurement Point = 1, Active Port = 1**

Images:

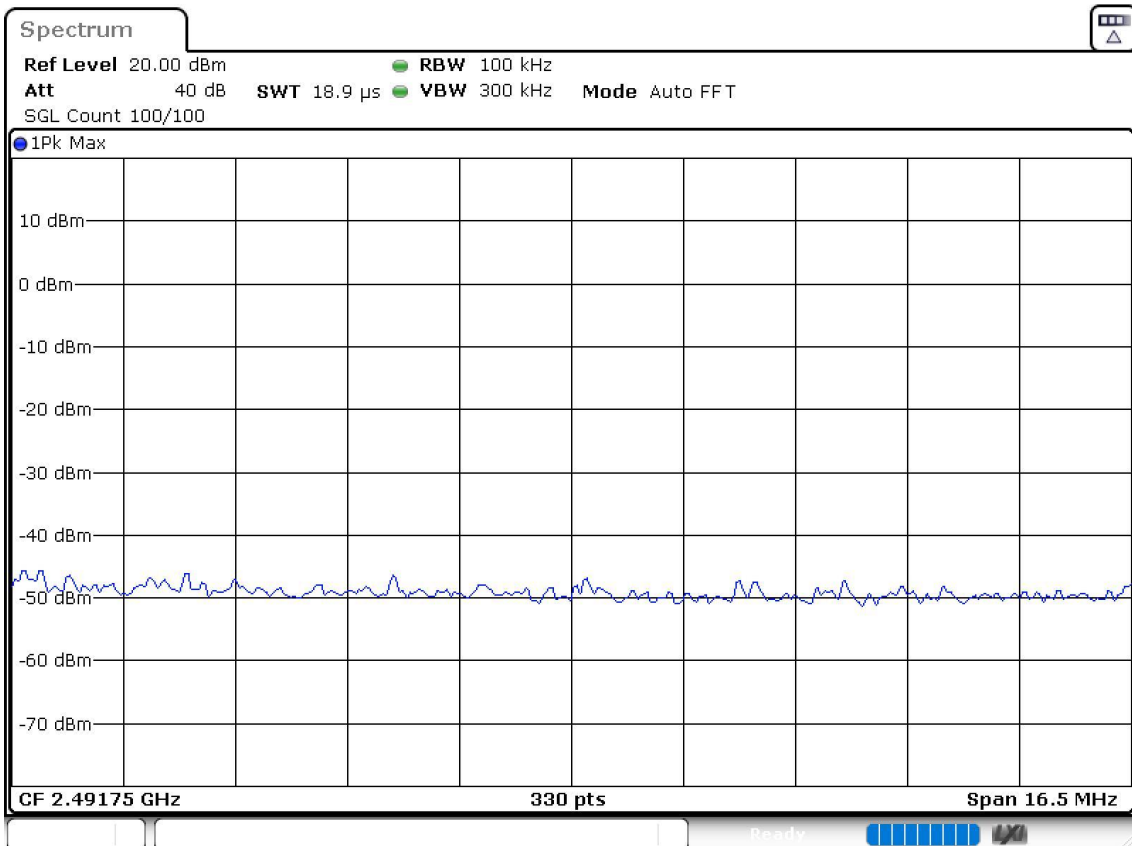
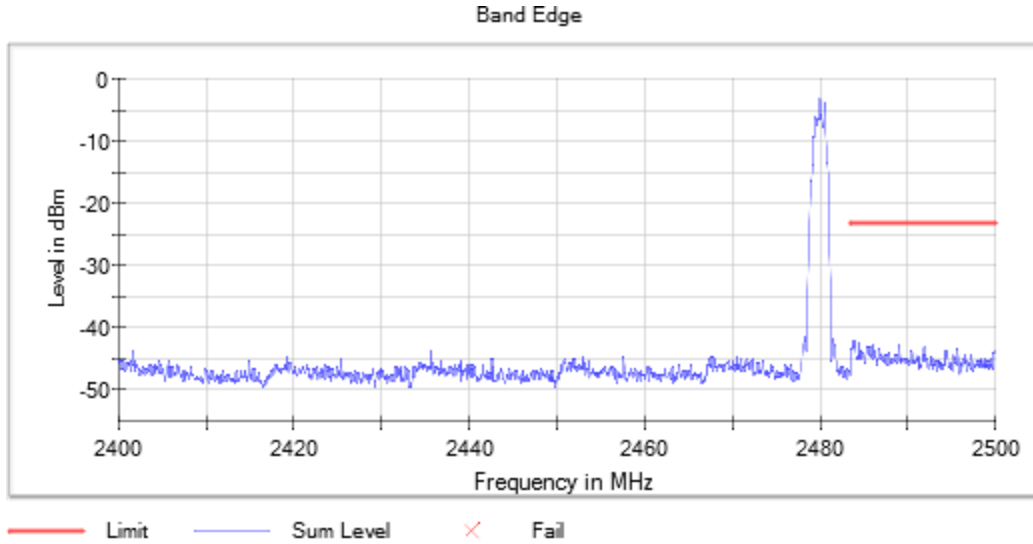


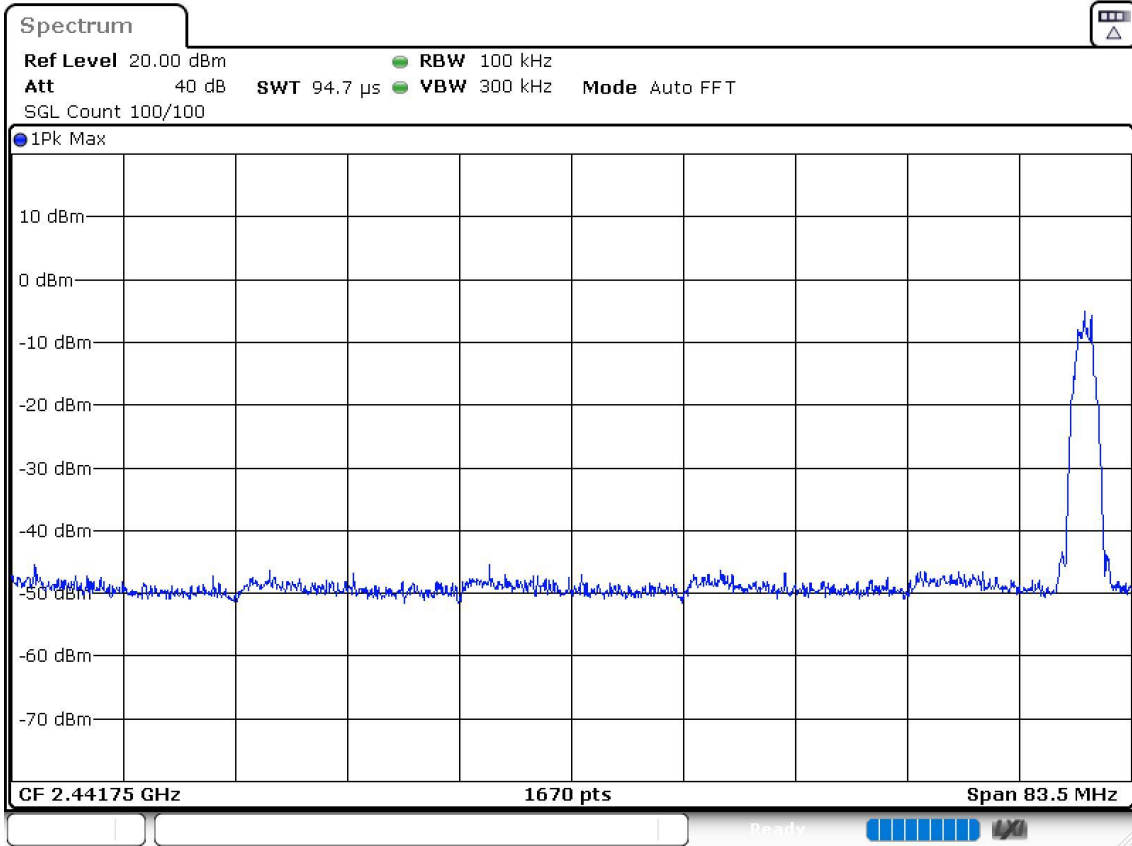




**Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Bandwidth MHz = 2, Modulation = BTLE 5.1 (GFSK 2 Mbit/s), Number of Transmission Chains = 1, Measurement Point = 1, Active Port = 1**

Images:





## FCC 15.247 (d) Emission limitations radiated (Transmitter)

### Limits

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)):

Frequency Range (MHz)	Field strength ( $\mu\text{V/m}$ )	Field strength ( $\text{dB}\mu\text{V/m}$ )	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

### Frequency range 30 MHz – 1 GHz:

The spurious frequencies detected do not depend on either the modulation or the operating channel.

Spurious frequencies detected at less than 20 dB below the limit:

Freq Rng (GHz)	Unwanted Freq (MHz)	Unwanted Lvl ( $\text{dB}\mu\text{V/m}$ )	Pol	Detector
[0.03, 1]	874.9913	42.62	V	QP

**Frequency range 1 GHz – 26 GHz:**

Modulation: BTLE 5.1 (GFSK 1 Mbit/s)

Spurious frequencies detected at less than 20 dB below the limit:

Freq (MHz)	Freq Rng (GHz)	Unwanted Freq (GHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
2402.0000	[3, 17]	4.2335	44.93	V	Peak
		5.0790	43.90	V	Peak
		5.1272	45.89	V	Peak
2440.0000		4.2333	44.58	V	Peak
		5.0201	45.10	H	Peak
		5.0982	44.94	H	Peak
2480.0000		4.2331	45.73	V	Peak
		5.0149	44.74	H	Peak
		5.1168	46.03	H	Peak

Modulation: BTLE 5.1 (GFSK 2 Mbit/s)

Spurious frequencies detected at less than 20 dB below the limit:

Freq (MHz)	Freq Rng (GHz)	Unwanted Freq (GHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
2402.0000	[3, 17]	4.9254	46.59	V	Peak
		4.9636	47.82	V	Peak
		5.0199	46.57	V	Peak
2440.0000		4.2331	46.36	V	Peak
		5.0980	55.28	V	Peak
		5.1459	45.03	V	Peak
2480.0000		4.8964	46.63	V	Peak
		5.0787	49.27	V	Peak
		5.0202	46.04	H	Peak

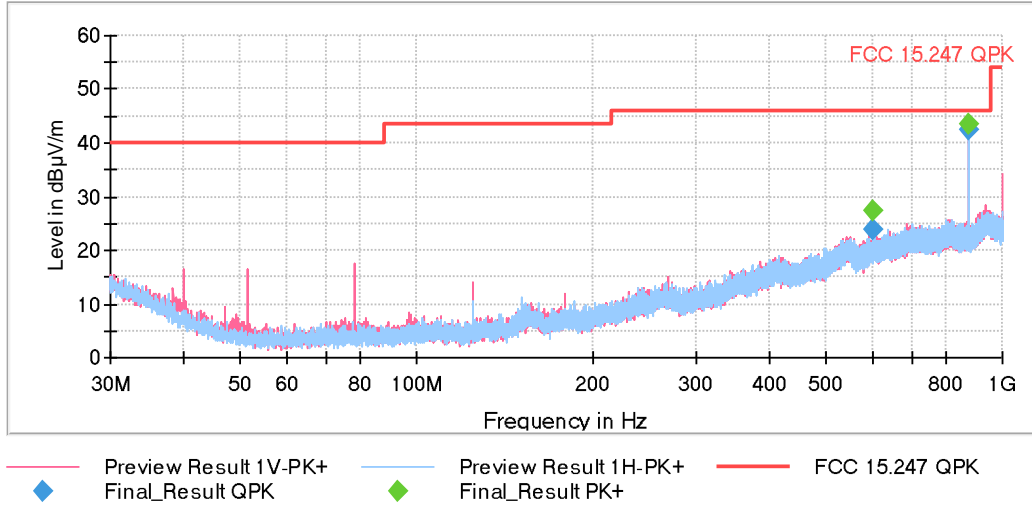
**Verdict**

Pass

**Attachments**

**Equipment Type = Digital Transmission System (DTS), Frequency Range GHz = [0.03, 1], Number of Transmission Chains = 1, Measurement Point = 1**

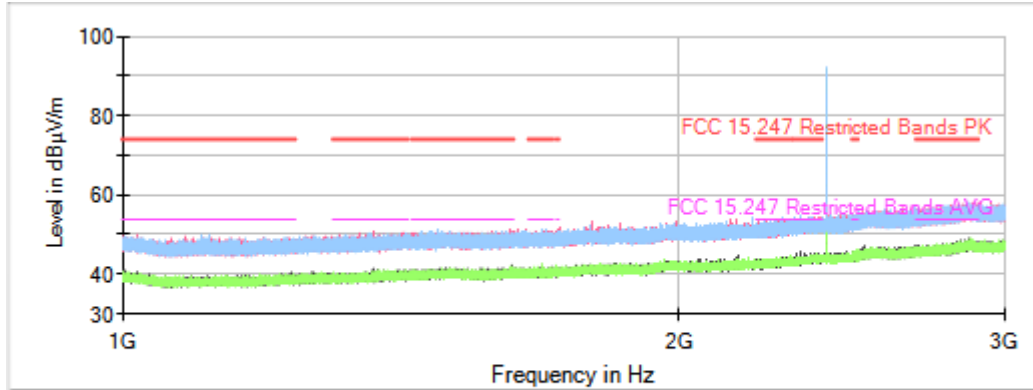
**Images:**



This plot is valid for all channel and all modulations

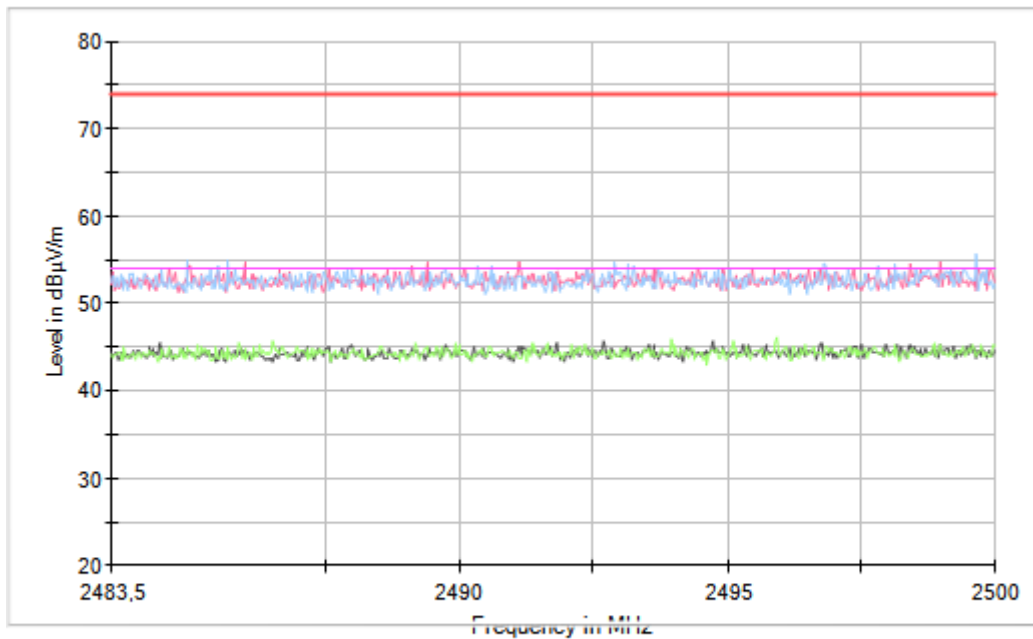
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 1 Mbit/s), Frequency Range GHz = [1, 3], Number of Transmission Chains = 1, Measurement Point = 1

Images:



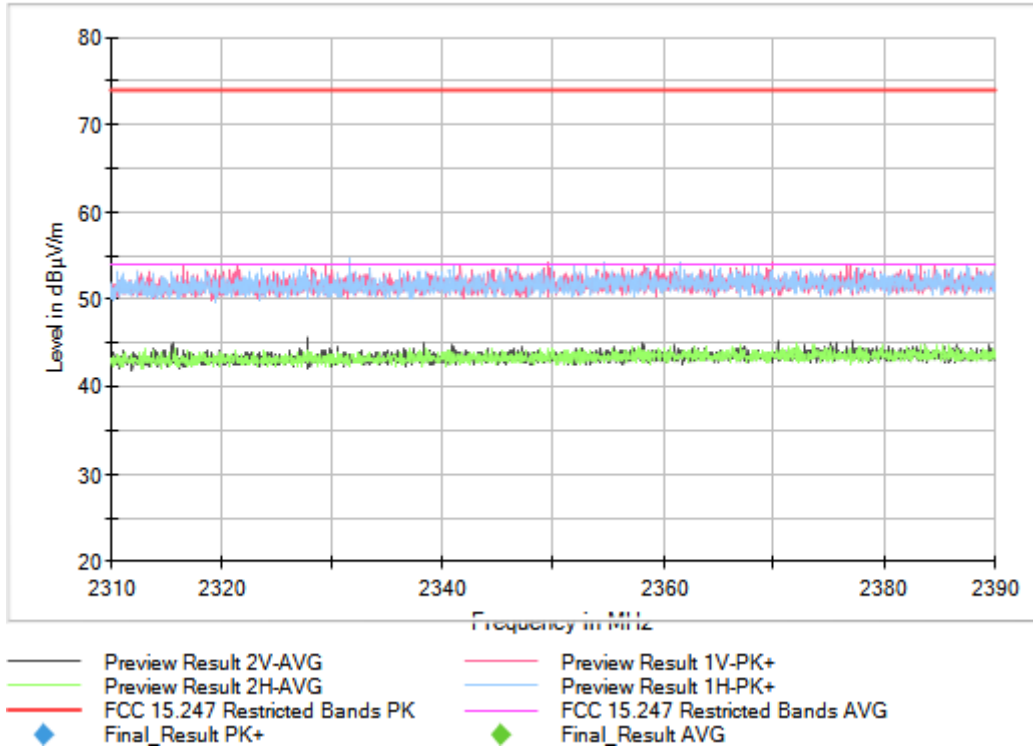
- Preview Result 2V-AVG
- Preview Result 2H-AVG
- FCC 15.247 Restricted Bands PK
- ◆ Final\_Result PK+
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands AVG
- ◆ Final\_Result AVG

Full Spectrum



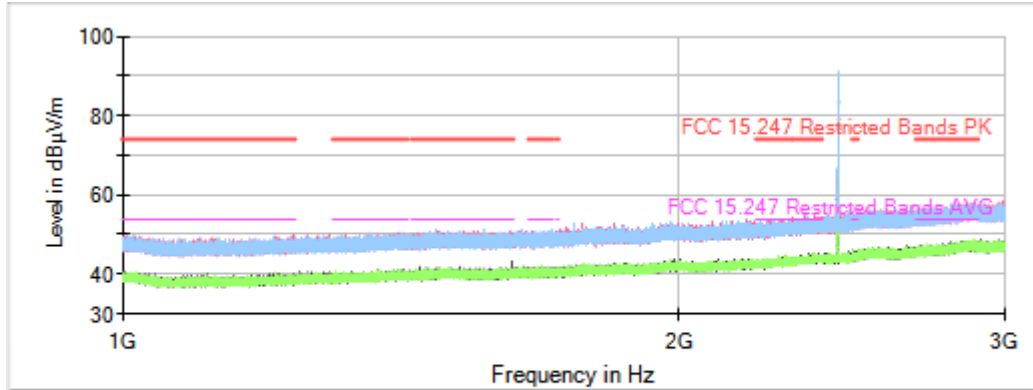
- Preview Result 2V-AVG
- Preview Result 2H-AVG
- FCC 15.247 Restricted Bands PK
- ◆ Final\_Result PK+
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands AVG
- ◆ Final\_Result AVG

Full Spectrum



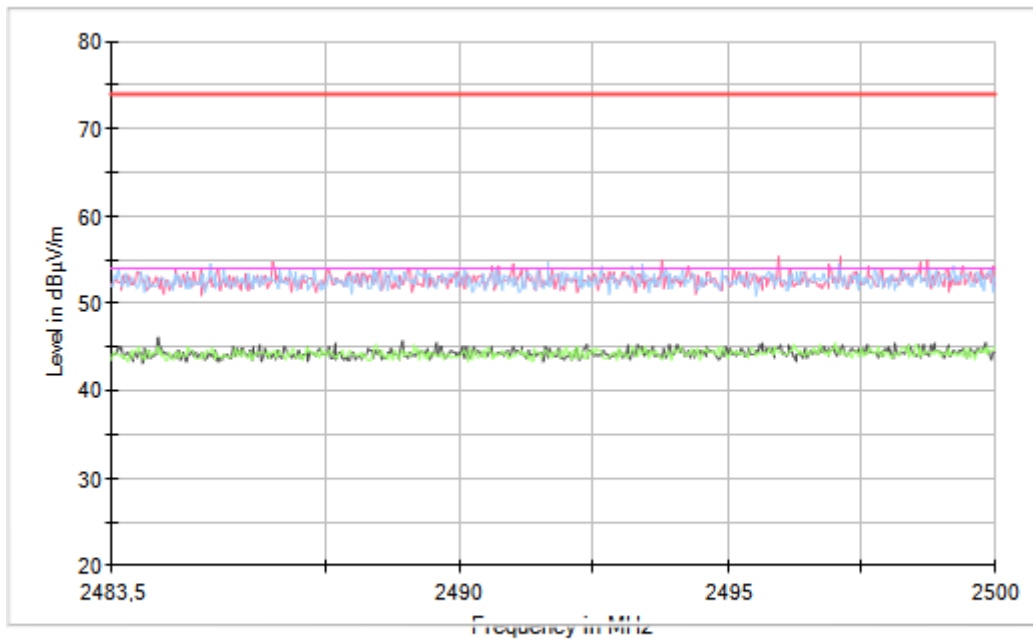
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Images:



- Preview Result 2V-AVG
- Preview Result 2H-AVG
- FCC 15.247 Restricted Bands PK
- ◆ Final\_Result PK+
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands AVG
- ◆ Final\_Result AVG

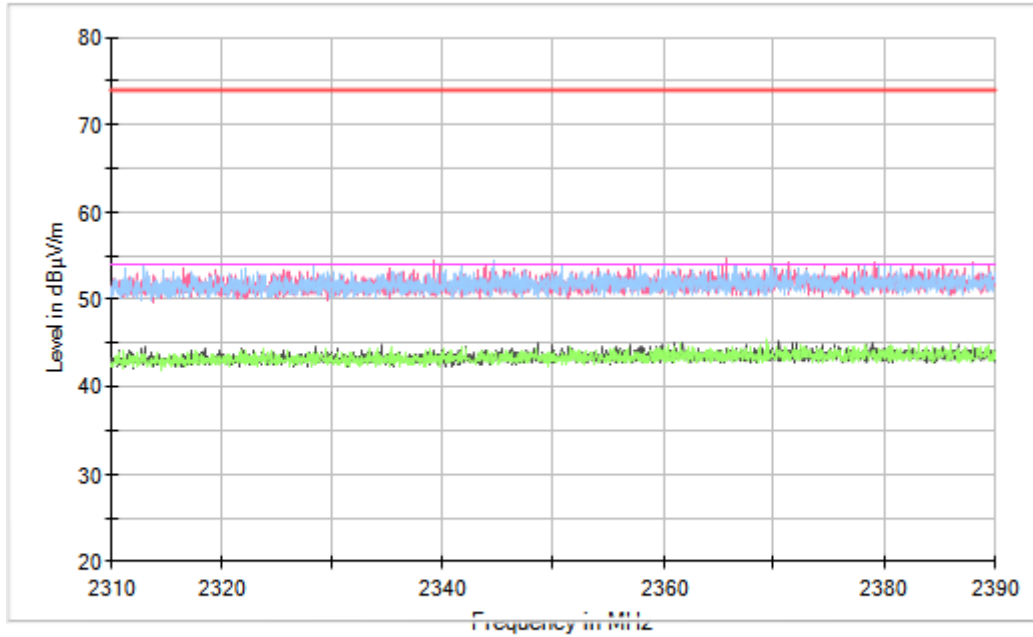
Full Spectrum



- Preview Result 2V-AVG
- Preview Result 2H-AVG
- FCC 15.247 Restricted Bands PK
- ◆ Final\_Result PK+
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands AVG
- ◆ Final\_Result AVG



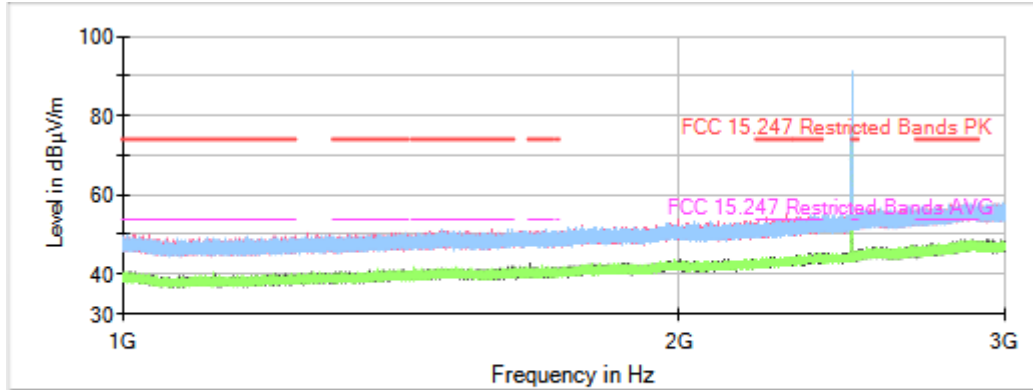
Full Spectrum



- Preview Result 2V-AVG
- Preview Result 2H-AVG
- FCC 15.247 Restricted Bands PK
- Final\_Result PK+
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands AVG
- Final\_Result AVG

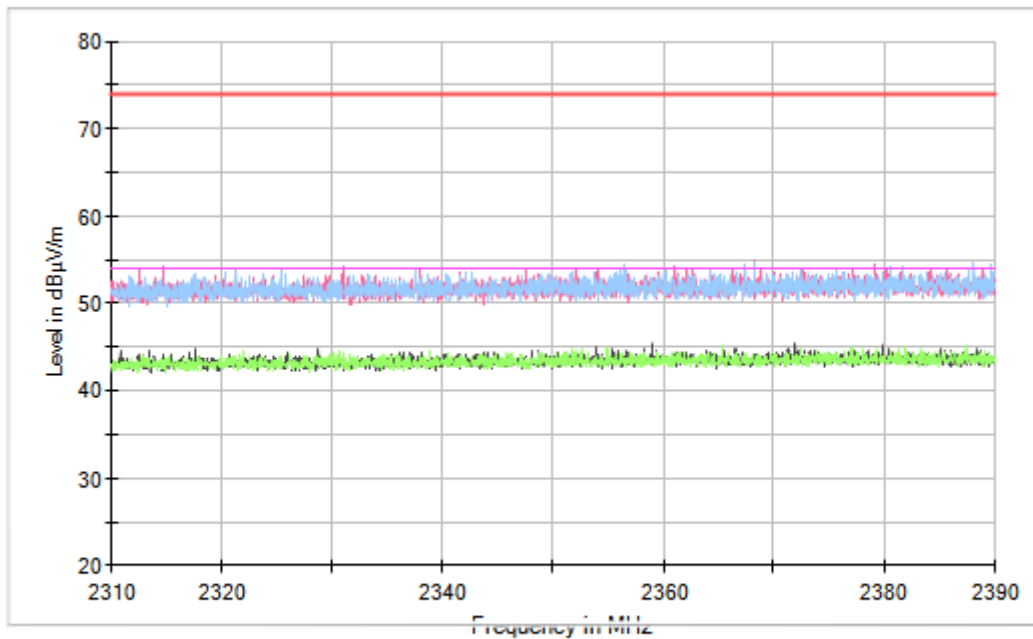
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Images:



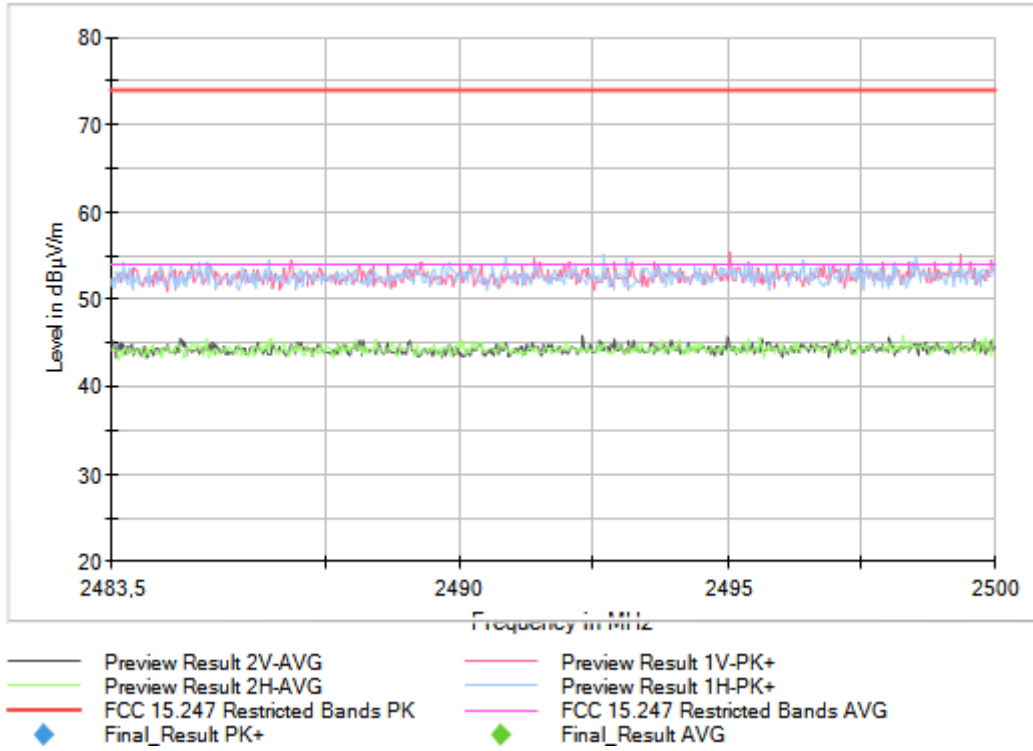
- |                                  |                                   |
|----------------------------------|-----------------------------------|
| — Preview Result 2V-AVG          | — Preview Result 1V-PK+           |
| — Preview Result 2H-AVG          | — Preview Result 1H-PK+           |
| — FCC 15.247 Restricted Bands PK | — FCC 15.247 Restricted Bands AVG |
| ◆ Final_Result PK+               | ◆ Final_Result AVG                |

Full Spectrum



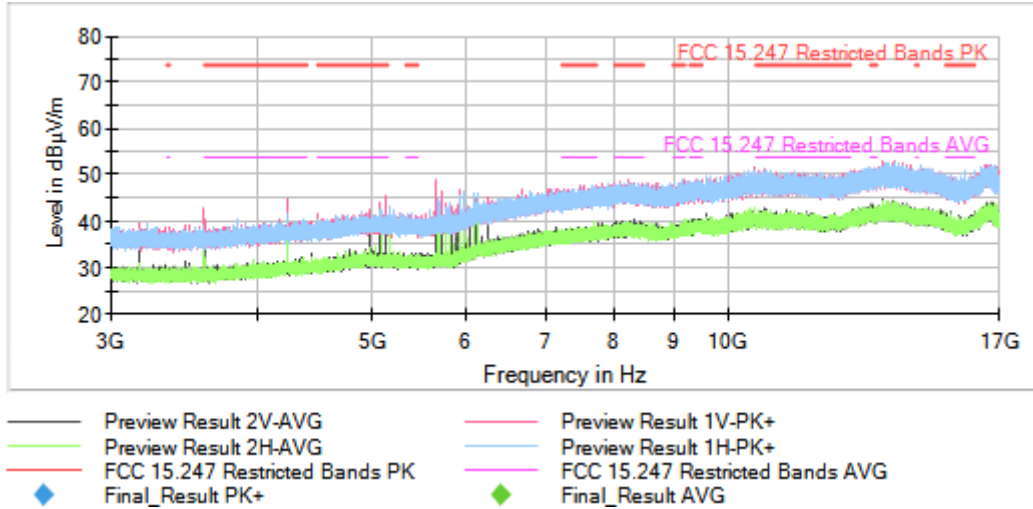
- |                                  |                                   |
|----------------------------------|-----------------------------------|
| — Preview Result 2V-AVG          | — Preview Result 1V-PK+           |
| — Preview Result 2H-AVG          | — Preview Result 1H-PK+           |
| — FCC 15.247 Restricted Bands PK | — FCC 15.247 Restricted Bands AVG |
| ◆ Final_Result PK+               | ◆ Final_Result AVG                |

Full Spectrum



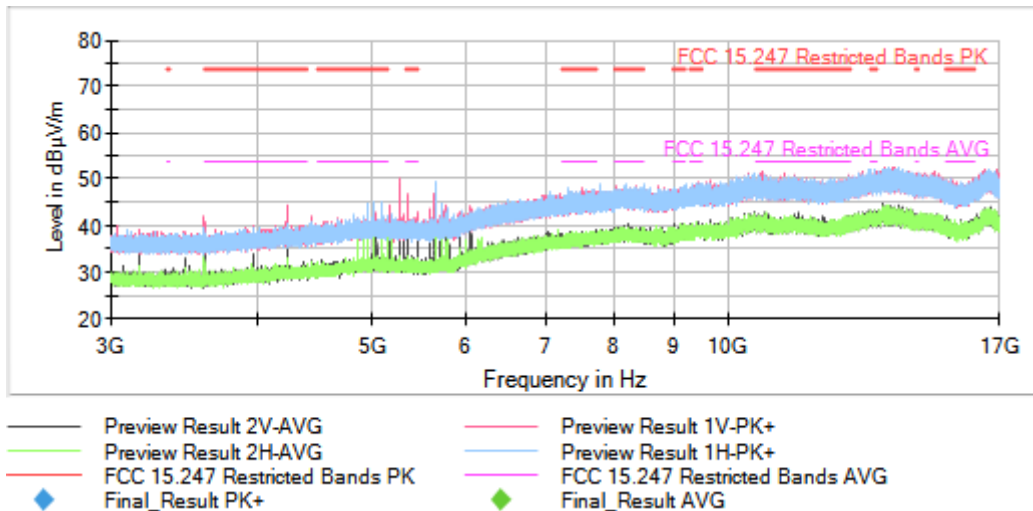
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 1 Mbit/s), Frequency Range GHz = [3, 17], Number of Transmission Chains = 1, Measurement Point = 1

Images:



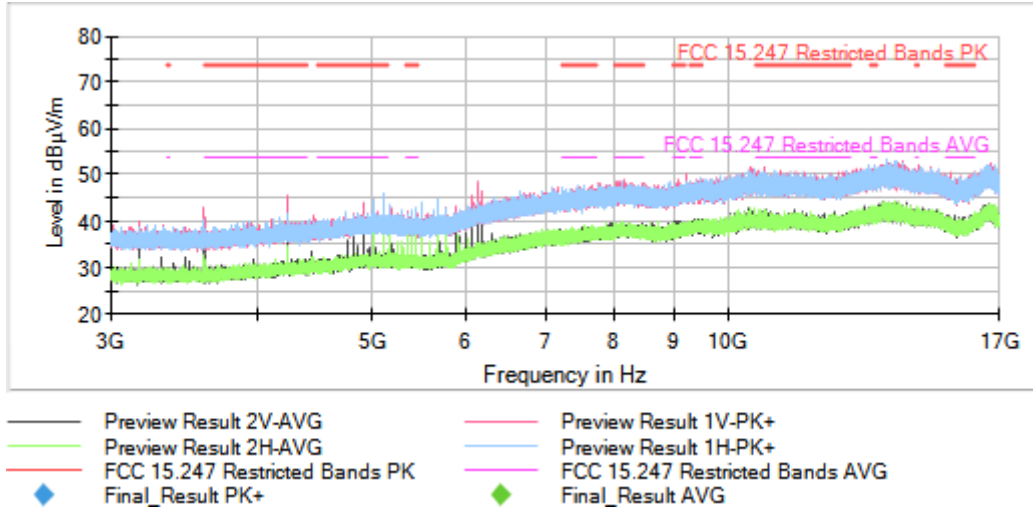
Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 1 Mbit/s), Frequency Range GHz = [3, 17], Number of Transmission Chains = 1, Measurement Point = 1

Images:



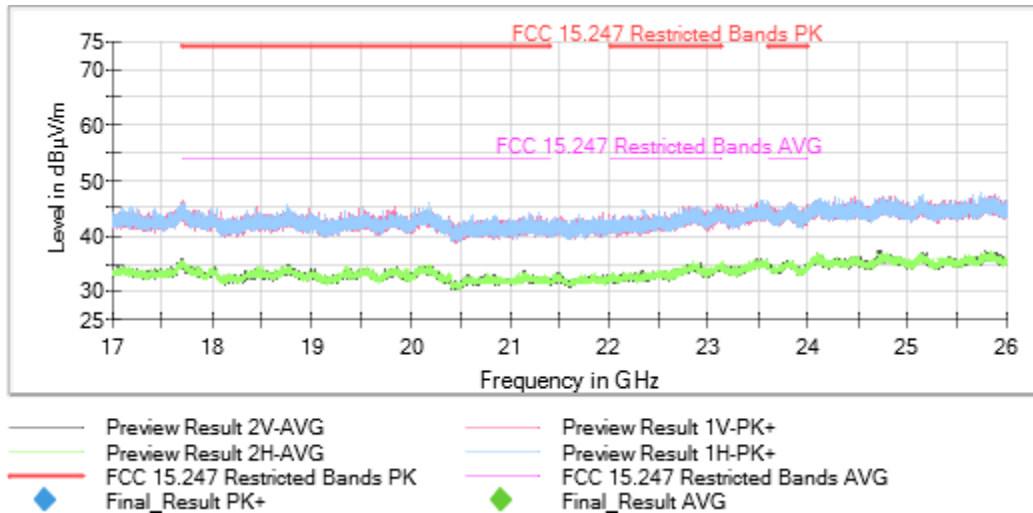
Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 1 Mbit/s), Frequency Range GHz = [3, 17], Number of Transmission Chains = 1, Measurement Point = 1

Images:



Equipment Type = Digital Transmission System (DTS), Frequency Range GHz = [17, 26], Number of Transmission Chains = 1, Measurement Point = 1

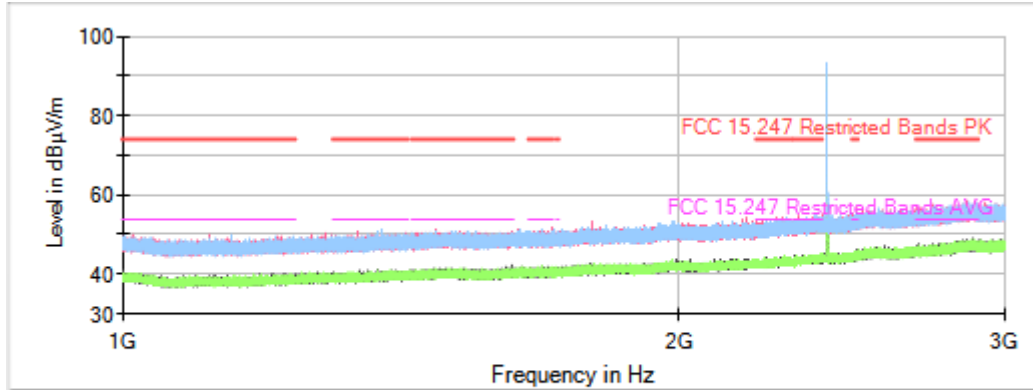
Images:



This plot is valid for all channel and all modulations

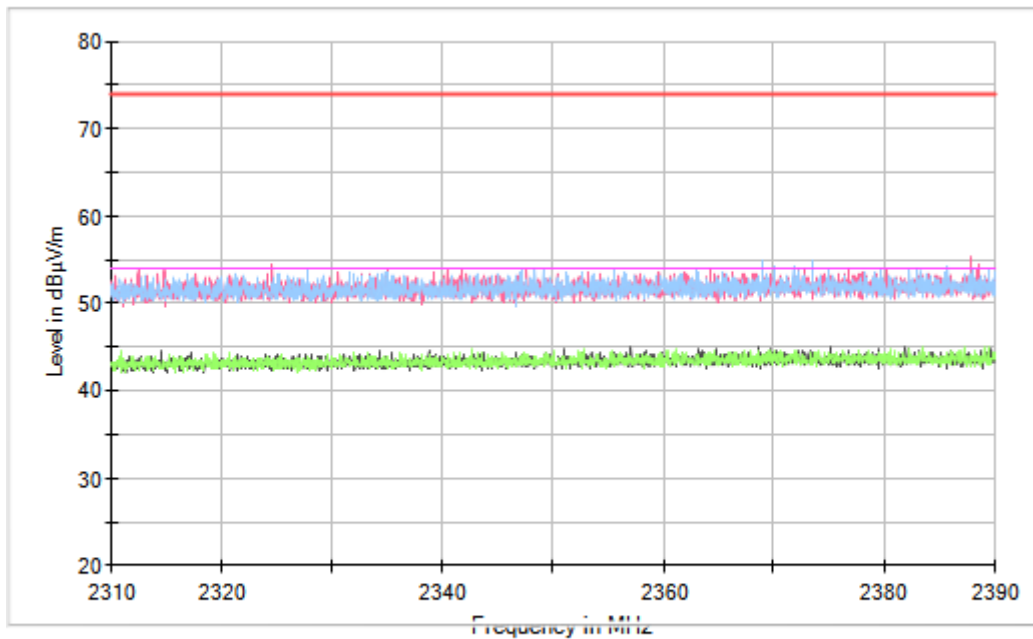
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 2 Mbit/s), Frequency Range GHz = [1, 3], Number of Transmission Chains = 1, Measurement Point = 1

Images:



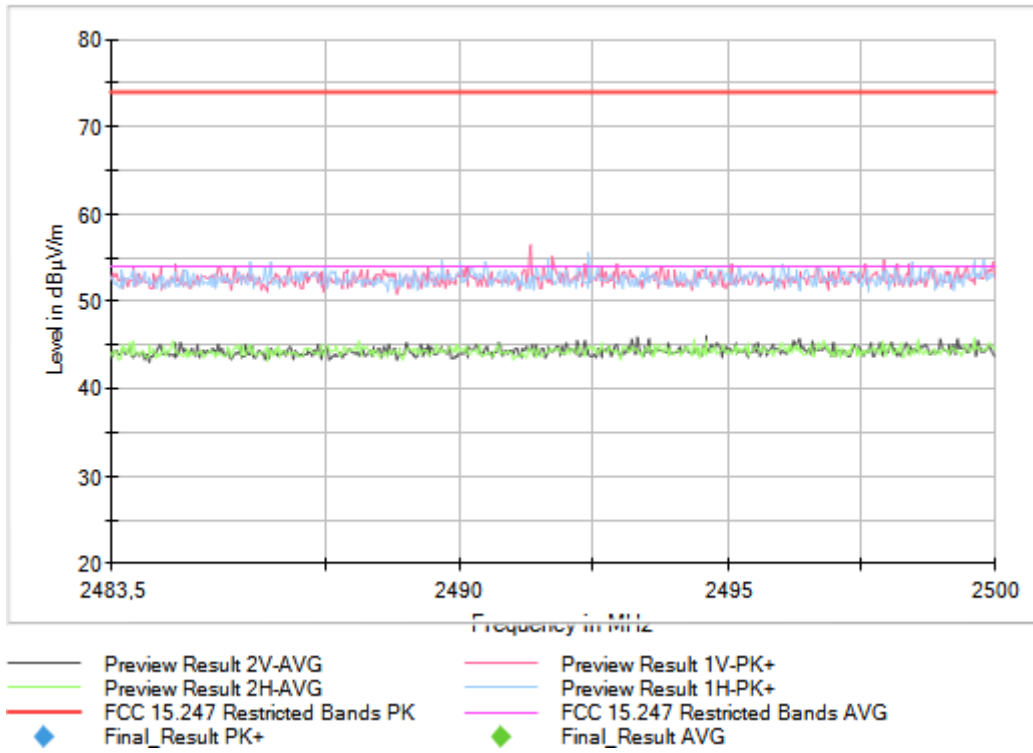
- |                                  |                                   |
|----------------------------------|-----------------------------------|
| — Preview Result 2V-AVG          | — Preview Result 1V-PK+           |
| — Preview Result 2H-AVG          | — Preview Result 1H-PK+           |
| — FCC 15.247 Restricted Bands PK | — FCC 15.247 Restricted Bands AVG |
| ◆ Final_Result PK+               | ◆ Final_Result AVG                |

Full Spectrum



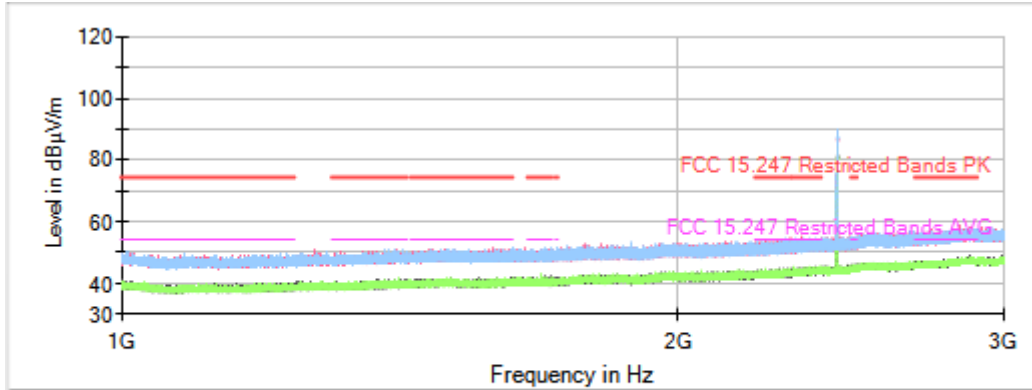
- |                                  |                                   |
|----------------------------------|-----------------------------------|
| — Preview Result 2V-AVG          | — Preview Result 1V-PK+           |
| — Preview Result 2H-AVG          | — Preview Result 1H-PK+           |
| — FCC 15.247 Restricted Bands PK | — FCC 15.247 Restricted Bands AVG |
| ◆ Final_Result PK+               | ◆ Final_Result AVG                |

Full Spectrum



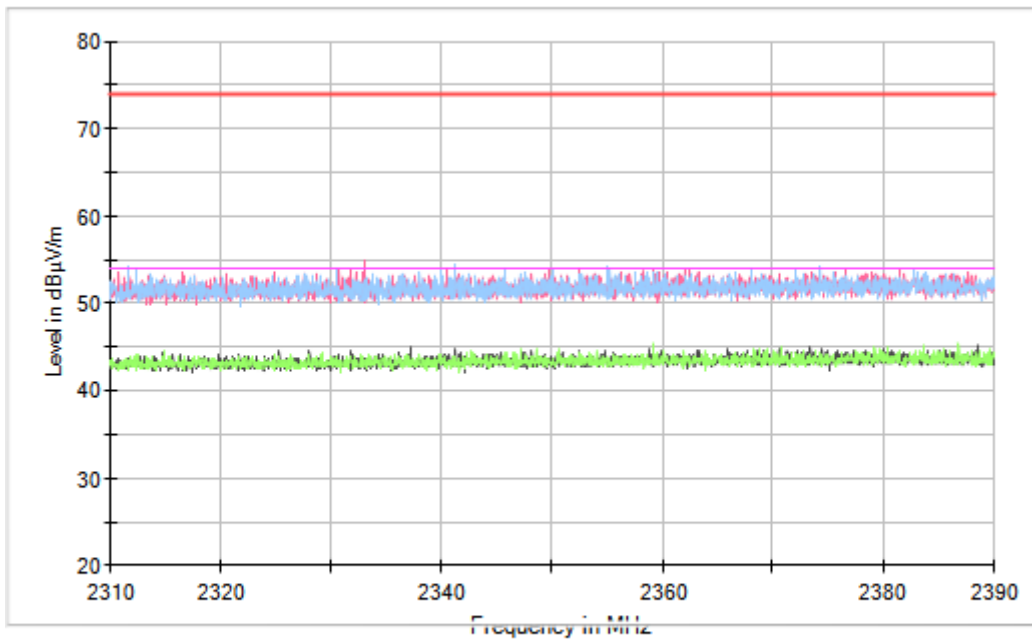
Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 2 Mbit/s), Frequency Range GHz = [1, 3], Number of Transmission Chains = 1, Measurement Point = 1

Images:



- Preview Result 2V-AVG
- Preview Result 2H-AVG
- FCC 15.247 Restricted Bands PK
- ◆ Final\_Result PK+
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands AVG
- ◆ Final\_Result AVG

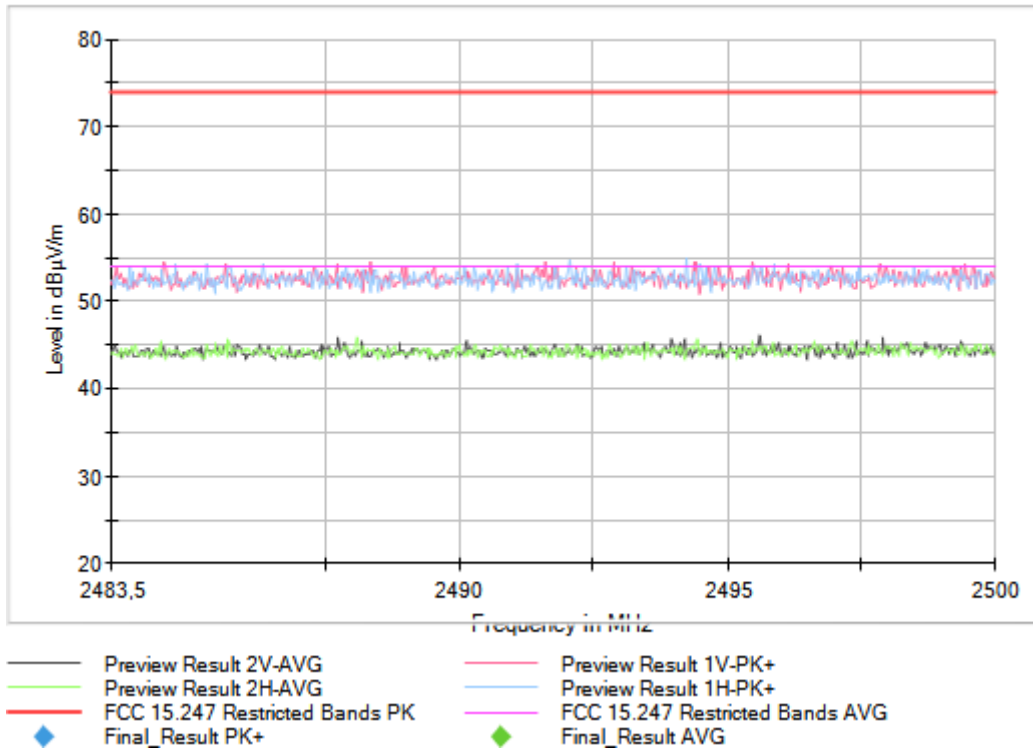
Full Spectrum



- Preview Result 2V-AVG
- Preview Result 2H-AVG
- FCC 15.247 Restricted Bands PK
- ◆ Final\_Result PK+
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands AVG
- ◆ Final\_Result AVG

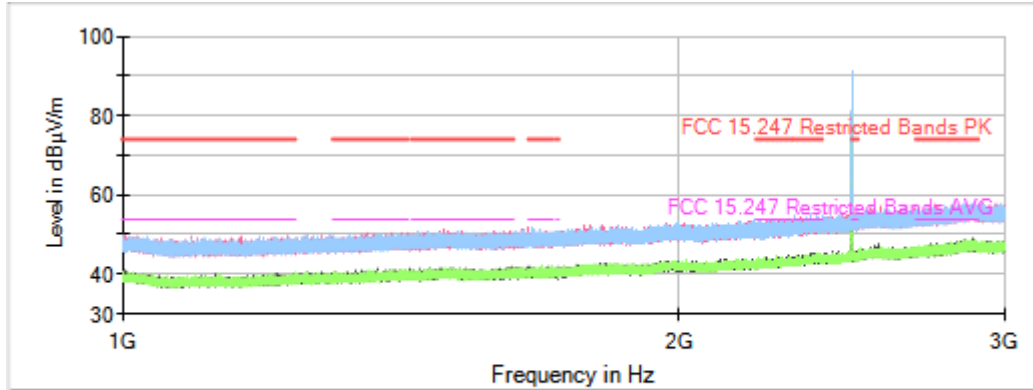


### Full Spectrum



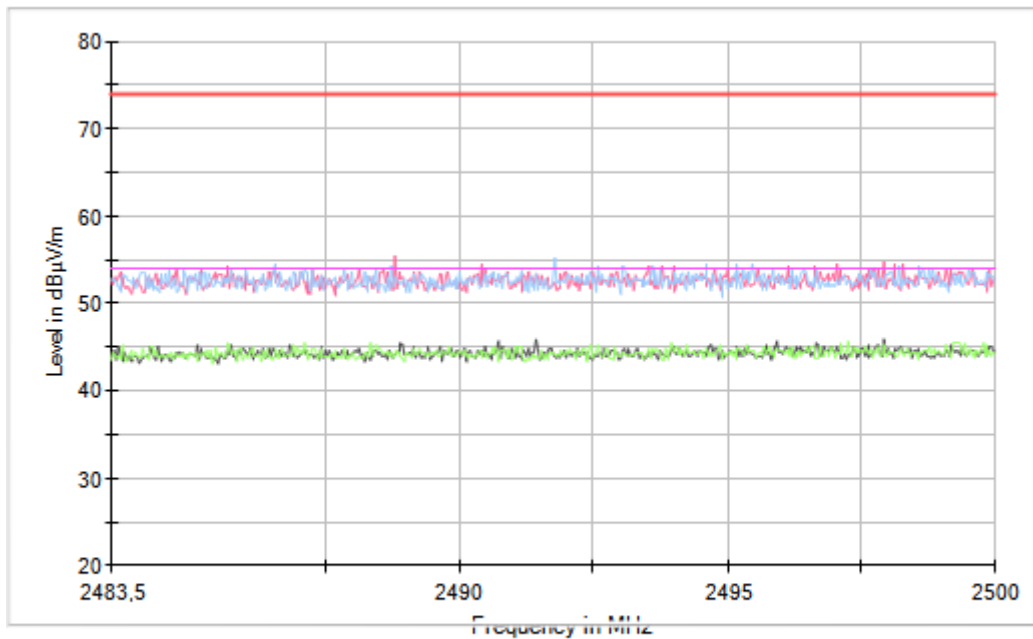
Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 2 Mbit/s), Frequency Range GHz = [1, 3], Number of Transmission Chains = 1, Measurement Point = 1

Images:



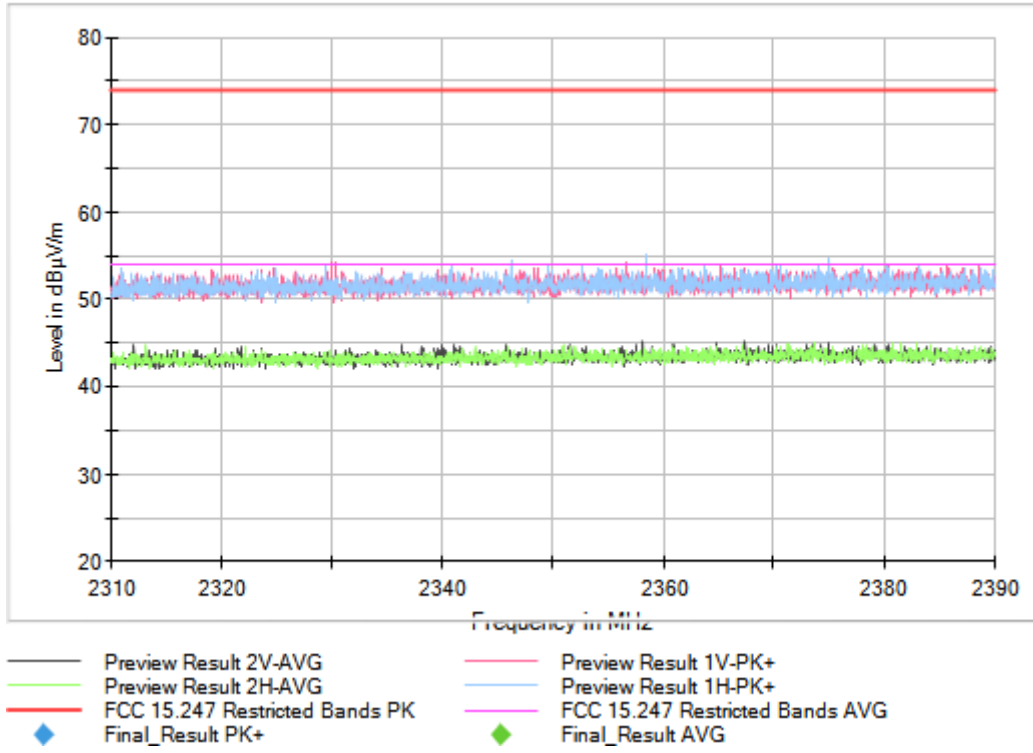
- |                                  |                                   |
|----------------------------------|-----------------------------------|
| — Preview Result 2V-AVG          | — Preview Result 1V-PK+           |
| — Preview Result 2H-AVG          | — Preview Result 1H-PK+           |
| — FCC 15.247 Restricted Bands PK | — FCC 15.247 Restricted Bands AVG |
| ◆ Final_Result PK+               | ◆ Final_Result AVG                |

Full Spectrum



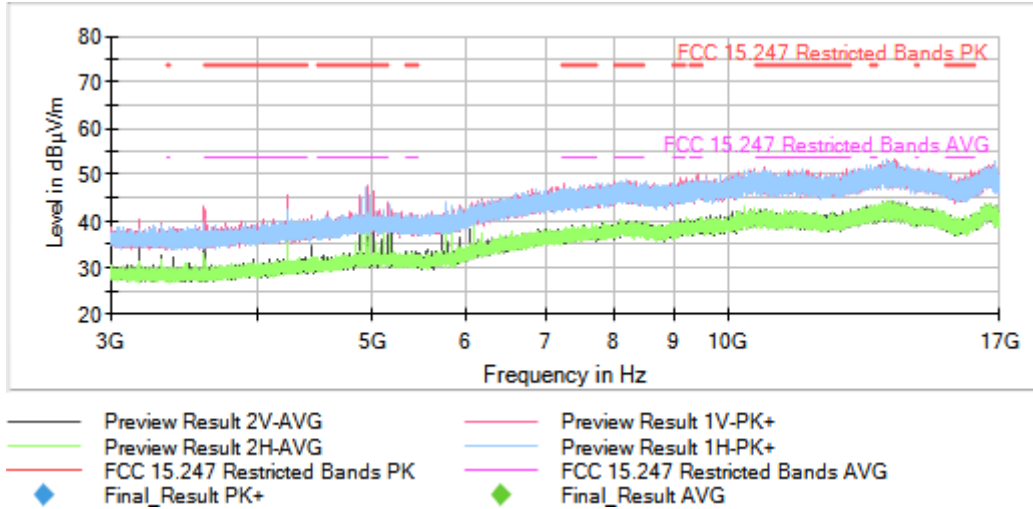
- |                                  |                                   |
|----------------------------------|-----------------------------------|
| — Preview Result 2V-AVG          | — Preview Result 1V-PK+           |
| — Preview Result 2H-AVG          | — Preview Result 1H-PK+           |
| — FCC 15.247 Restricted Bands PK | — FCC 15.247 Restricted Bands AVG |
| ◆ Final_Result PK+               | ◆ Final_Result AVG                |

Full Spectrum



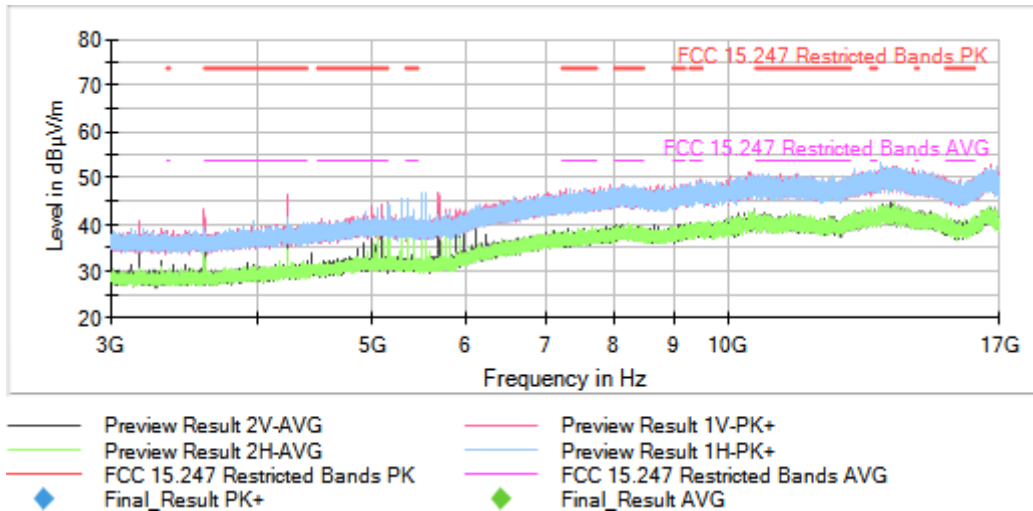
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 2 Mbit/s), Frequency Range GHz = [3, 17], Number of Transmission Chains = 1, Measurement Point = 1

Images:



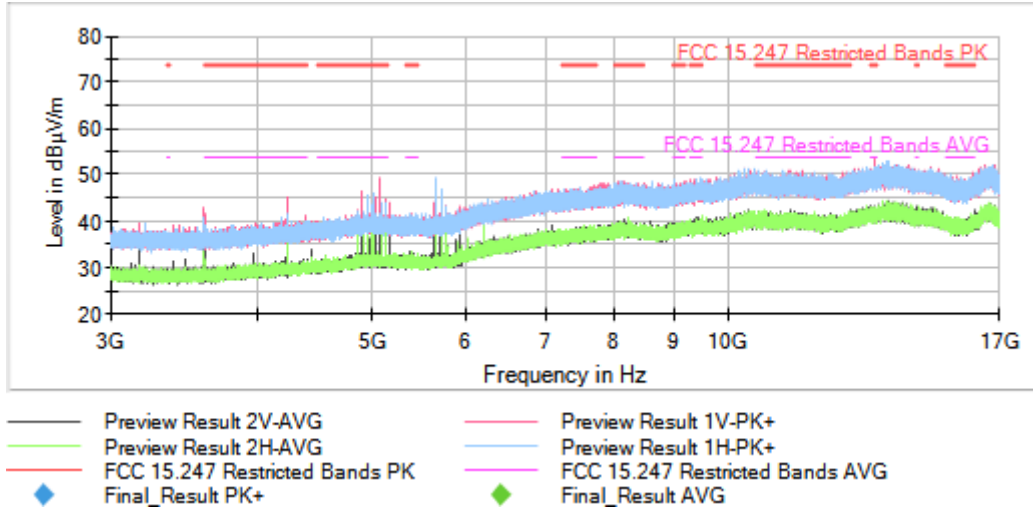
Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 2 Mbit/s), Frequency Range GHz = [3, 17], Number of Transmission Chains = 1, Measurement Point = 1

Images:



Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.1 (GFSK 2 Mbit/s), Frequency Range GHz = [3, 17], Number of Transmission Chains = 1, Measurement Point = 1

Images:



## Appendix E: Test results. WLAN 802.11 b/g/n20/ax20

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## TEST CONDITIONS

---

(\*): Data provided by the client.

### POWER SUPPLY (\*):

Vnominal:	12Vdc
Type of Power Supply:	Battery

### ANTENNA (\*):

Type of Antenna:	External Antenna
Maximum Declared Antenna Gain:	Effective antenna gain (antenna gain – cable loss) = 1.65 dBi

### TEST FREQUENCIES (\*):

Low Channel:	2412 MHz
Middle Channel:	2437 MHz
High Channel:	2462 MHz

During transmitter test the EUT was controlled by a SW tool provided by the client to operate in a continuous transmit mode on the modulation schemes and test channels as required.

The data rates below were selected as the worst-case ones in terms of conducted power and spurious emissions for each modulation scheme, based on preliminary testing:

802.11b:	1 Mbit/s
802.11g:	6 Mbit/s
802.11n:	HT20 MCS0 6.5 Mbit/s
802.11ax20 OFDM – SU Full-channel allocation:	HE20 (OFDM MCS0 index)
802.11ax20 OFDMA – RU Subcarrier allocation:	HE20 (OFDMA MCS0 index)

Preliminary measurements determined 26 tones as the worst-case RU (Resource Unit) carrier allocation.

The measured RU offset is indicated in the following table:

Offset ChLow:	0
Offset ChMid:	4
Offset ChHigh:	8



**CONDUCTED MEASUREMENTS:**

The equipment under test was set up in a shielded room and it is connected to the TS8997 using a low-loss RF cable. The reading of the spectrum analyser is corrected taking into account the cable loss.



**RADIATED MEASUREMENTS:**

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna (bilog antenna for the range from 30 MHz to 1000 MHz and 1 – 17 GHz Double ridge horn antenna) is situated at a distance of 3 m and at a distance of 1.5 m for the frequency range 17 GHz – 26 GHz (17 GHz – 40 GHz horn antenna).

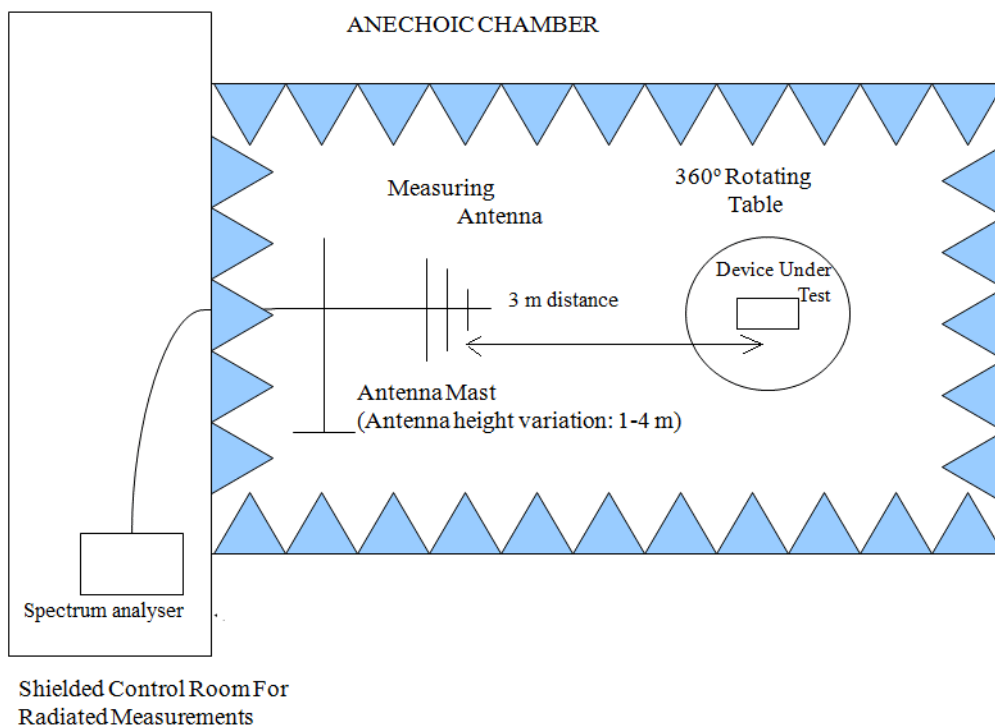
For radiated emissions in the range 17 GHz – 26 GHz performed at a distance closer than the distance specified in standard, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

The equipment under test was set up on a non-conductive platform above the ground plane and its situation and orientation were varied to find the maximum radiated emission. It was also rotated 360° and the antenna height was varied from 1 to 4 meters (up to 17GHz) to find the maximum radiated emission.

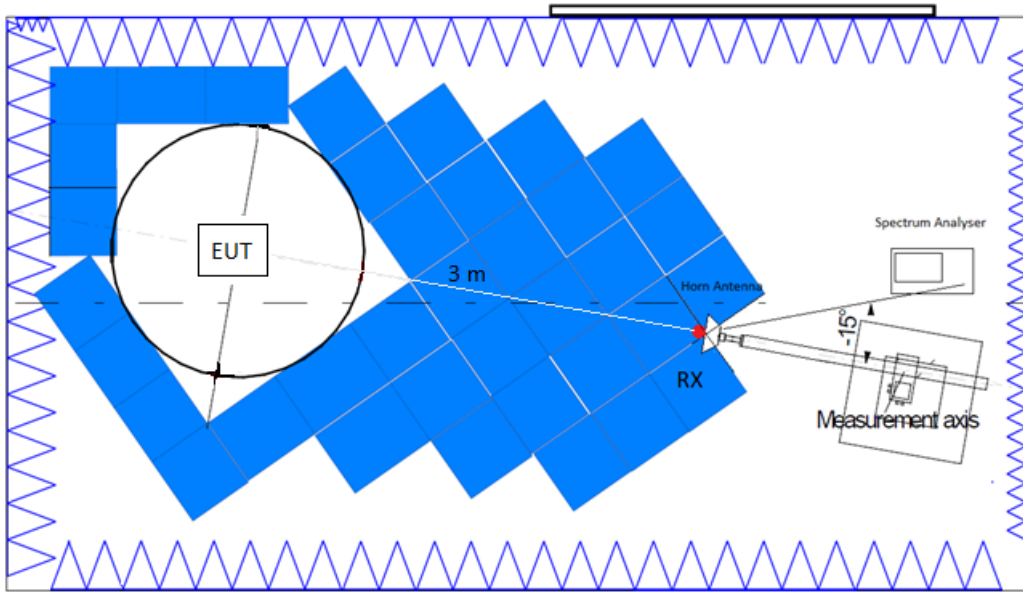
Measurements were made in both horizontal and vertical planes of polarization.

A resolution bandwidth / video bandwidth of 100 kHz / 300 kHz was used for frequencies below 1 GHz and 1 MHz / 3 MHz for frequencies above 1 GHz.

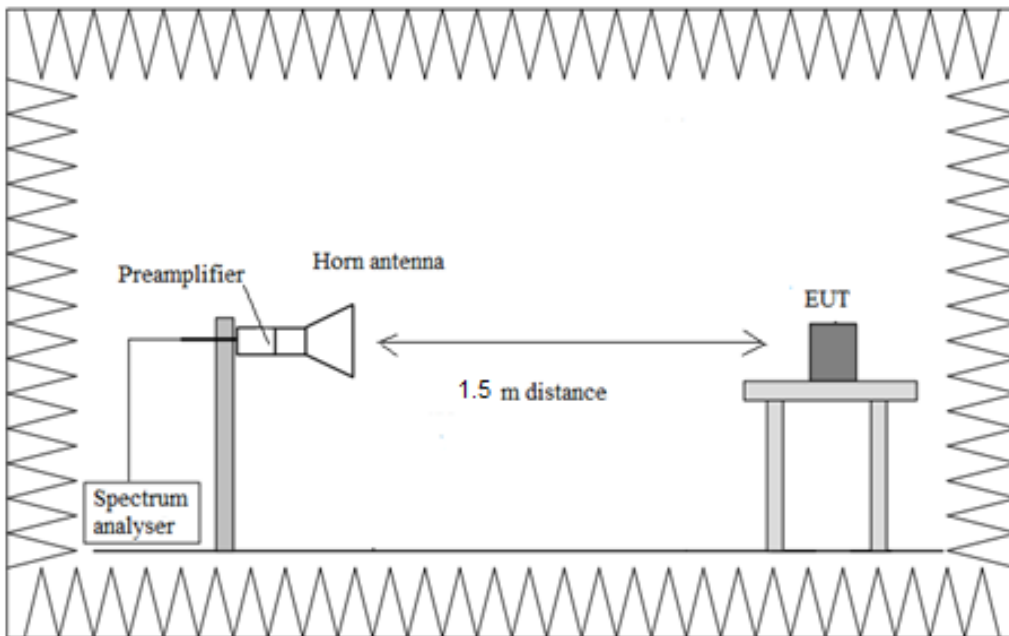
Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements setup from 1 GHz to 17 GHz:



Radiated measurements setup  $f > 17$  GHz:



## TEST CASES DETAILS

### Occupied Channel Bandwidth 99%

#### Results

Modulation: 802.11b (DSSS 1 Mbit/s)

Freq (MHz)	Occ Ch BW (MHz)
2412.00	13.00
2437.00	13.10
2462.00	13.10

Modulation: 802.11g (OFDM 6 Mbit/s)

Freq (MHz)	Occ Ch BW (MHz)
2412.00	16.30
2437.00	16.30
2462.00	16.30

Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s)

Freq (MHz)	Occ Ch BW (MHz)
2412.00	17.50
2437.00	17.50
2462.00	17.50

Modulation: 802.11ax20 HE20 (OFDM MCS0 index) – SU Full-channel allocation

Freq (MHz)	Occ Ch BW (MHz)
2412.00	18.90
2437.00	18.90
2462.00	18.90

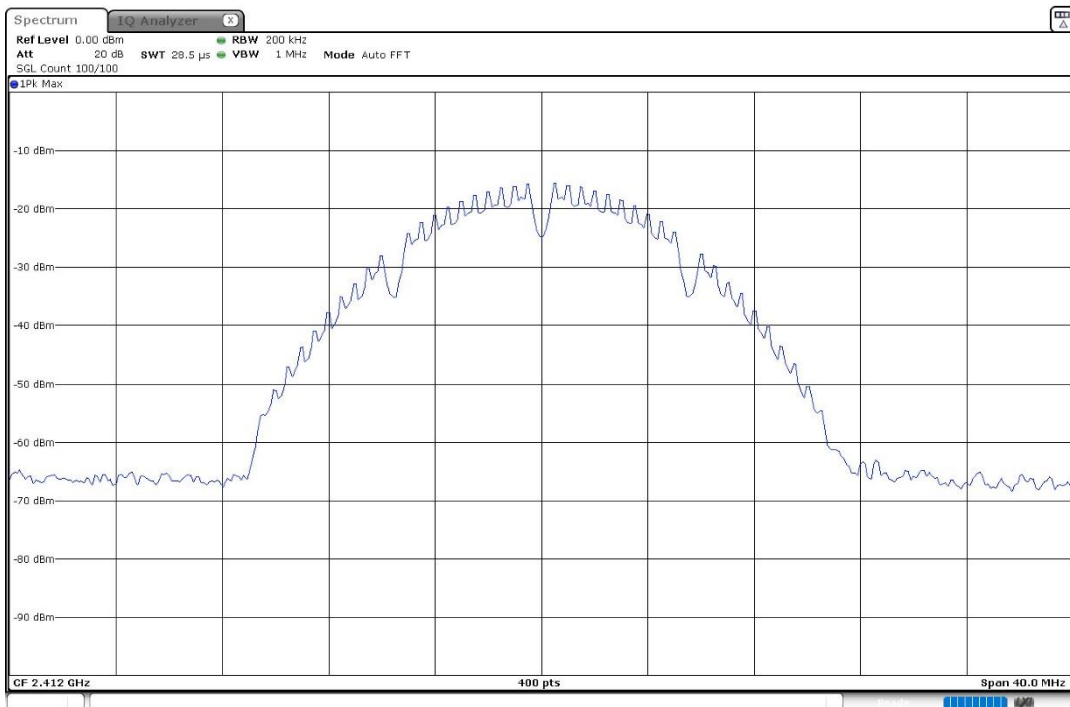
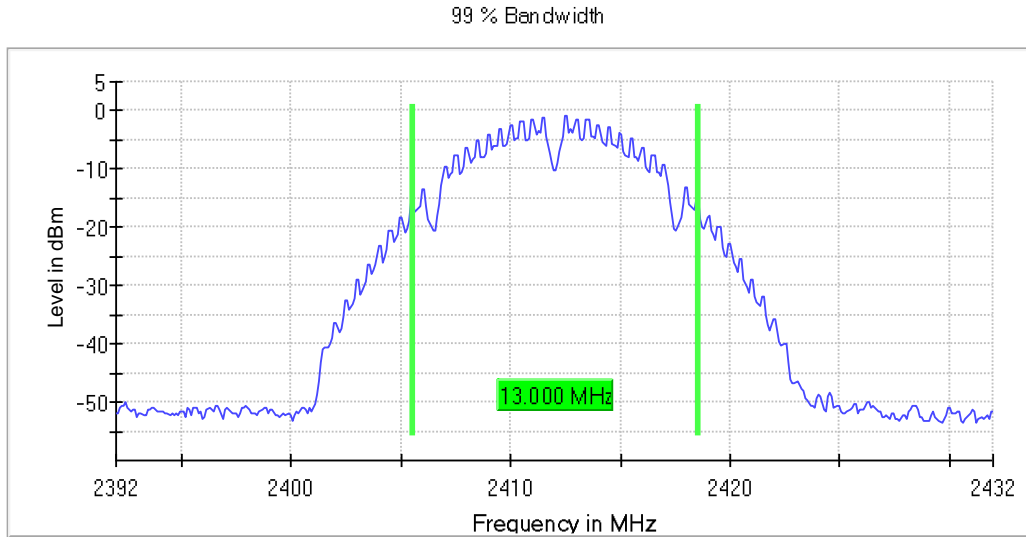
Modulation: 802.11ax20 HE20 (OFDMA MCS0 index) – RU Subcarrier allocation

Freq (MHz)	Occ Ch BW (MHz)
2412.00	18.50
2437.00	17.30
2462.00	18.40

**Attachments**

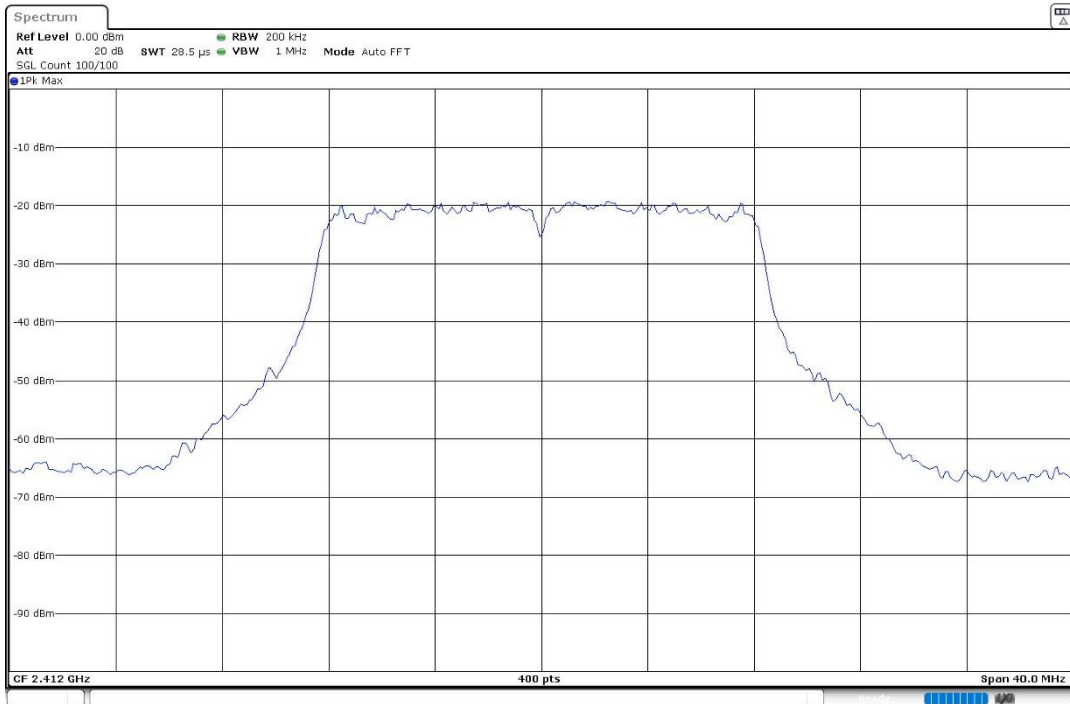
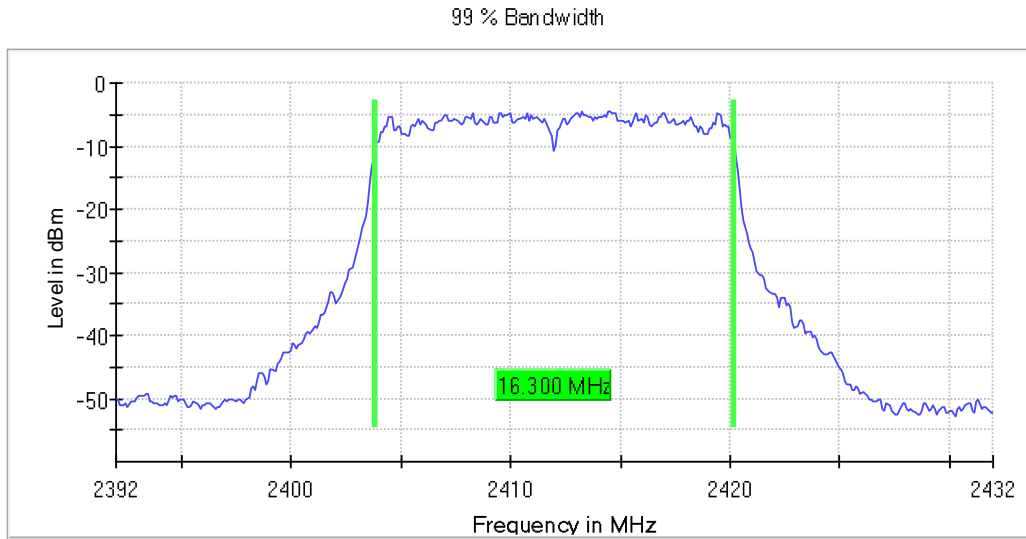
**Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2412.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11b (DSSS 1 Mbit/s), Number of Transmission Chains = 1**

**Plots:**



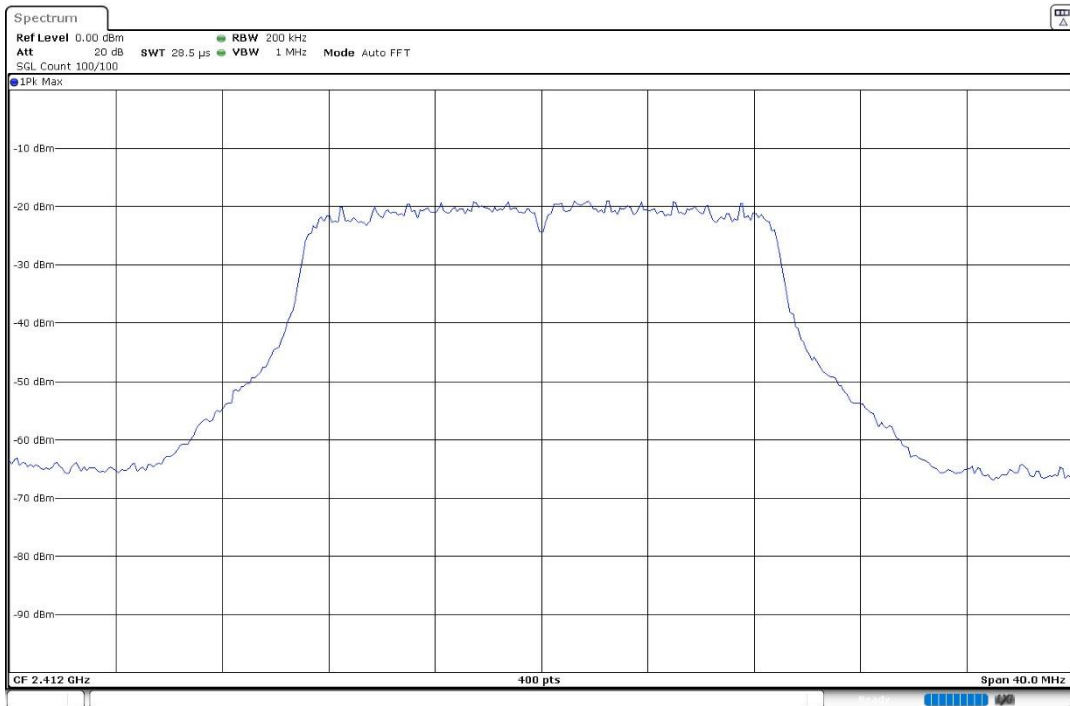
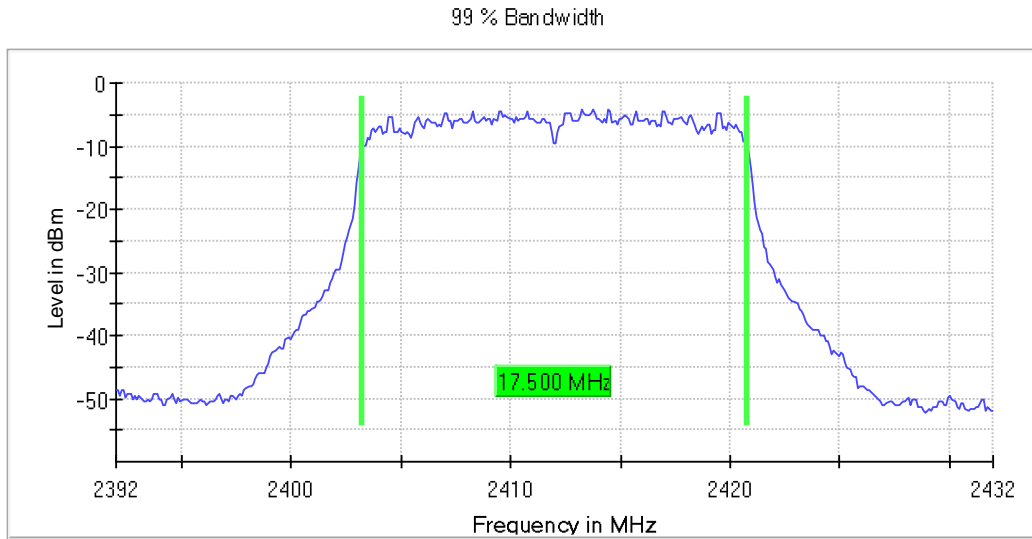
**Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2412.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11g (OFDM 6 Mbit/s), Number of Transmission Chains = 1**

**Plots:**



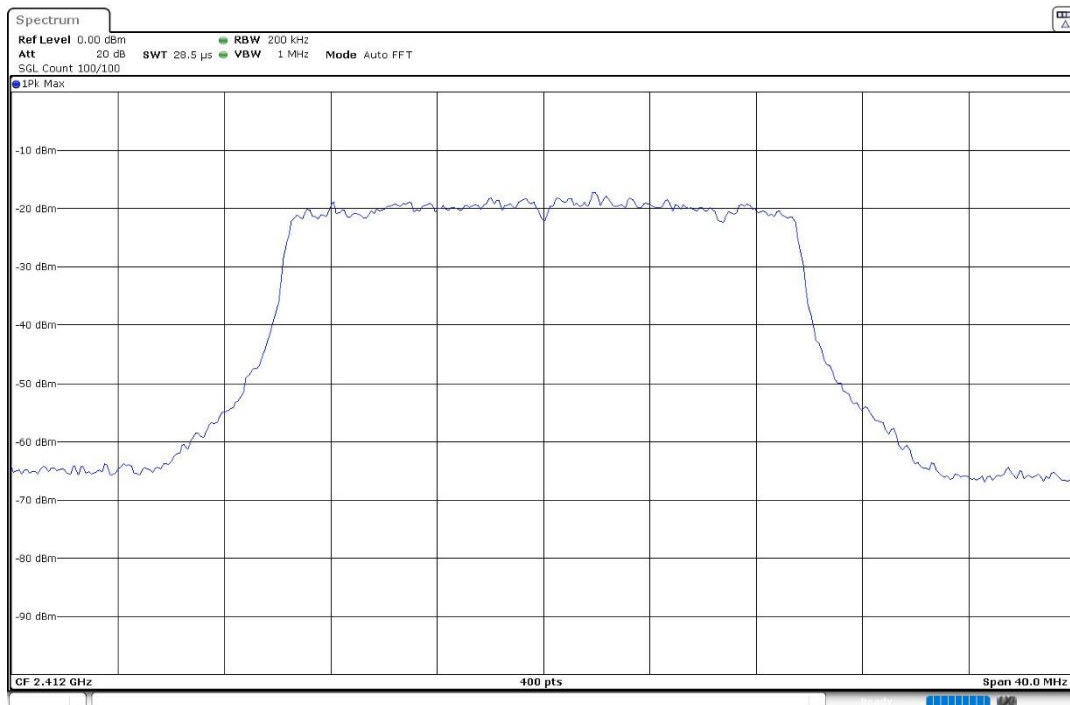
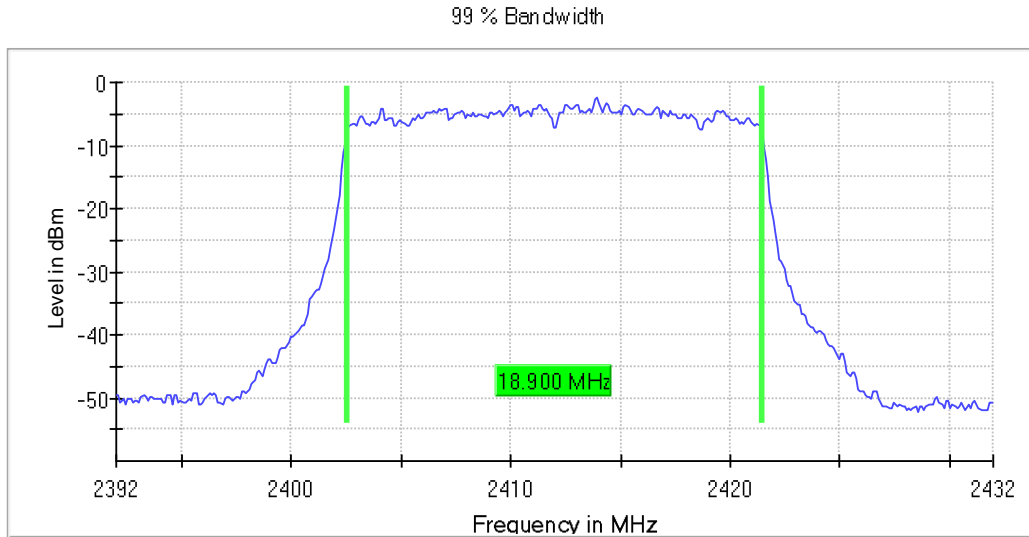
**Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2412.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Number of Transmission Chains = 1**

**Plots:**



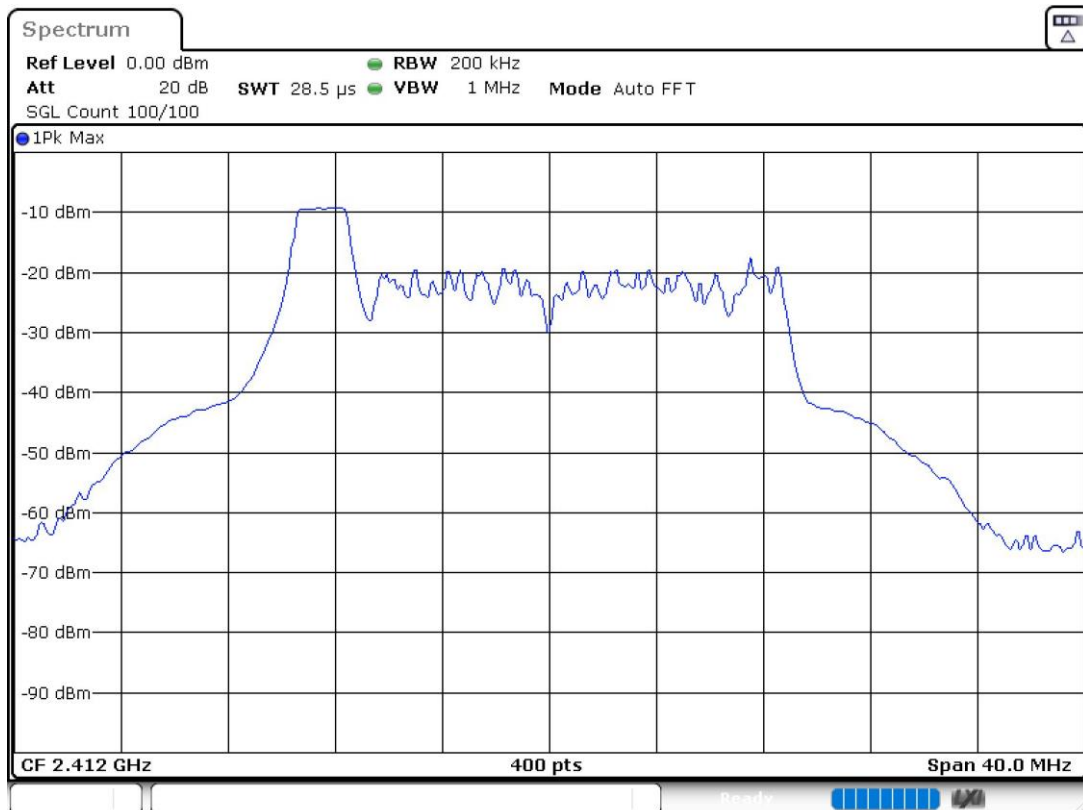
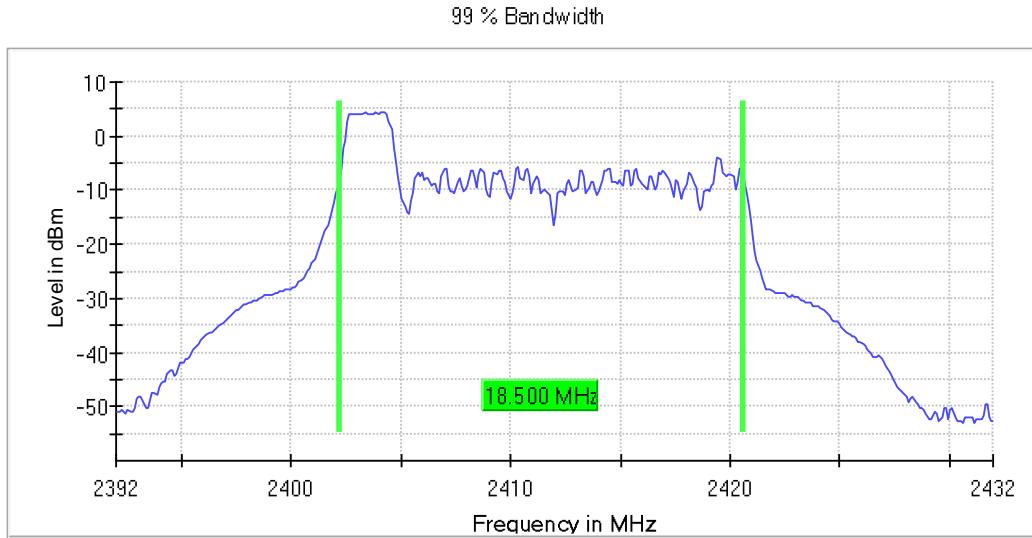
**Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2412.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11ax20 HE20 SU Full-channel allocation (OFDM MCS0 index), Number of Transmission Chains = 1**

**Plots:**



**Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2412.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11ax20 HE20 RU Subcarrier allocation (OFDMA MCS0 index), Number of Transmission Chains = 1**

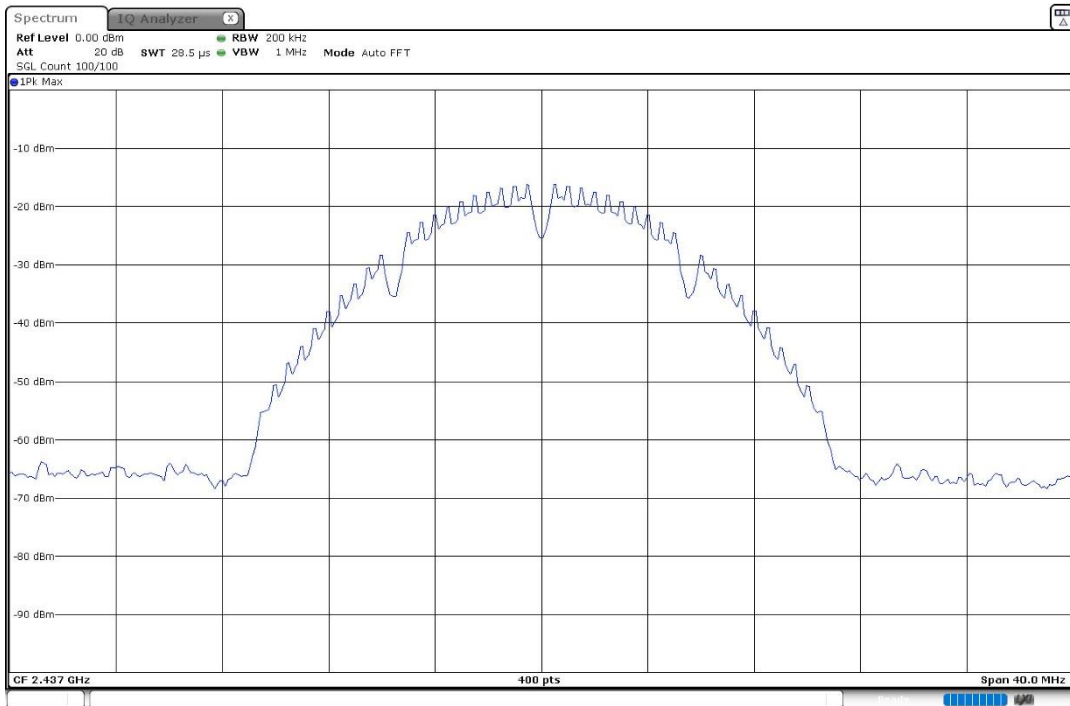
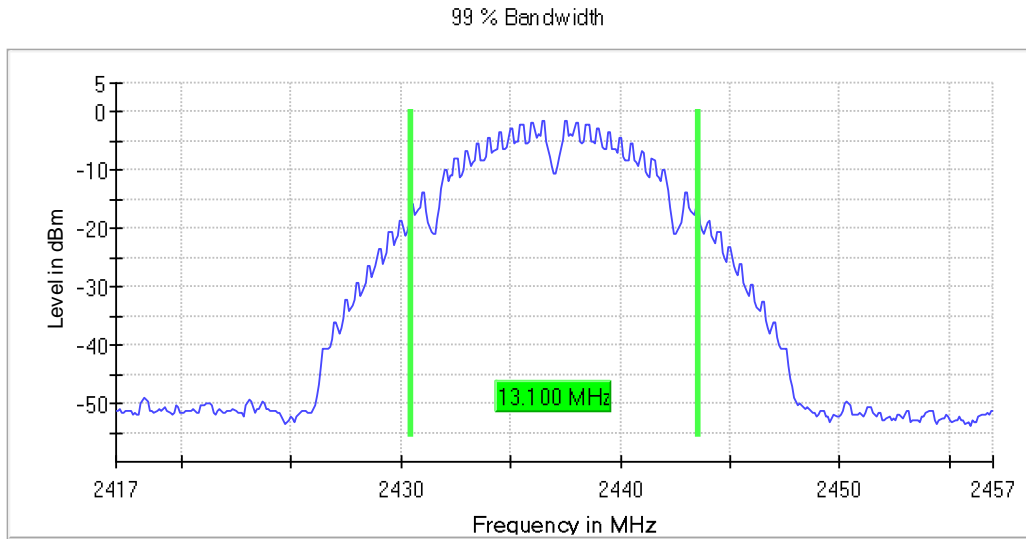
**Plots:**





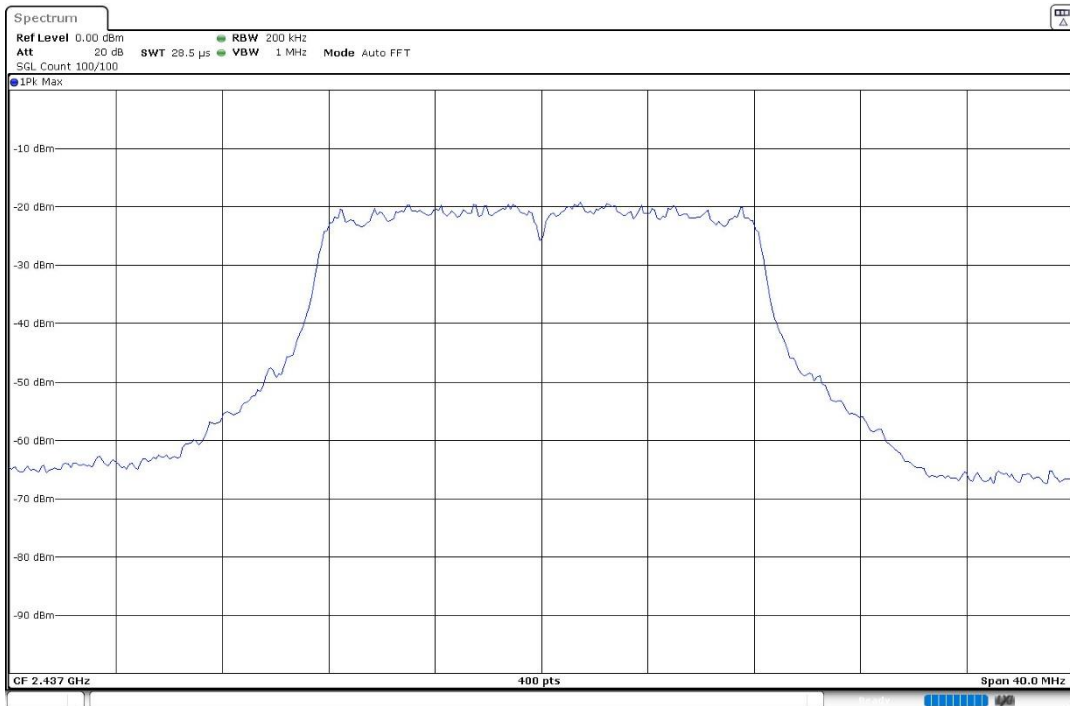
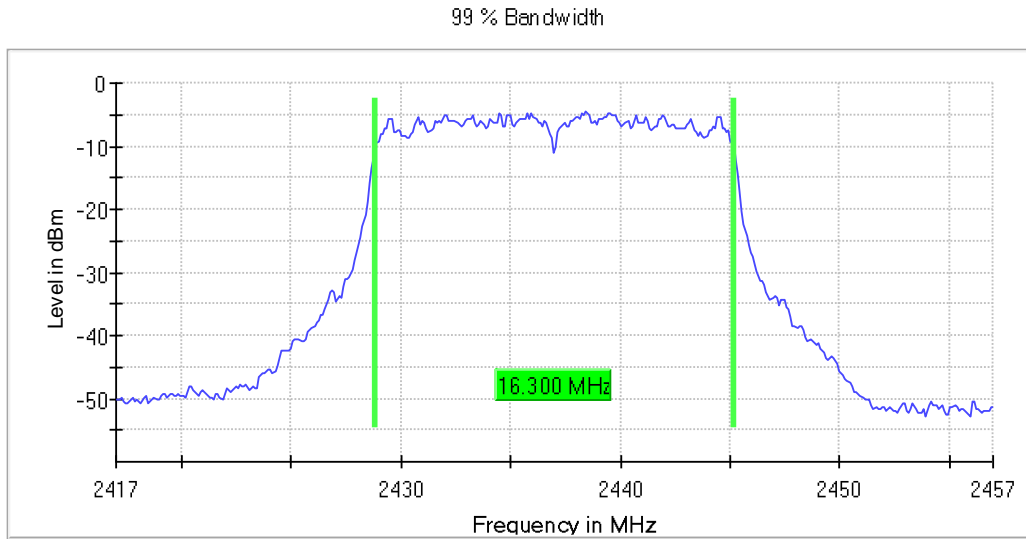
Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2437.00, Equipment Type: Digital Transmission system (DTS), Modulation: 802.11b (DSSS 1 Mbit/s), Number of Transmission Chains = 1

Plots:



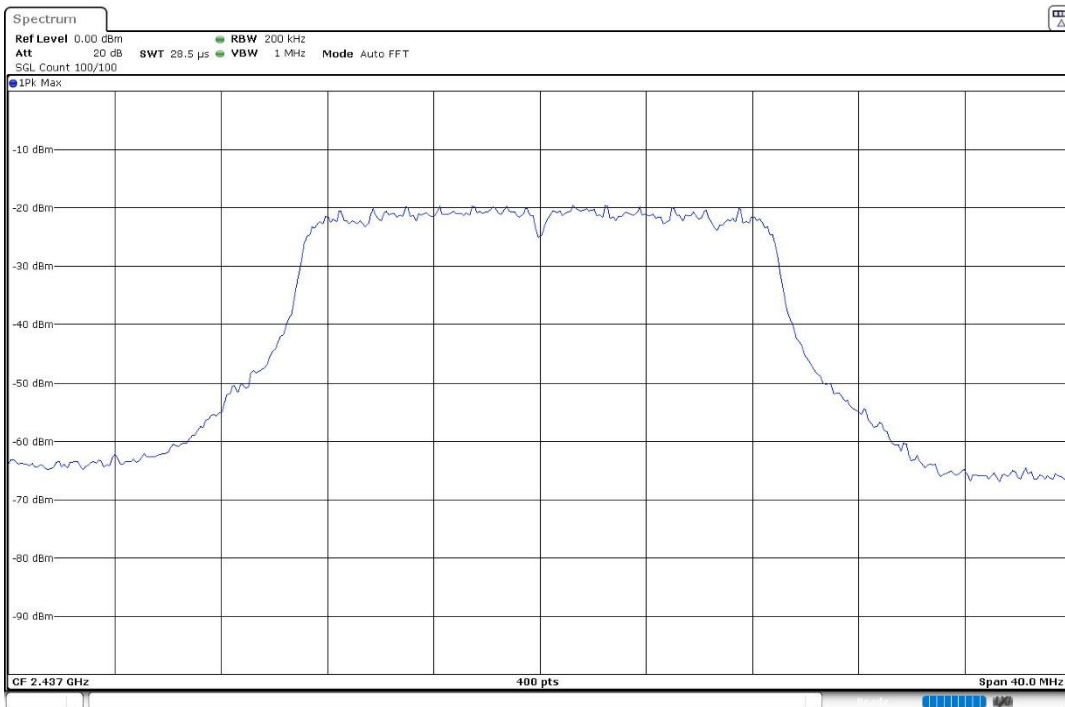
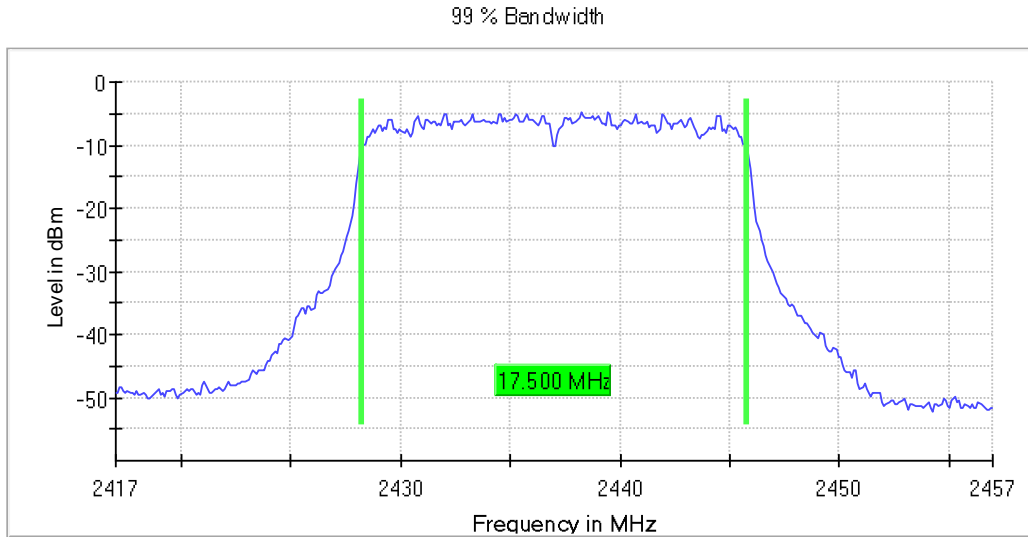
Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2437.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11g (OFDM 6 Mbit/s), Number of Transmission Chains = 1

Plots:



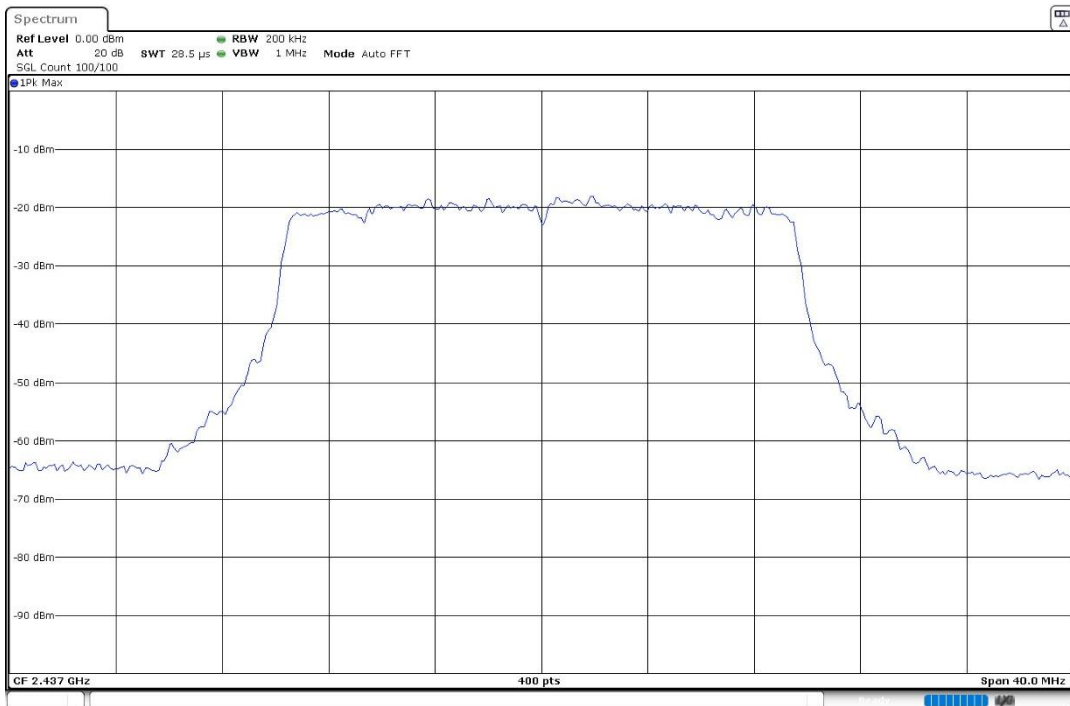
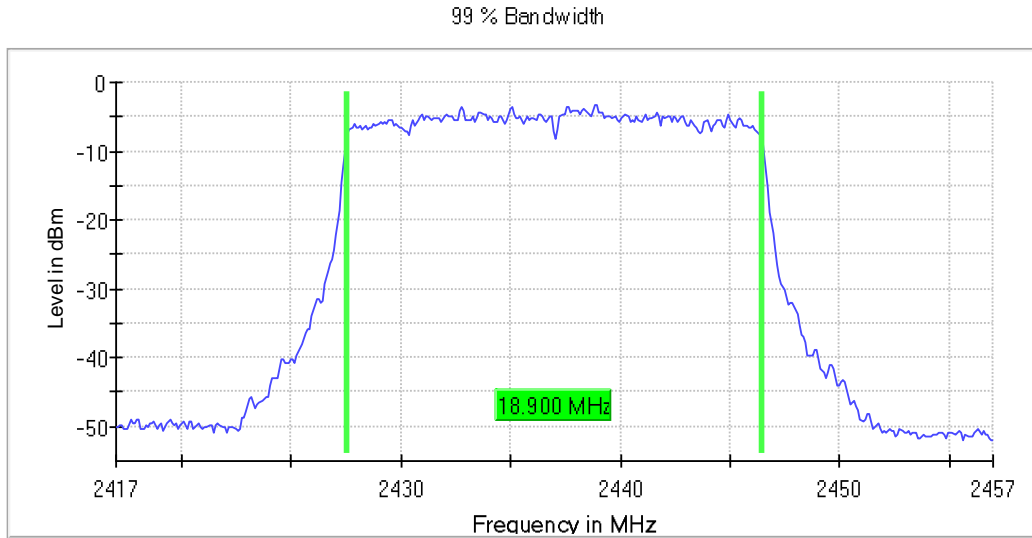
Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2437.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Number of Transmission Chains = 1

Plots:



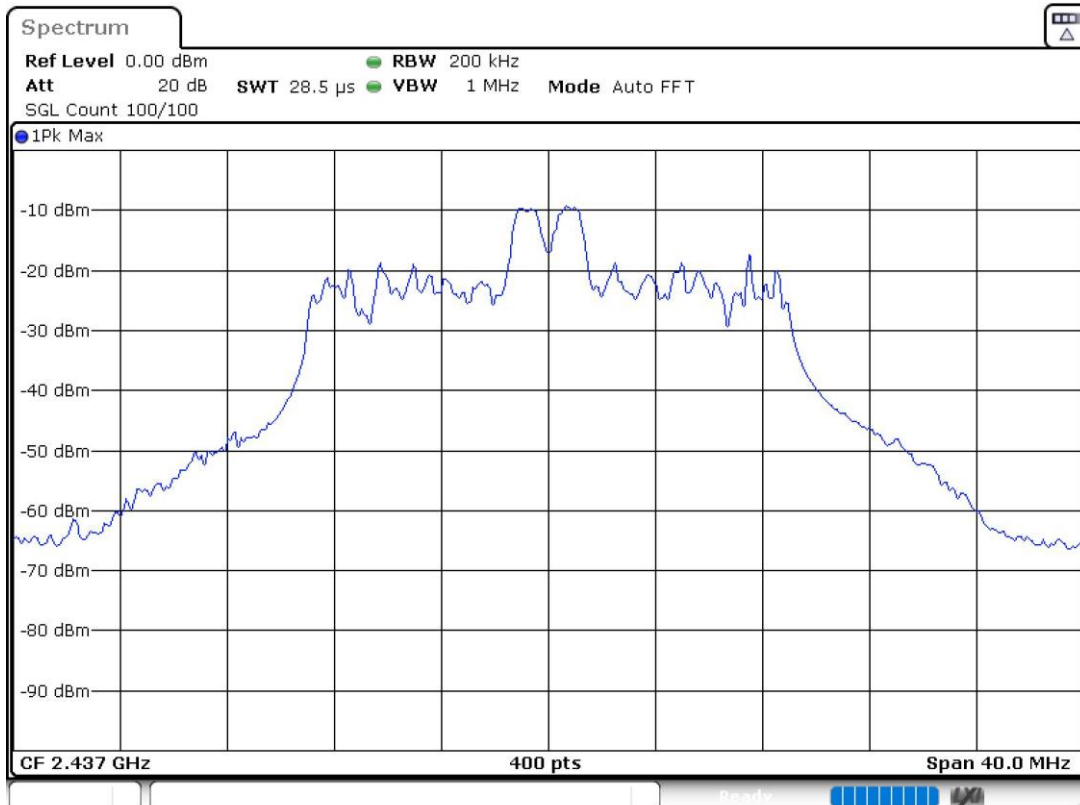
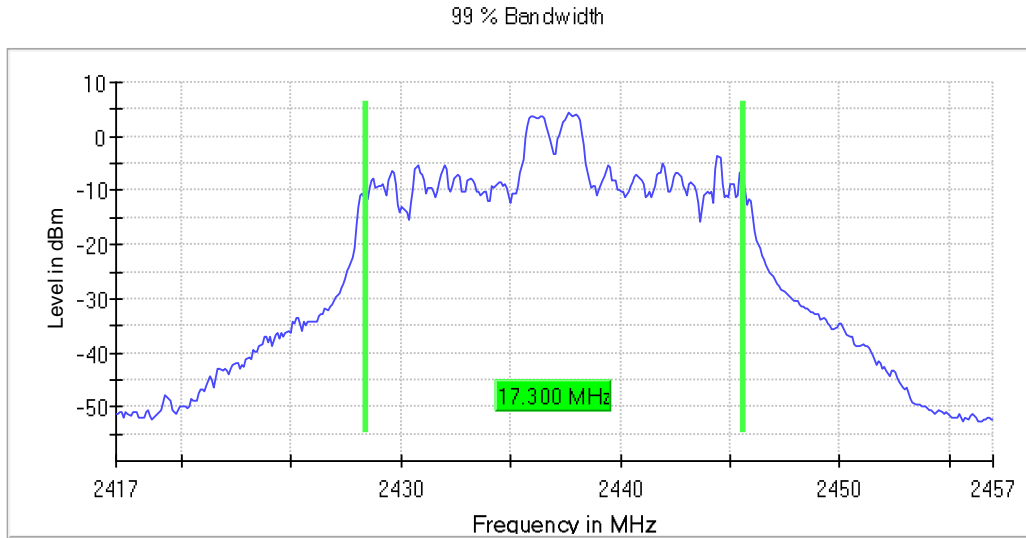
**Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2437.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11ax20 HE20 SU Full-channel allocation (OFDM MCS0 index), Number of Transmission Chains = 1**

**Plots:**



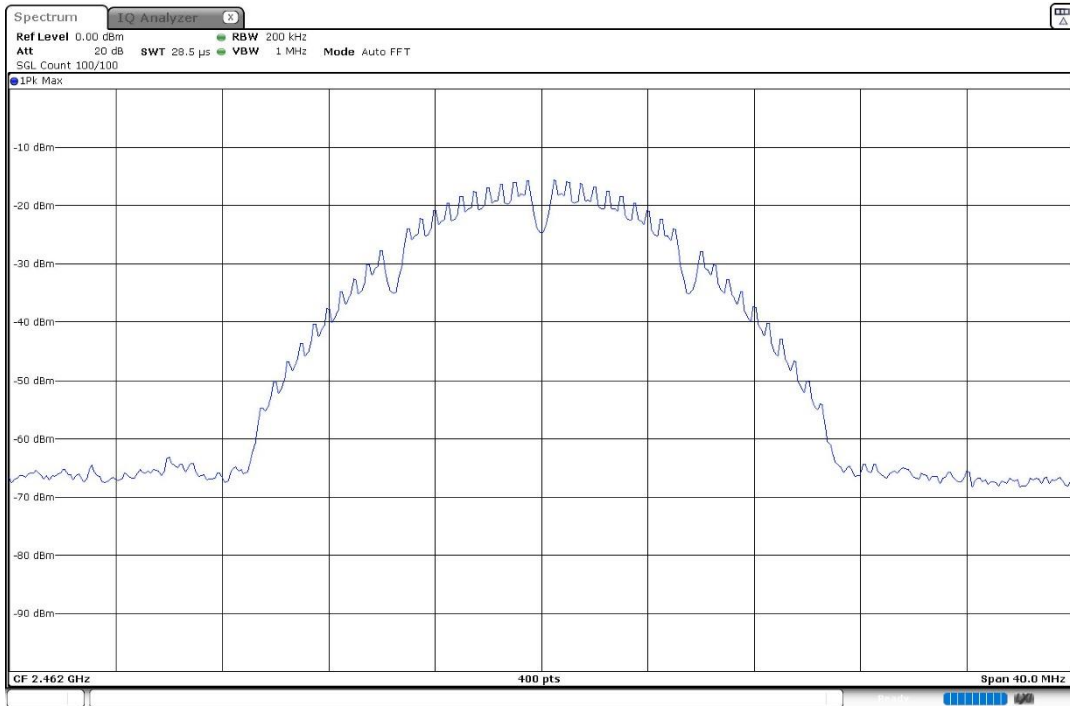
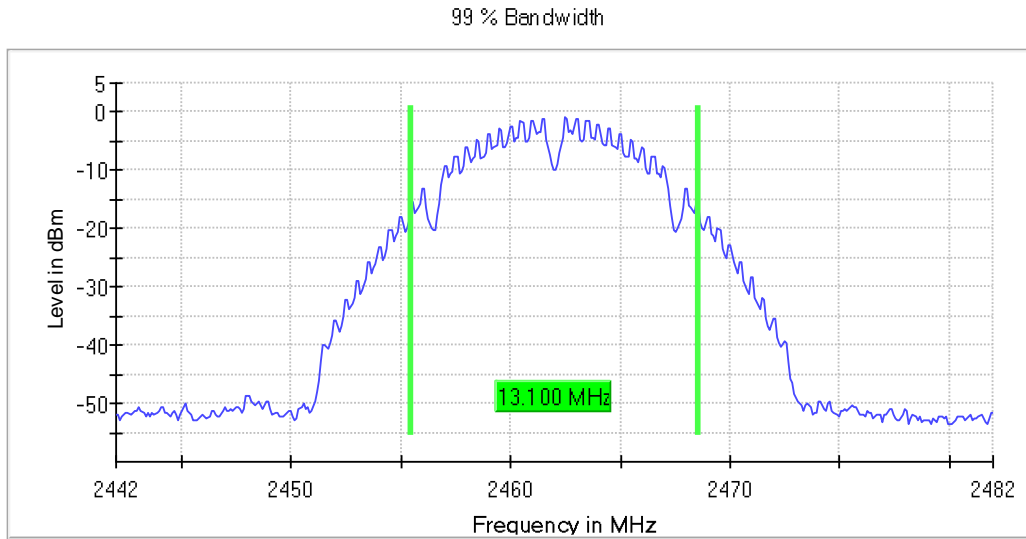
**Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2437.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11ax20 HE20 SU RU Subcarrier allocation (OFDMA MCS0 index), Number of Transmission Chains = 1**

**Plots:**



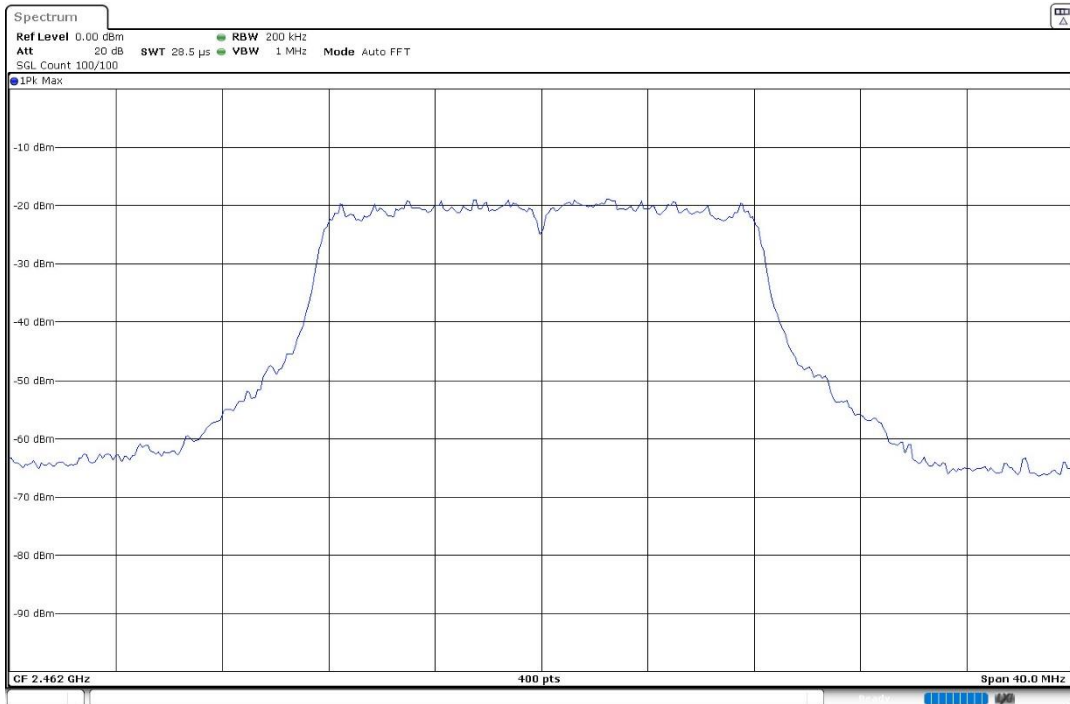
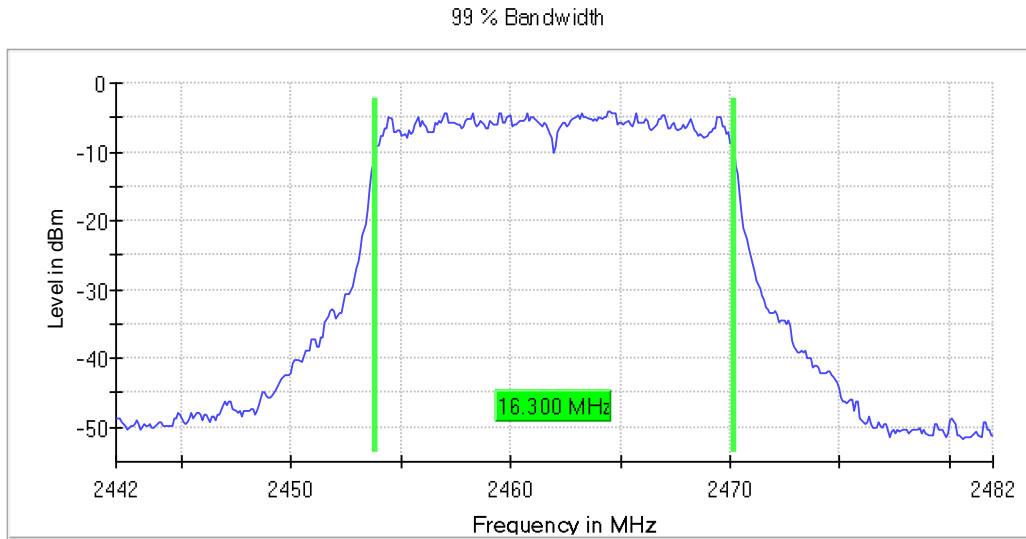
Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2462.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11b (DSSS 1 Mbit/s), Number of Transmission Chains = 1

Plots:



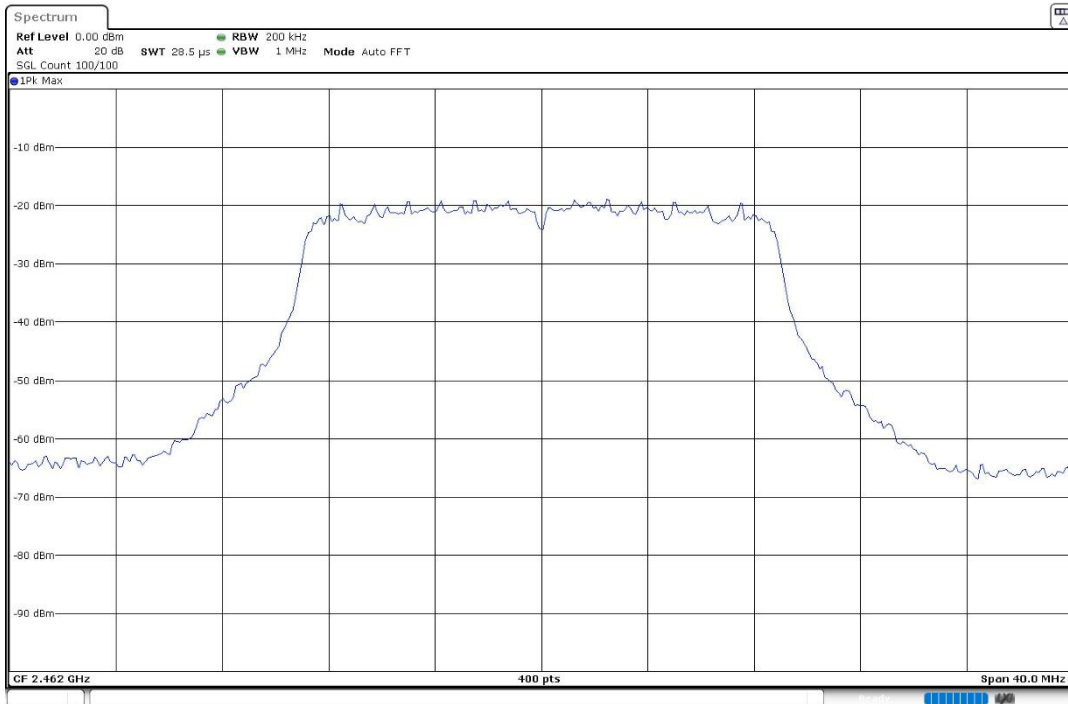
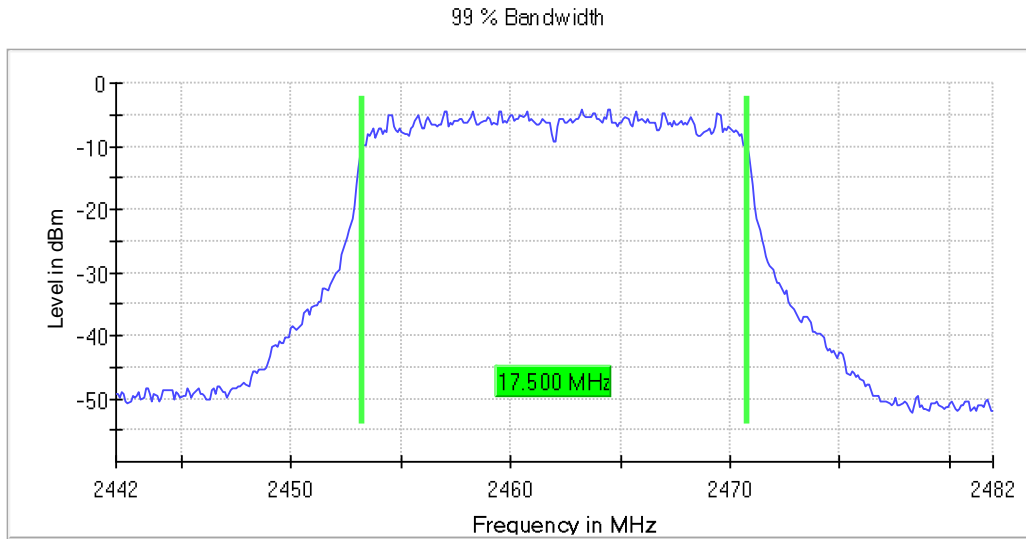
Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2462.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11g (OFDM 6 Mbit/s), Number of Transmission Chains = 1

Plots:



Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2462.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Number of Transmission Chains = 1

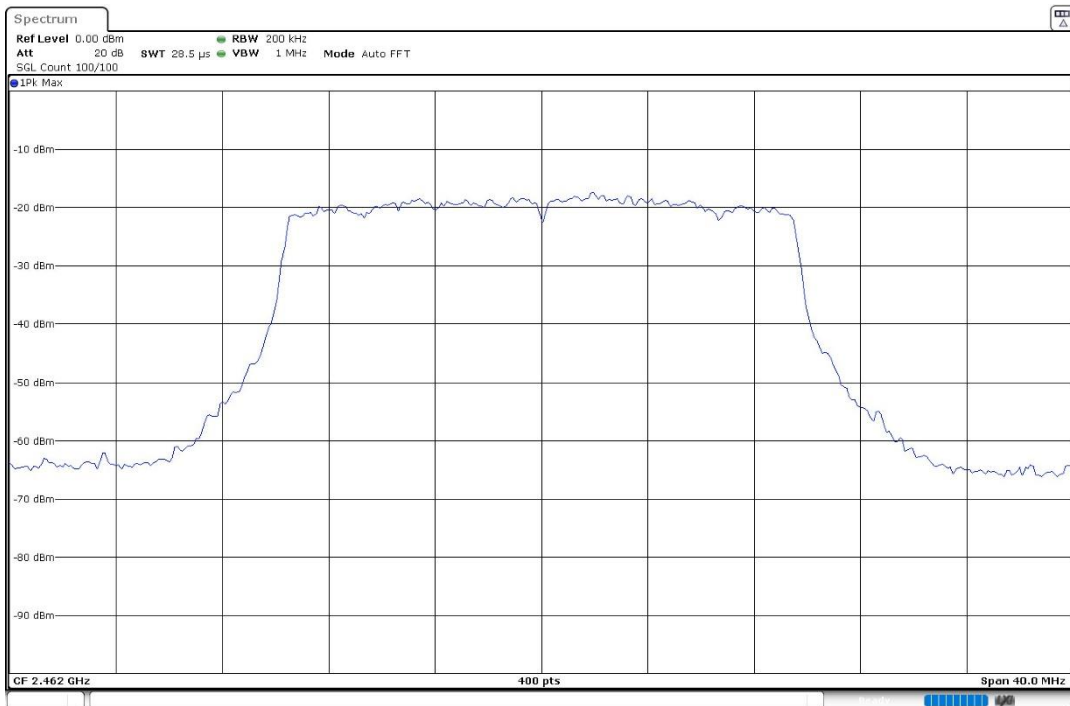
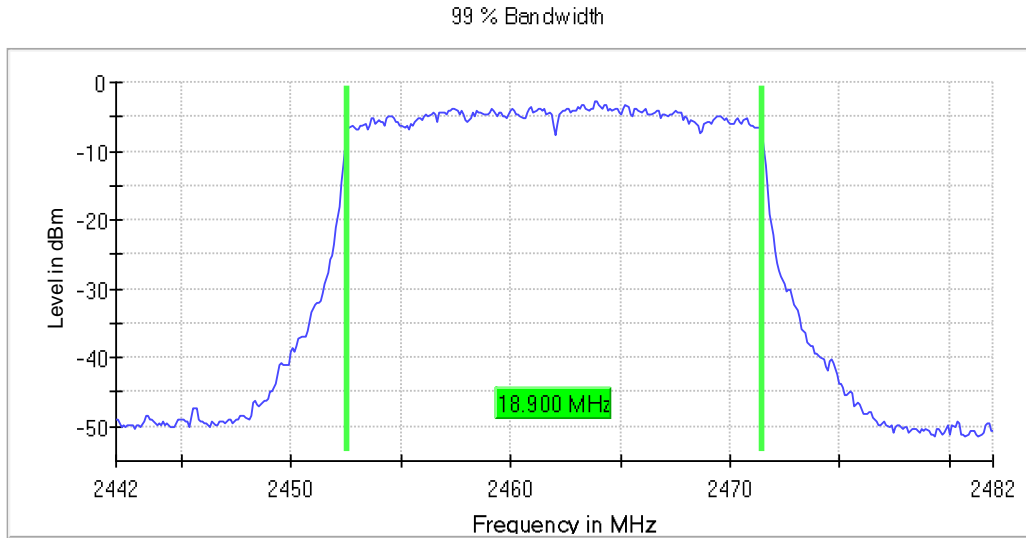
Plots:





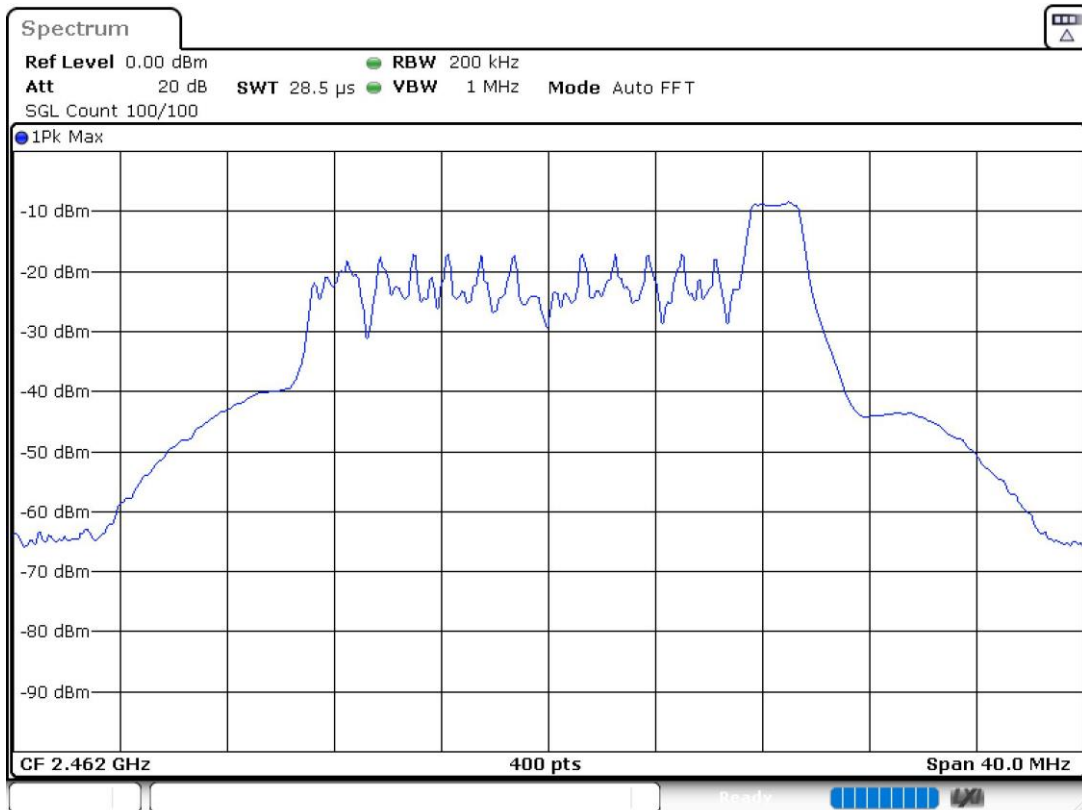
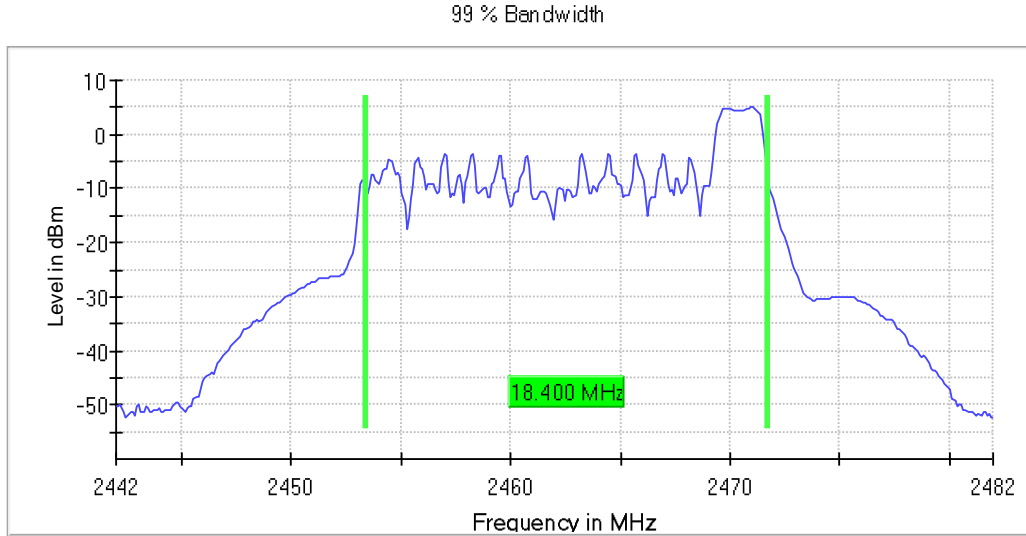
**Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2462.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11ax20 HE20 SU Full-channel allocation (OFDM MCS0 index), Number of Transmission Chains = 1**

**Plots:**



**Operation Band (MHz) = [2400, 2483.5], Frequency (MHz) = 2462.00, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11ax20 HE20 RU Subcarrier allocation (OFDMA MCS0 index), Number of Transmission Chains = 1**

**Plots:**



## FCC 15.247 (a)(2) 6 dB Bandwidth

### Limits

The minimum 6 dB bandwidth shall be at least 500 kHz.

### Results

Modulation: 802.11b (DSSS 1 Mbit/s)

Freq (MHz)	6dB bandwidth (MHz)
2412.00	7.550
2437.00	7.250
2462.00	8.150

Modulation: 802.11g (OFDM 6 Mbit/s)

Freq (MHz)	6dB bandwidth (MHz)
2412.00	16.350
2437.00	16.400
2462.00	16.350

Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s)

Freq (MHz)	6dB bandwidth (MHz)
2412.00	17.350
2437.00	17.600
2462.00	17.650

Modulation: 802.11ax20 HE20 (OFDM MCS0 index) – SU Full-channel allocation

Freq (MHz)	6dB bandwidth (MHz)
2412.00	18.900
2437.00	19.000
2462.00	18.850

Modulation: 802.11ax20 HE20 (OFDMA MCS0 index) – RU Subcarrier allocation

Freq (MHz)	6dB bandwidth (MHz)
2412.00	2.150
2437.00	2.700
2462.00	2.150

**Verdict**

Pass