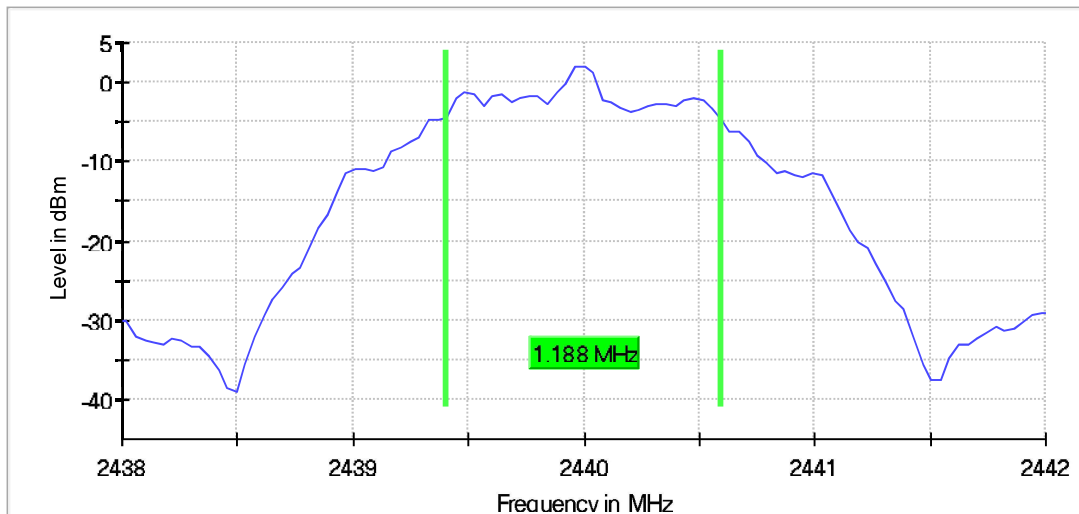


DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2440.000000	1.188118	0.500000	---	2439.405941	2440.594059

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2440.000000	2.1	PASS

6 dB Bandwidth





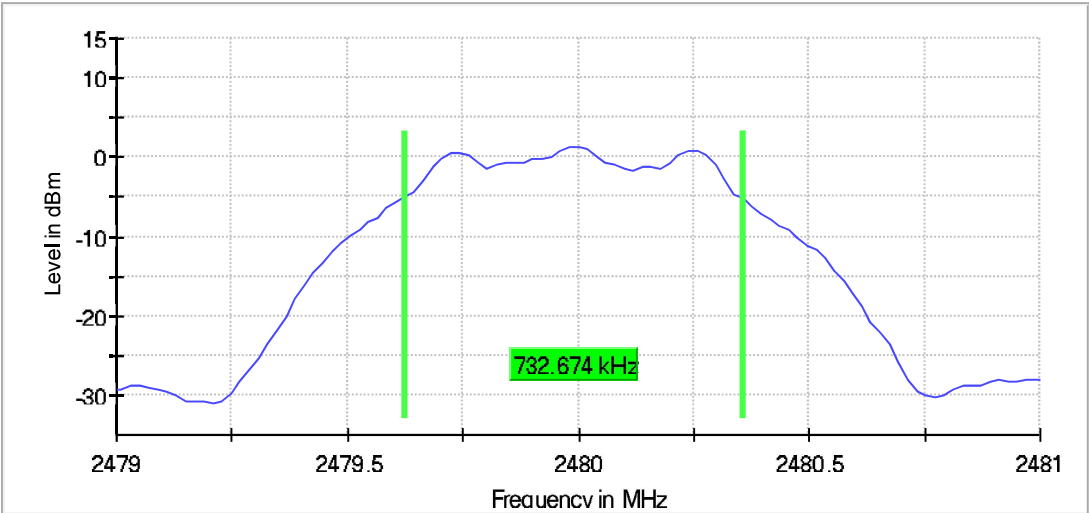
Channel 2480 MHz:

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.732674	0.500000	---	2479.623762	2480.356436

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	1.4	PASS

6 dB Bandwidth

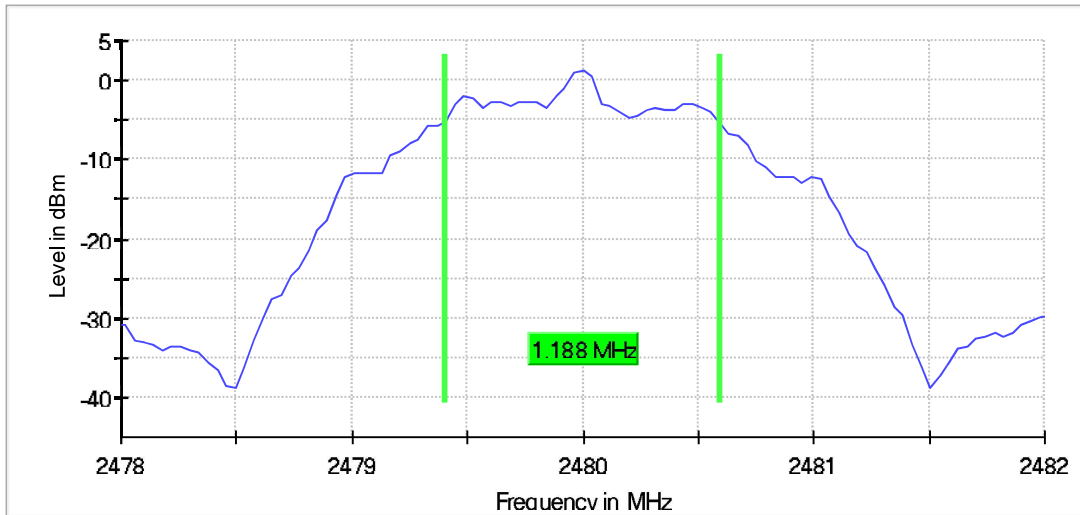


DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.188118	0.500000	---	2479.405941	2480.594059

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	1.2	PASS

6 dB Bandwidth



3.6 47 CFR § 15.247 (b) (3) – Maximum peak output power

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

3.6.1 Test procedure

According ANSI C63.10-2013:

Measurement using an RF average power meter. The procedure for this method is as follows:

- a) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:
 - 1) The EUT is configured to transmit continuously, or to transmit with a constant duty cycle.
 - 2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
 - 3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
- b) If the transmitter does not transmit continuously, measure the duty cycle D of the transmitter output signal as described in 12.2.
- c) Measure the average power of the transmitter. This measurement is an average over both the ON and OFF periods of the transmitter.
- d) Adjust the measurement in dBm by adding $[10 \log (1 / D)]$, where D is the duty cycle (e.g., $[10 \log (1 / 0.25)]$, if the duty cycle is 25%).

3.6.2 Test setup

For the test setup refer to chapter 1.4.

3.6.3 Test equipment

For the test setup refer to chapter 1.3.

3.6.4 Test results

47 CFR § 15.247 Requirement

DUT Frequency (MHz)	Bandwidth (MHz)	Conducted output power (dBm)	Limit Max (dBm)	Result
2402.000000	1	2.5	30.0	PASS
2440.000000	1	2.8	30.0	PASS
2480.000000	1	2.0	30.0	PASS
2402.000000	2	2.4	30.0	PASS
2440.000000	2	2.7	30.0	PASS
2480.000000	2	2.0	30.0	PASS



RSS 247 Requirement

DUT Frequency (MHz)	Bandwidth (MHz)	Conducted output power (dBm)	Limit Max (dBm)	Equivalent isotropically radiated power (e.i.r.p)	Limit Max (dBm)	Result
2402.000000	1	2.5	30.0	4.18	36.2	PASS
2440.000000	1	2.8	30.0	4.48	36.2	PASS
2480.000000	1	2.0	30.0	3.68	36.2	PASS
2402.000000	2	2.4	30.0	4.08	36.2	PASS
2440.000000	2	2.7	30.0	4.38	36.2	PASS
2480.000000	2	2.0	30.0	3.68	36.2	PASS



3.7 47 CFR § 15.247 (d) –100 kHz Bandwidth of Frequency Band Edge

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

3.7.1 Test procedure

According to ANSI C63.10-2013:

- a) Connect the EMI receiver or spectrum analyzer to the EUT using an appropriate RF cable connected to the EUT output. Configure the spectrum analyzer settings as described in step e) (be sure to enter all losses between the unlicensed wireless device output and the spectrum analyzer).
- b) Set the EUT to the lowest frequency channel (for the hopping on test, the hopping sequence shall include the lowest frequency channel).
- c) Set the EUT to operate at maximum output power and 100% duty cycle, or equivalent “normal mode of operation” as specified in 6.10.3.
- d) If using the radiated method, then use the applicable procedure(s) of 6.4, 6.5 6.6, and orient the EUT and measurement antenna positions to produce the highest emission level.
- e) Perform the test as follows:
 - 1) Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation.
 - 2) Reference level: As required to keep the signal from exceeding the maximum instrument input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.5.2.
 - 3) Attenuation: Auto (at least 10 dB preferred).
 - 4) Sweep time: Coupled.
 - 5) Resolution bandwidth: 100 kHz.
 - 6) Video bandwidth: 300 kHz.
 - 7) Detector: Peak.
 - 8) Trace: Max hold.
- f) Allow the trace to stabilize. For the test with the hopping function turned ON, this can take several minutes to achieve
- g) Set the marker on the emission at the band edge, or on the highest modulation product outside of the band, if this level is greater than that at the band edge. Enable the marker-delta function, and then use the marker-to-peak function to move the marker to the peak of the in-band emission.
- h) Repeat step c) through step e) for every applicable modulation.
- i) Set the EUT to the highest frequency channel (for the hopping on test, the hopping sequence shall include the highest frequency channel) and repeat step c) through step d).
- j) The band-edge measurement shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

3.7.2 Test setup

For the test setup refer to chapter 1.4.

3.7.3 Test equipment

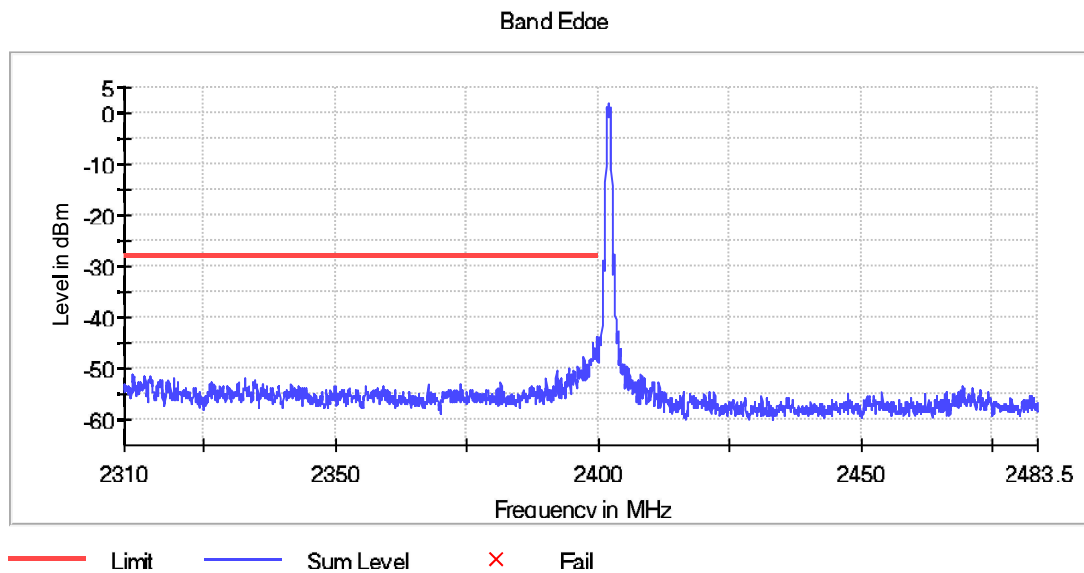
For the test setup refer to chapter 1.3.

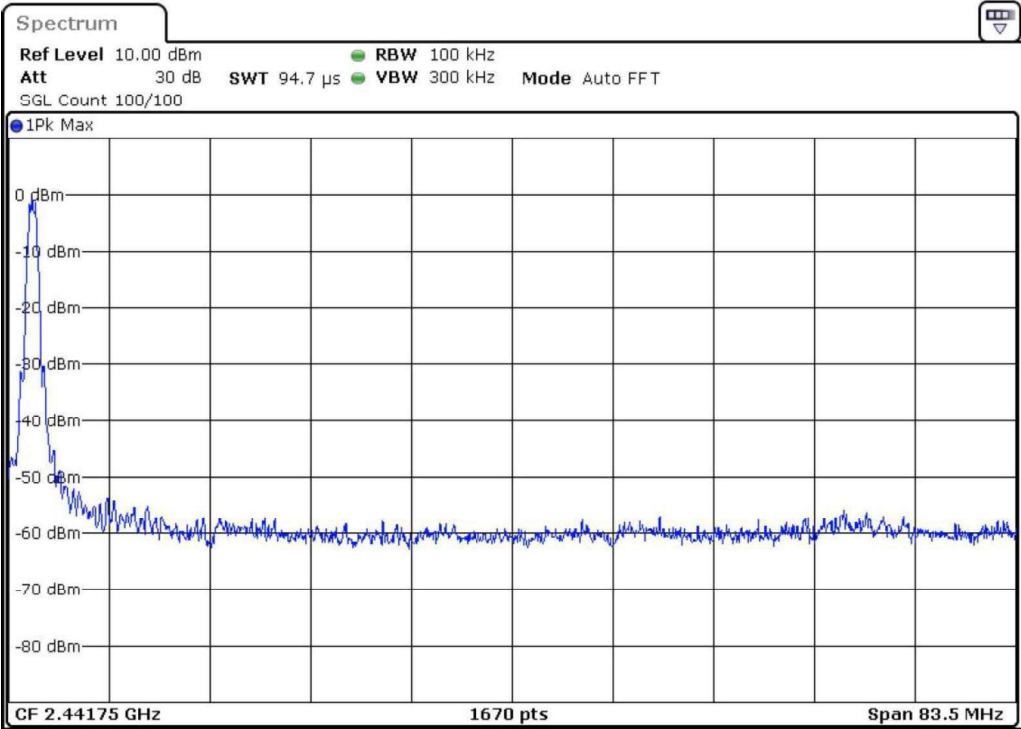
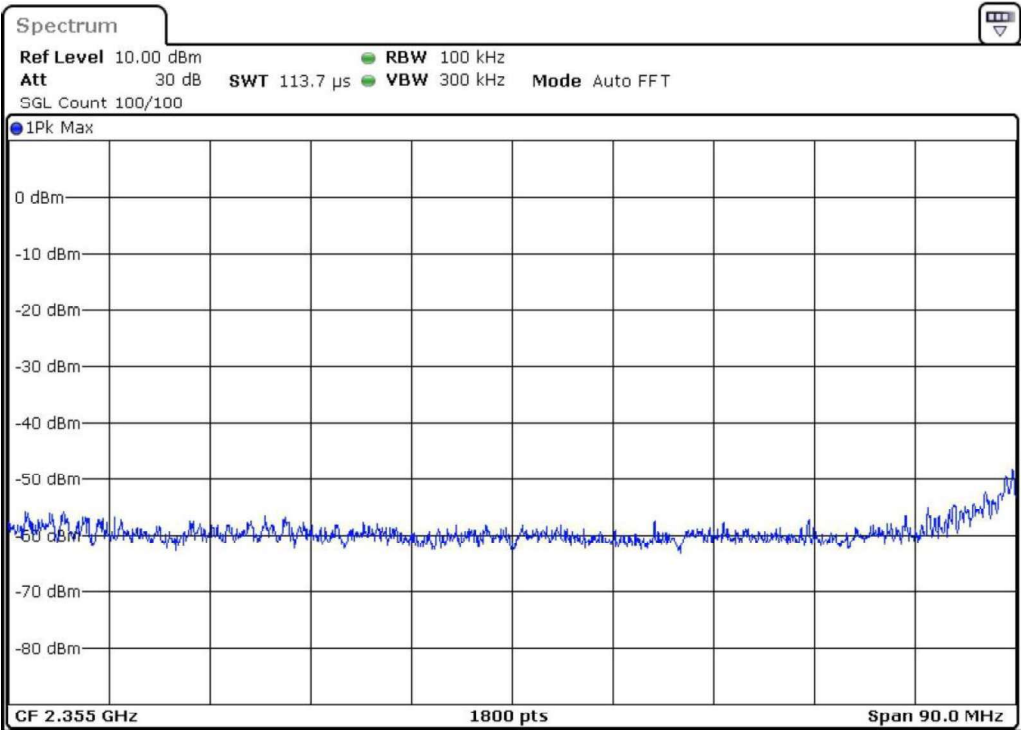
3.7.4 Test results – Conducted measurement of band edges

DUT Frequency (MHz)	Bandwidth (MHz)	Result
2402.000000	1	PASS

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2399.675000	-43.8	15.6	-28.2	PASS
2399.725000	-43.9	15.7	-28.2	PASS
2399.625000	-44.3	16.1	-28.2	PASS
2399.775000	-44.8	16.6	-28.2	PASS
2399.075000	-45.1	16.9	-28.2	PASS
2399.025000	-45.2	17.0	-28.2	PASS
2399.125000	-45.2	17.0	-28.2	PASS
2399.825000	-45.5	17.3	-28.2	PASS
2399.175000	-45.6	17.4	-28.2	PASS
2398.975000	-45.7	17.5	-28.2	PASS
2399.575000	-45.9	17.7	-28.2	PASS
2399.225000	-46.2	18.0	-28.2	PASS
2399.875000	-46.5	18.3	-28.2	PASS
2399.525000	-46.6	18.4	-28.2	PASS
2399.475000	-46.6	18.4	-28.2	PASS



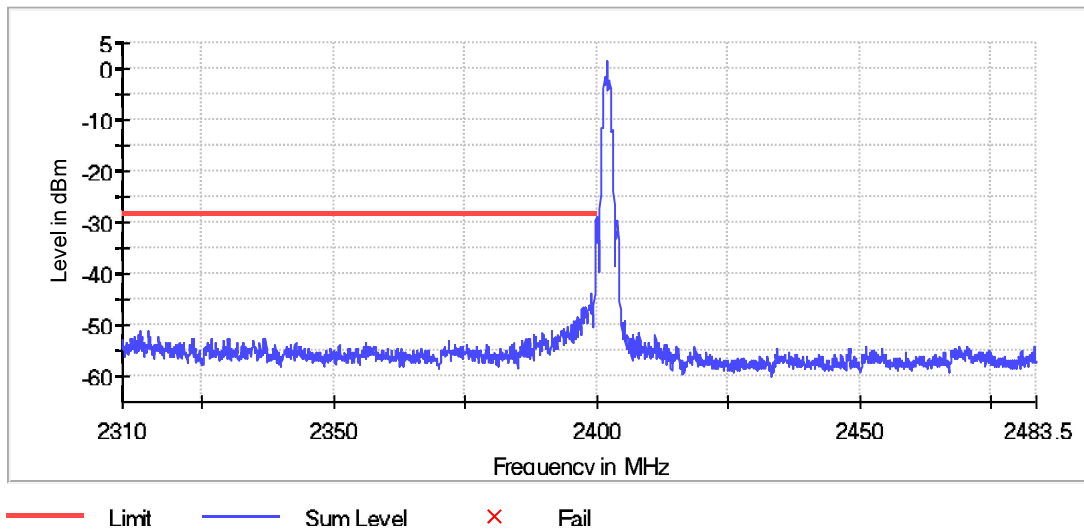


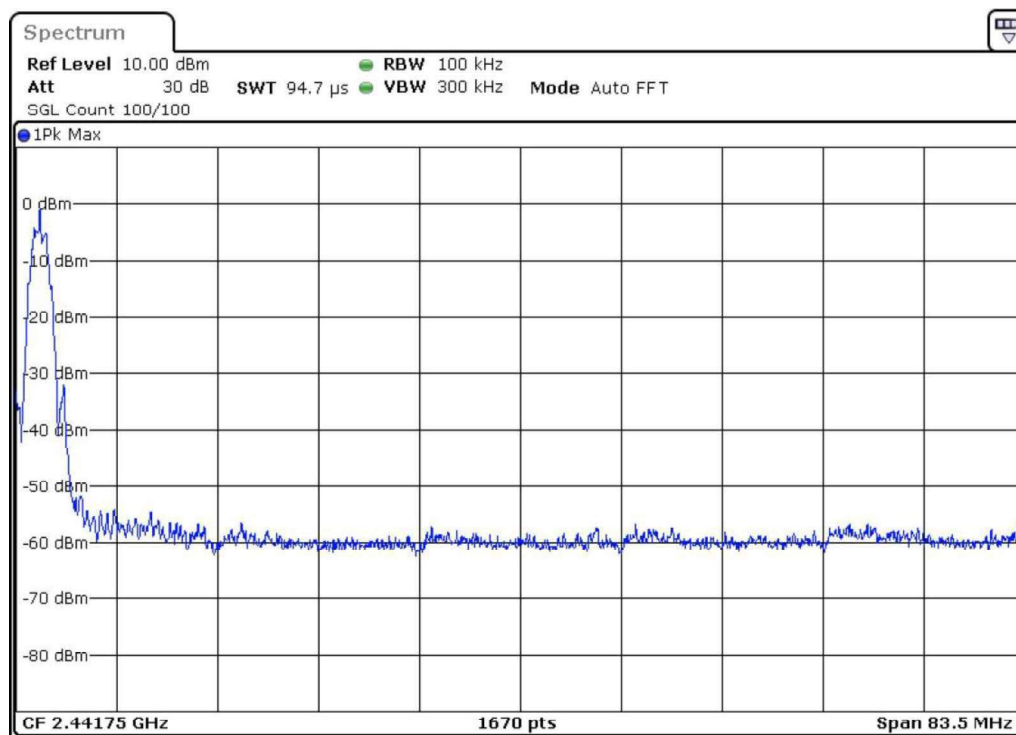
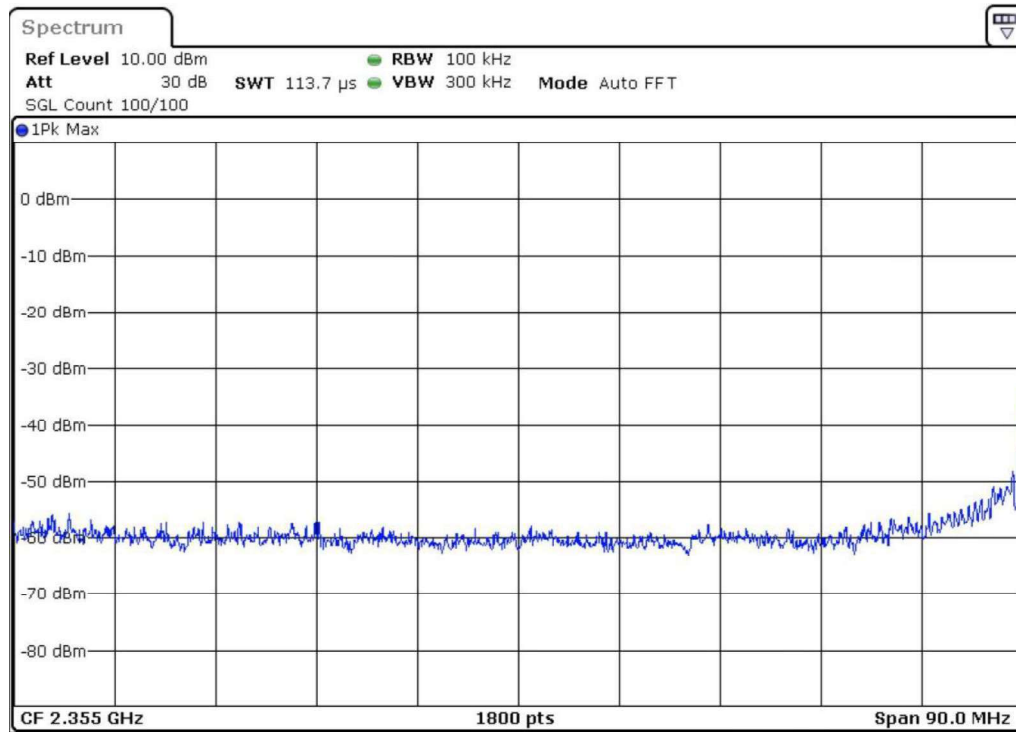
DUT Frequency (MHz)	Bandwidth (MHz)	Result
2402.000000	2	PASS

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2399.975000	-28.7	0.3	-28.4	PASS
2399.925000	-29.7	1.3	-28.4	PASS
2399.875000	-32.3	3.8	-28.4	PASS
2399.825000	-35.6	7.2	-28.4	PASS
2399.775000	-36.5	8.0	-28.4	PASS
2399.725000	-38.3	9.9	-28.4	PASS
2399.675000	-40.0	11.6	-28.4	PASS
2399.625000	-41.7	13.3	-28.4	PASS
2399.075000	-43.7	15.3	-28.4	PASS
2399.025000	-43.8	15.3	-28.4	PASS
2399.575000	-43.9	15.4	-28.4	PASS
2399.125000	-44.4	16.0	-28.4	PASS
2398.975000	-44.9	16.5	-28.4	PASS
2399.175000	-45.5	17.0	-28.4	PASS
2398.925000	-45.9	17.5	-28.4	PASS

Band Edge



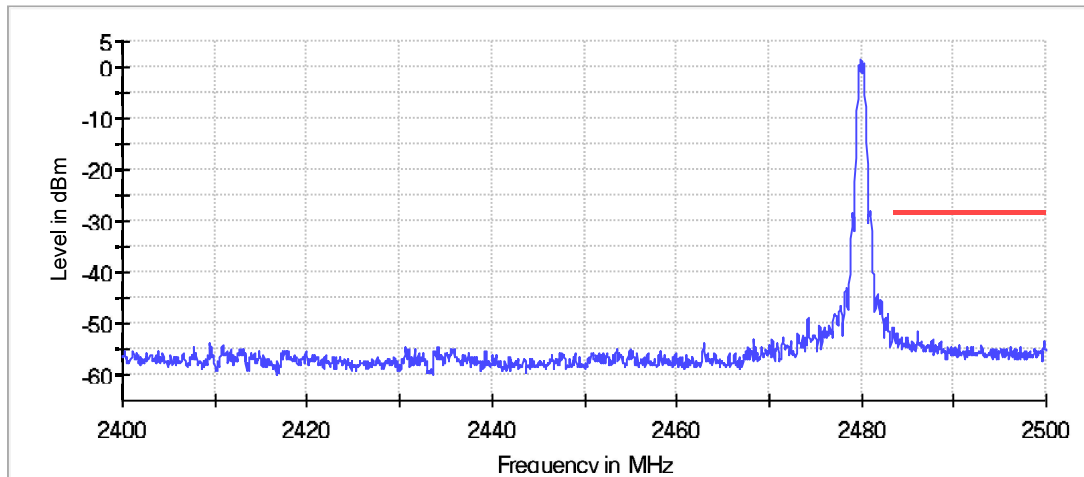


DUT Frequency (MHz)	Bandwidth (MHz)	Result
2480.000000	1	PASS

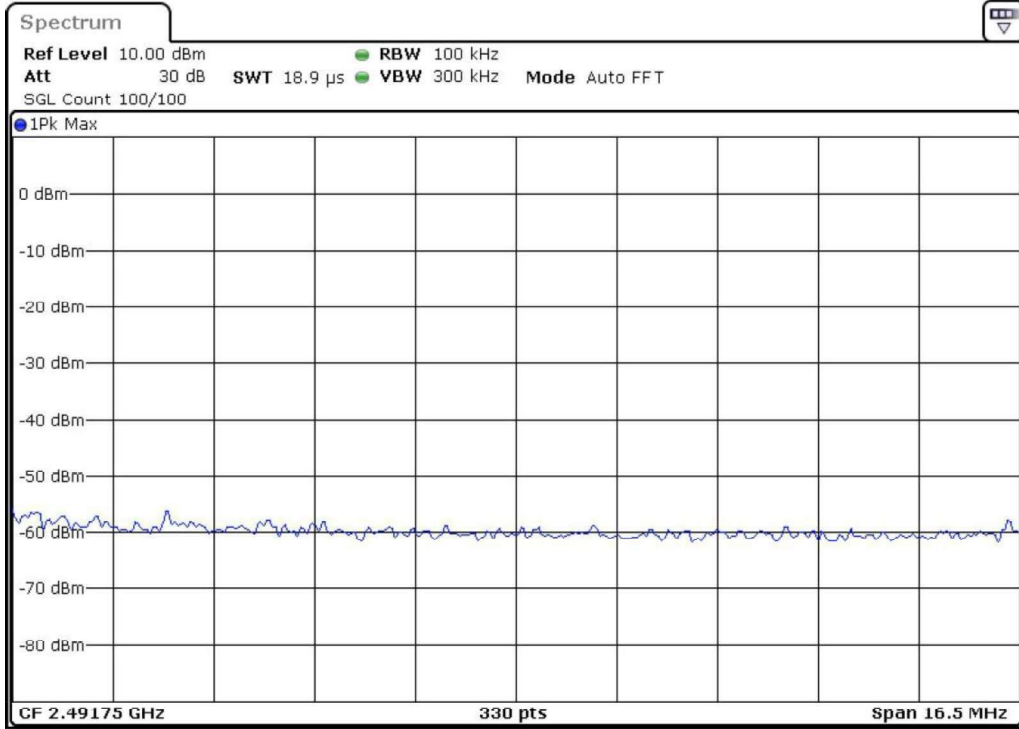
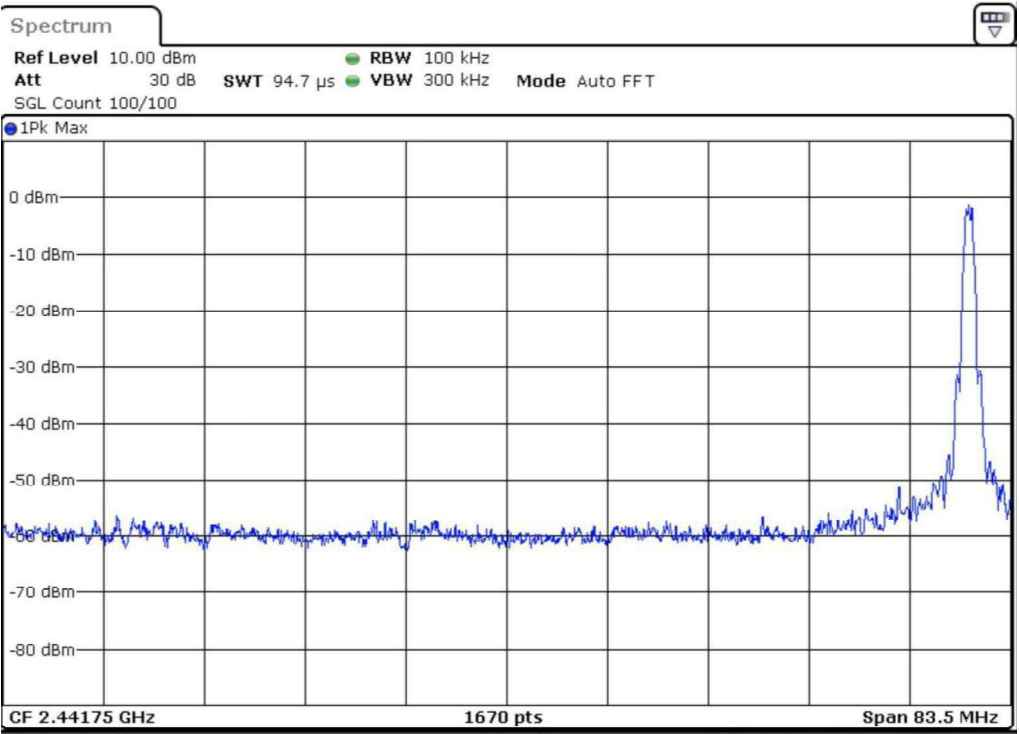
Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2483.525000	-51.5	22.9	-28.6	PASS
2486.025000	-51.7	23.1	-28.6	PASS
2486.075000	-51.7	23.1	-28.6	PASS
2483.825000	-51.9	23.3	-28.6	PASS
2483.925000	-52.0	23.5	-28.6	PASS
2483.875000	-52.1	23.5	-28.6	PASS
2483.975000	-52.2	23.6	-28.6	PASS
2483.725000	-52.5	23.9	-28.6	PASS
2484.925000	-52.6	24.0	-28.6	PASS
2484.875000	-52.6	24.0	-28.6	PASS
2484.375000	-52.6	24.0	-28.6	PASS
2483.675000	-52.7	24.2	-28.6	PASS
2484.325000	-52.7	24.2	-28.6	PASS
2483.575000	-52.8	24.2	-28.6	PASS
2483.775000	-52.9	24.3	-28.6	PASS

Band Edge



— Limit — Sum Level × Fail

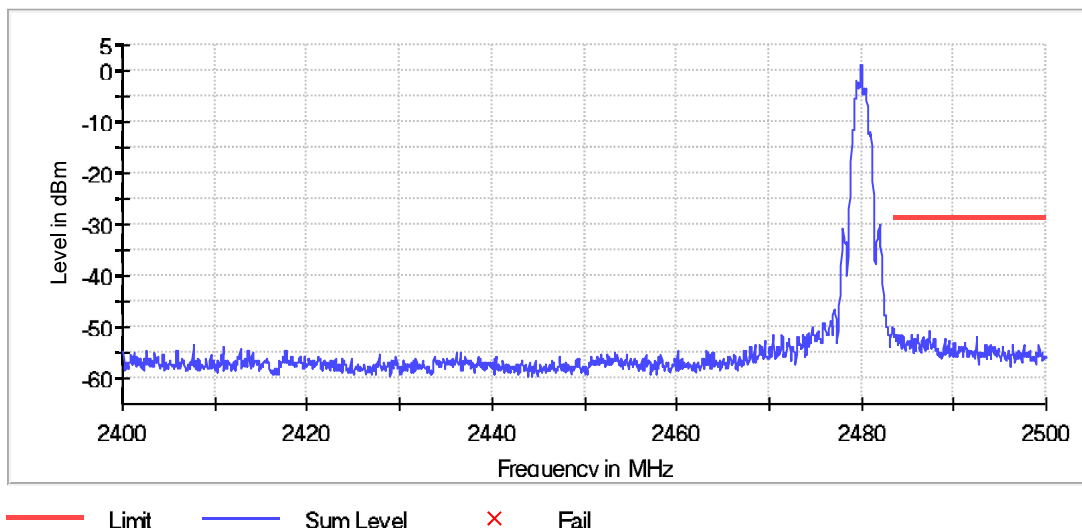


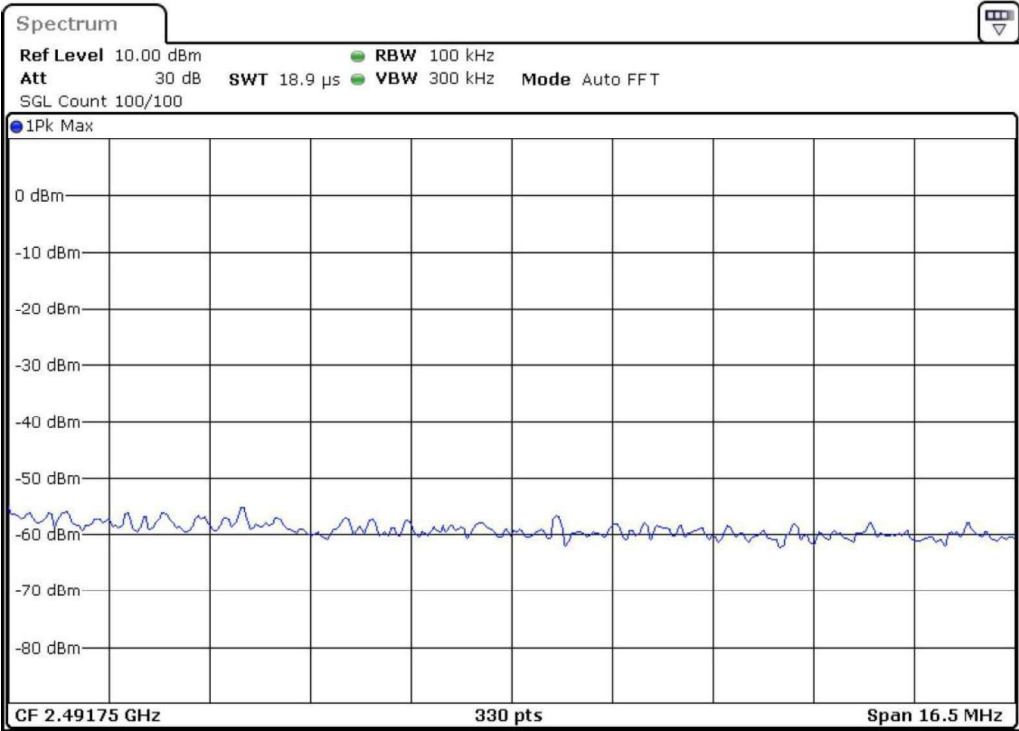
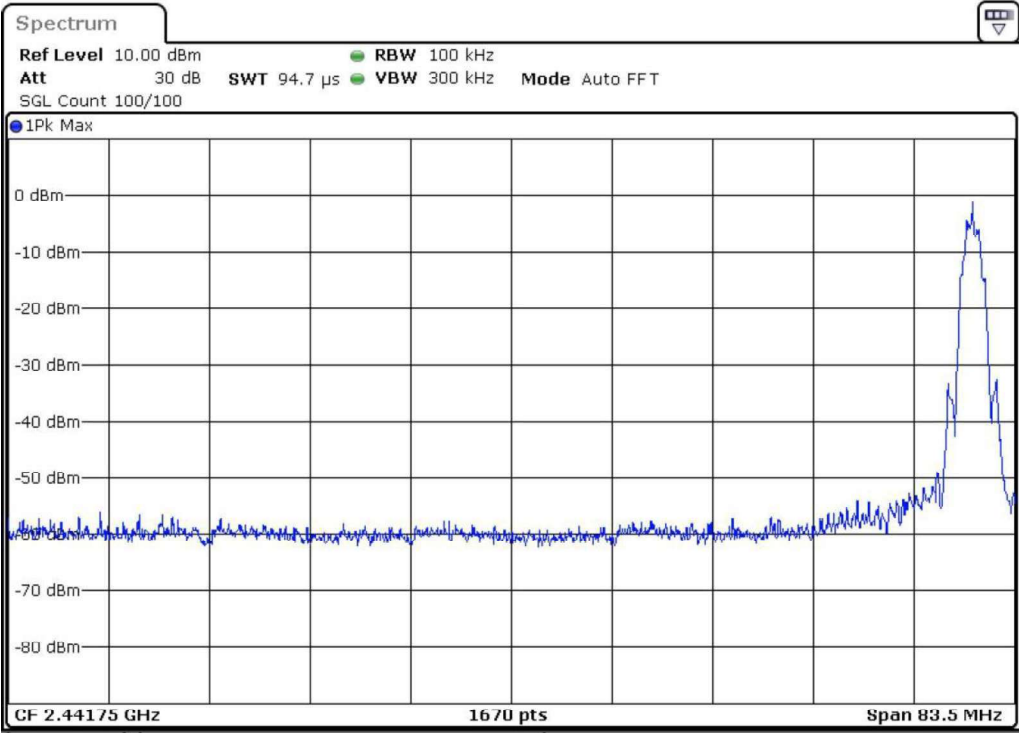
DUT Frequency (MHz)	Bandwidth (MHz)	Result
2480.000000	2	PASS

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2483.525000	-50.3	21.6	-28.7	PASS
2487.375000	-50.6	21.9	-28.7	PASS
2487.325000	-50.7	22.0	-28.7	PASS
2484.475000	-51.4	22.7	-28.7	PASS
2484.175000	-51.5	22.8	-28.7	PASS
2485.475000	-51.5	22.8	-28.7	PASS
2484.425000	-51.5	22.8	-28.7	PASS
2483.875000	-51.5	22.8	-28.7	PASS
2486.075000	-51.5	22.9	-28.7	PASS
2486.025000	-51.6	22.9	-28.7	PASS
2484.375000	-51.6	23.0	-28.7	PASS
2483.575000	-51.7	23.0	-28.7	PASS
2483.625000	-51.7	23.0	-28.7	PASS
2483.825000	-51.7	23.0	-28.7	PASS
2484.225000	-51.7	23.0	-28.7	PASS

Band Edge





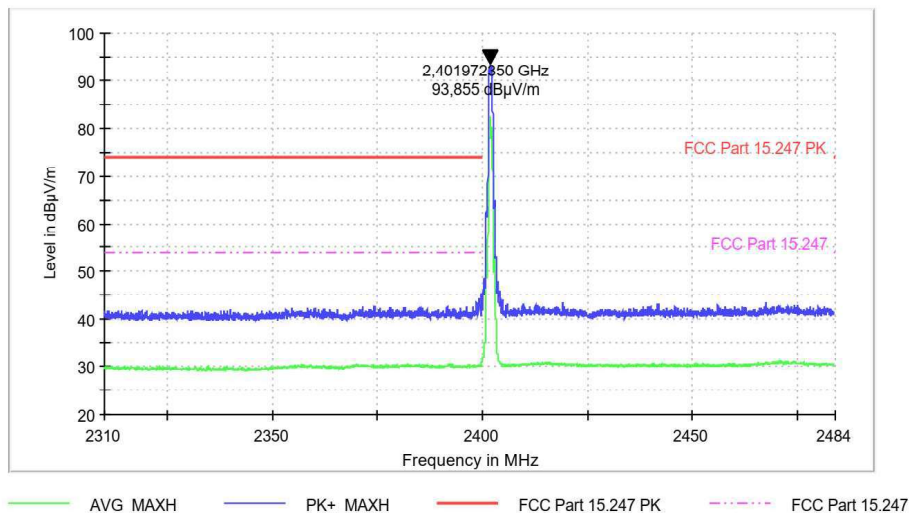
3.7.5 Test results - Radiated measurements of band edges:

DUT Frequency (MHz)	Result
2402.000000	PASS

EUT Information

EUT: Festool CT MIDI I AC
Operating mode: TX, 2402 MHz
Antenna polarization: Horizontal

FCC_2,4GHz LOWER BAND EDGE



EUT Information

EUT: Festool CT MIDI I AC
Operating mode: TX, 2402 MHz
Antenna polarization: Vertical

FCC_2,4GHz LOWER BAND EDGE

