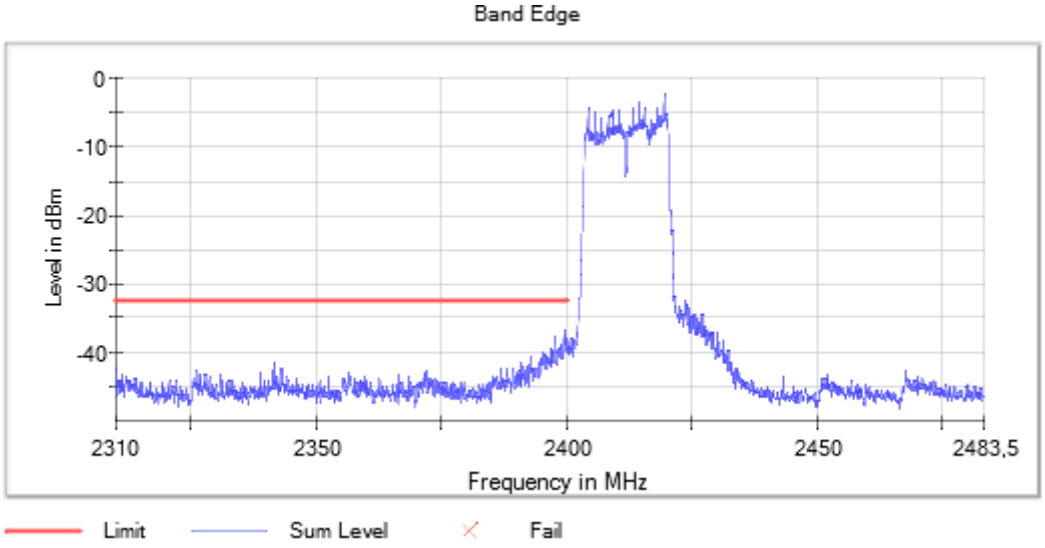
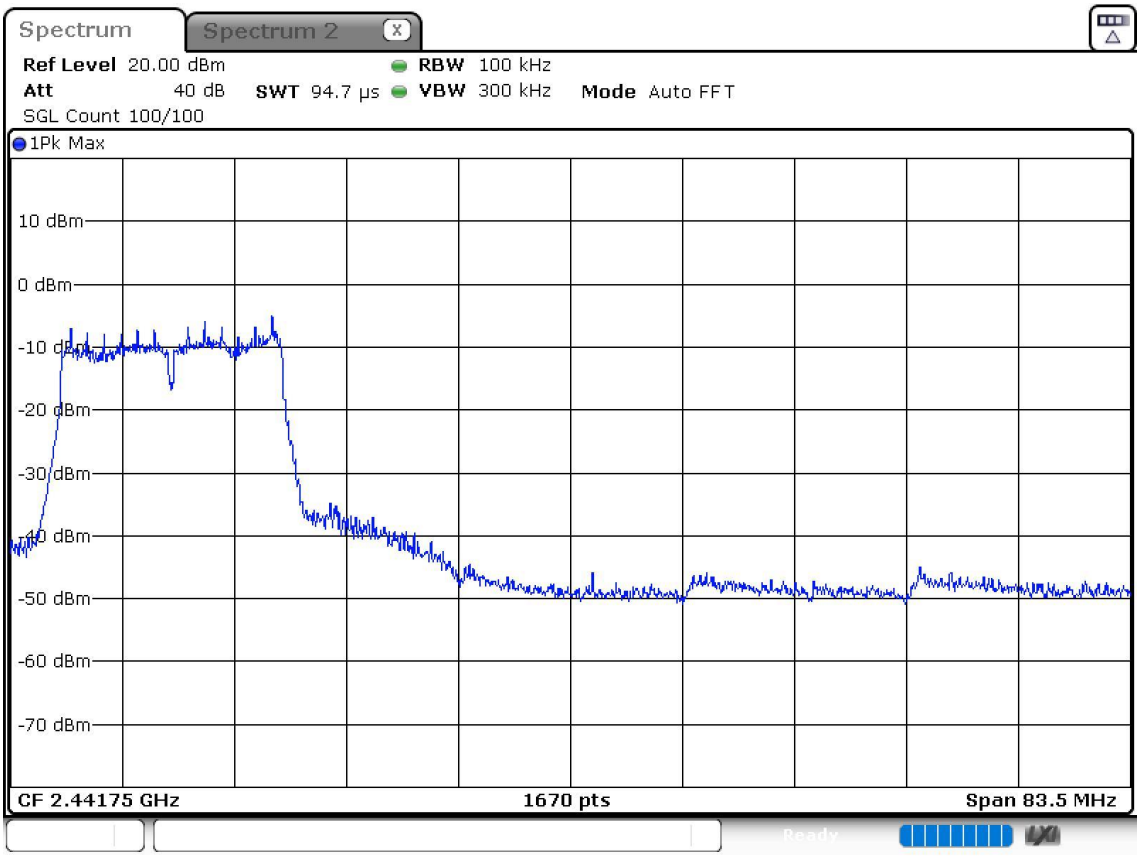
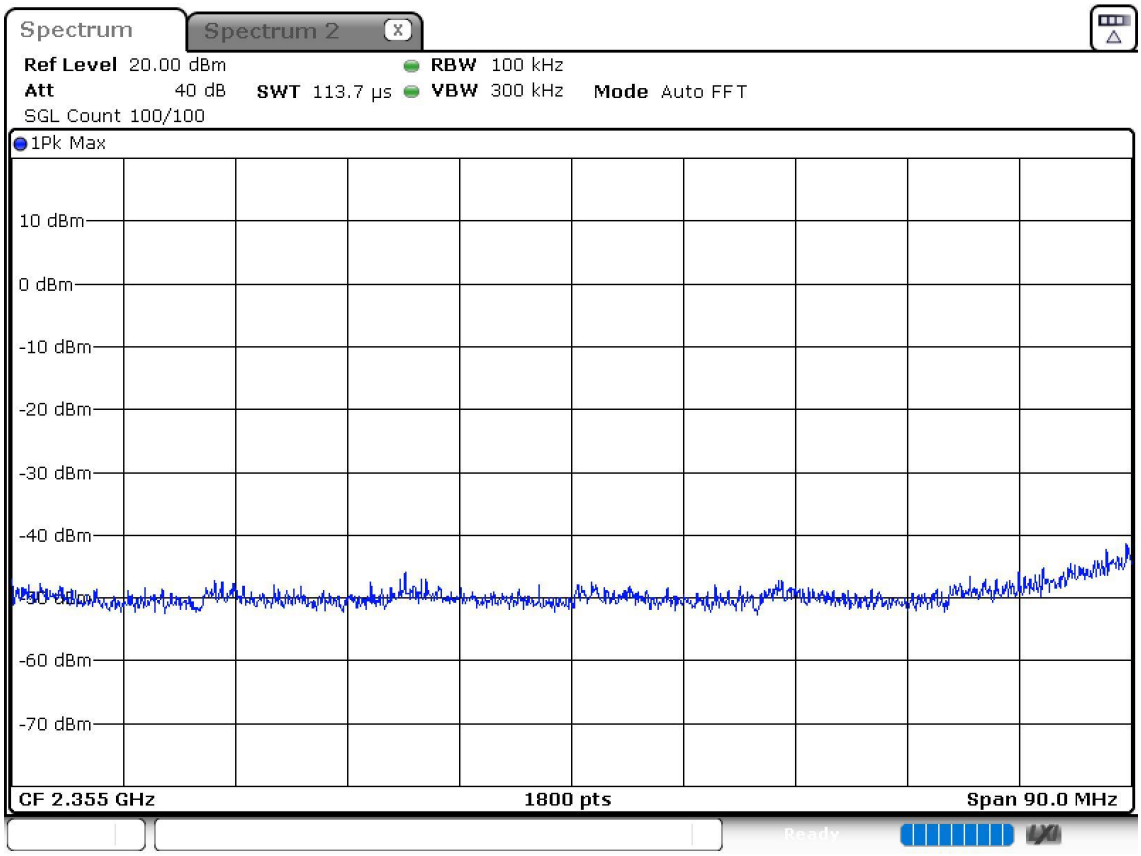
Frequency (MHz) = 2412.00000, Equipment Type: Digital Transmission System (DTS), Bandwidth (MHz) = 20, Modulation: 802.11g (OFDM 6 Mbit/s), Number of Transmission Chains = 1, Active Port: 1

Plots:

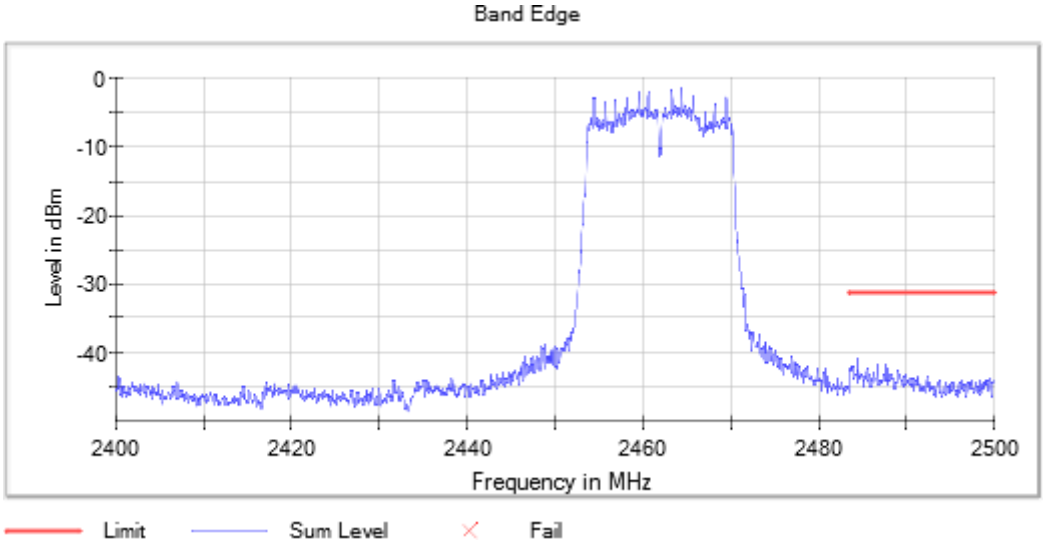


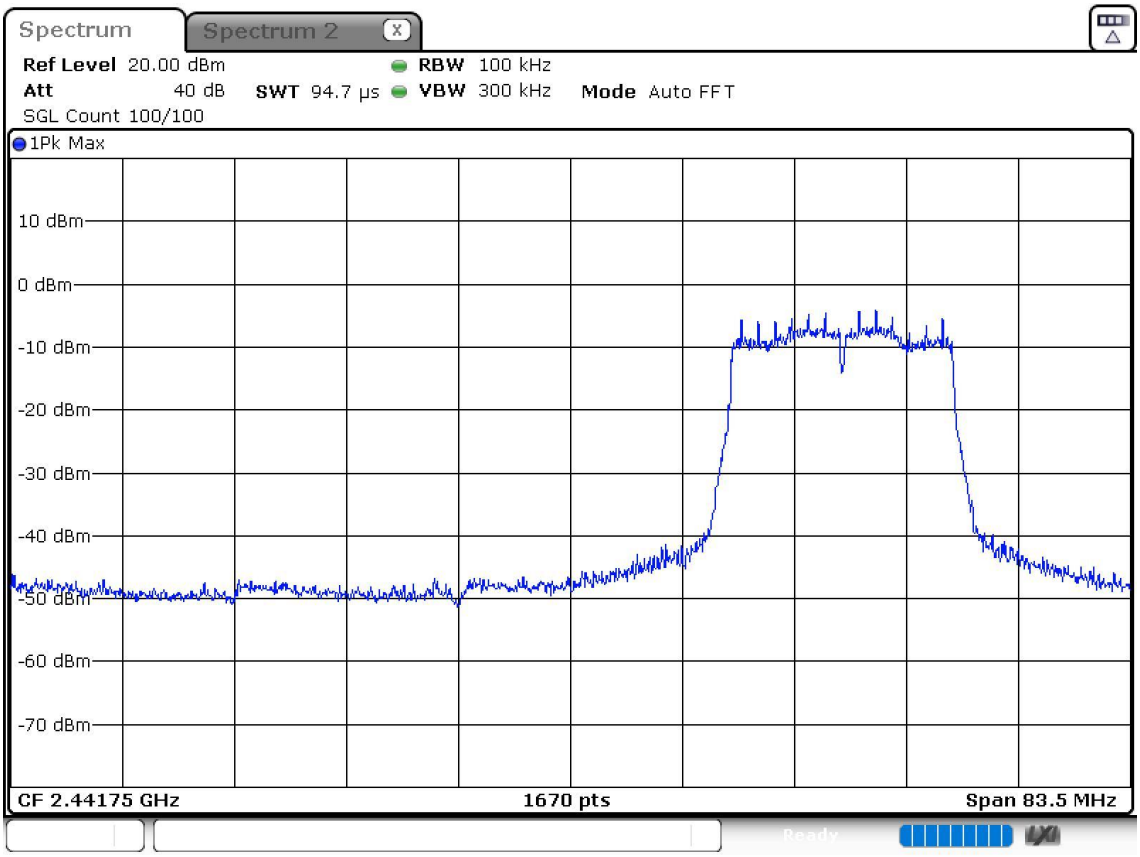


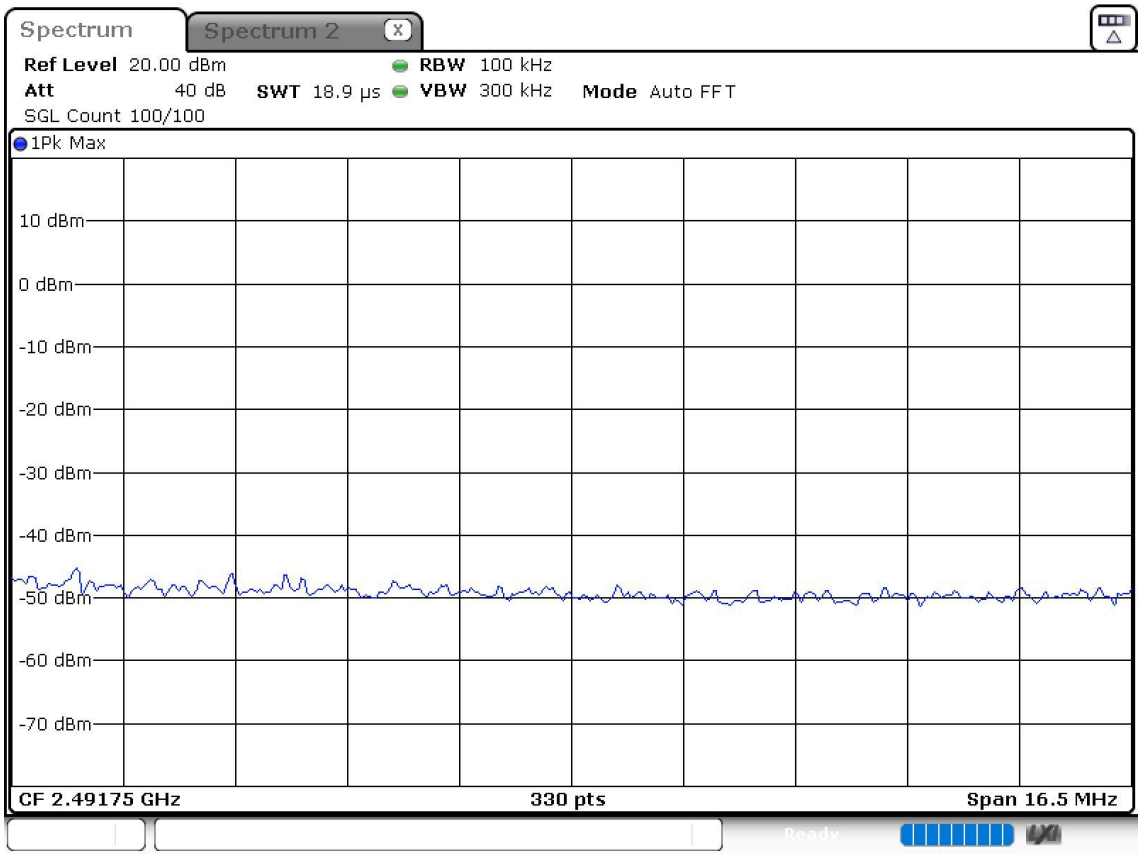

Spectrum
Spectrum 2
Ref Level 20.00 dBm
RBW 100 kHz
Att 40 dB
SWT 113.7 µs
VBW 300 kHz
Mode Auto FFT
SGL Count 100/100
1Pk Max
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.355 GHz
1800 pts
Span 90.0 MHz
Ready

Frequency (MHz) = 2462.00000, Equipment Type: Digital Transmission System (DTS), Bandwidth (MHz) = 20, Modulation: 802.11g (OFDM 6 Mbit/s), Number of Transmission Chains = 1, Active Port: 1

Plots:

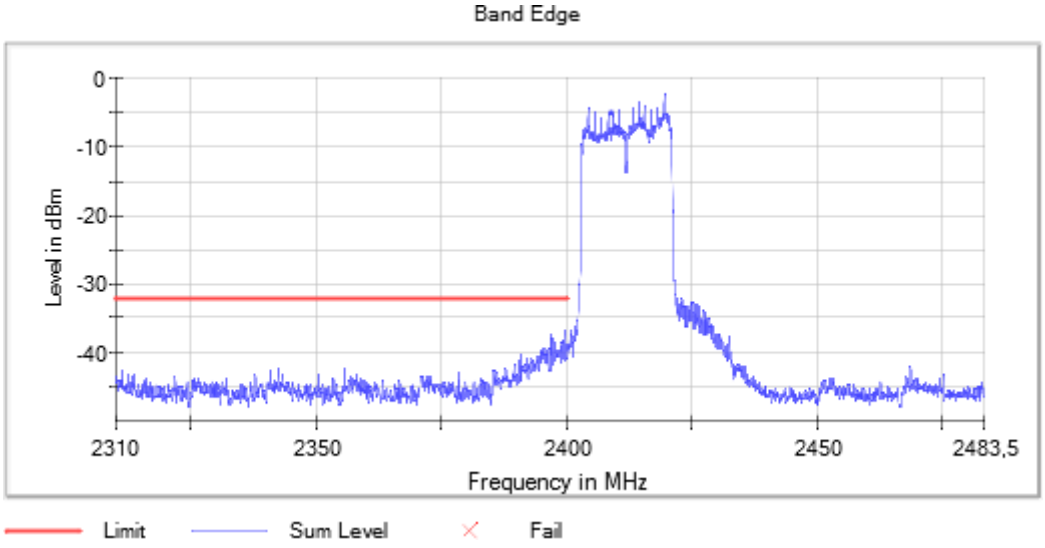


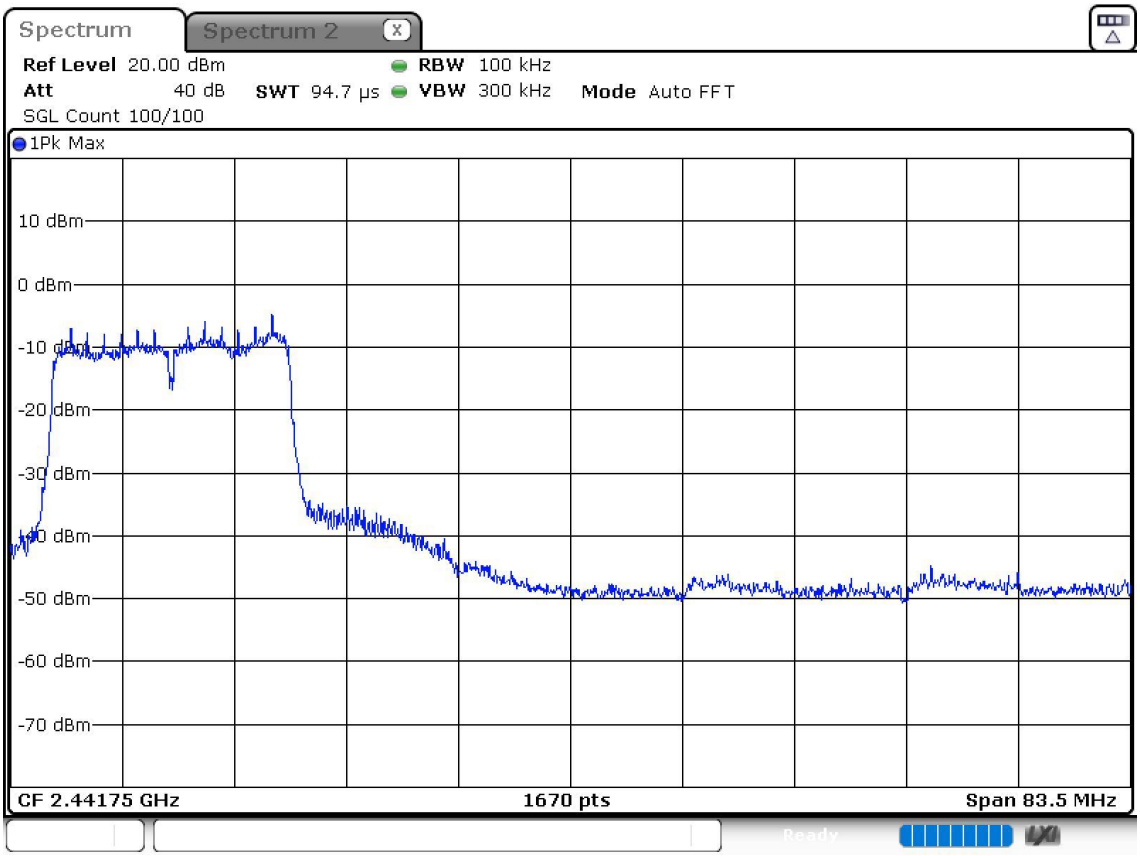


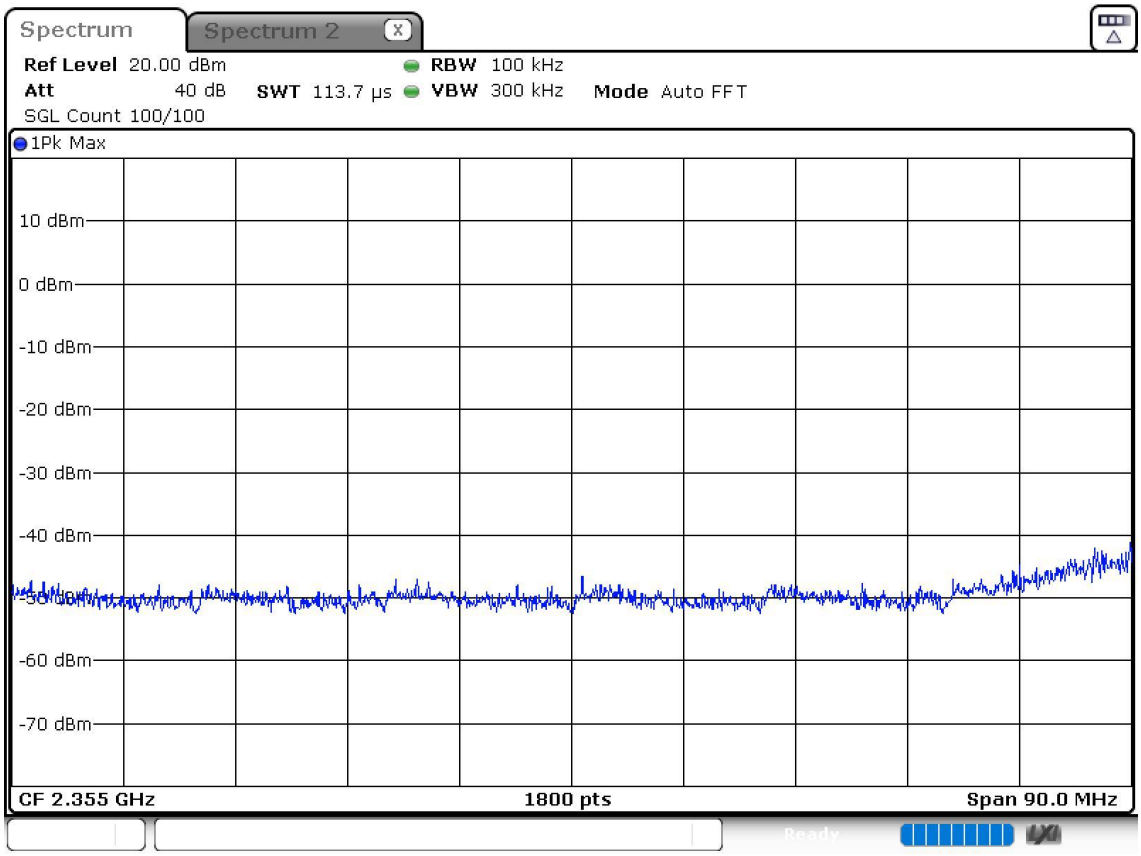

Spectrum
Spectrum 2
Ref Level 20.00 dBm
RBW 100 kHz
Att 40 dB
SWT 18.9 µs
VBW 300 kHz
Mode Auto FFT
SGL Count 100/100
1Pk Max
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.49175 GHz
330 pts
Span 16.5 MHz
Ready

Frequency (MHz) = 2412.00000, Equipment Type: Digital Transmission System (DTS), Bandwidth (MHz) = 20, Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Number of Transmission Chains = 1, Active Port: 1

Plots:

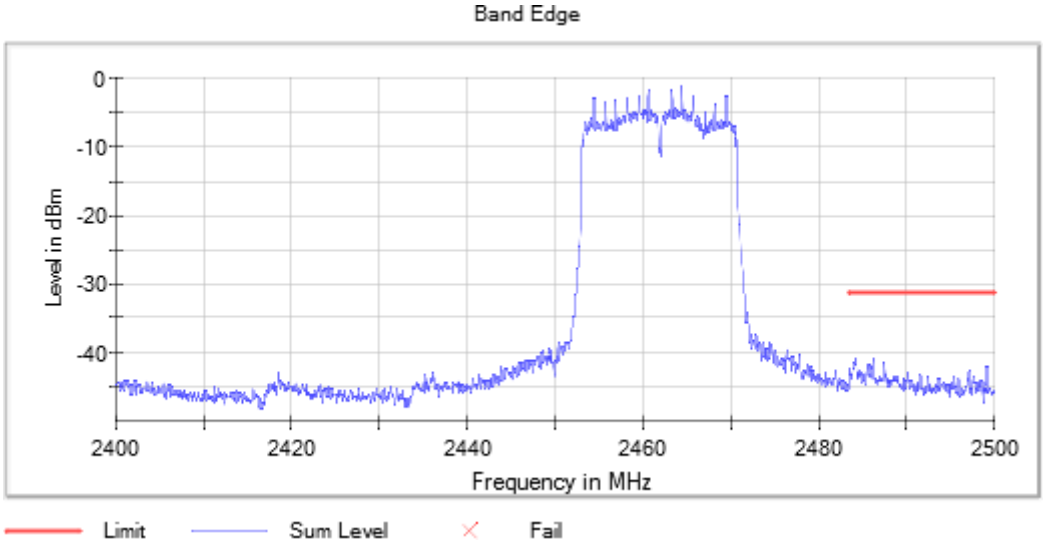


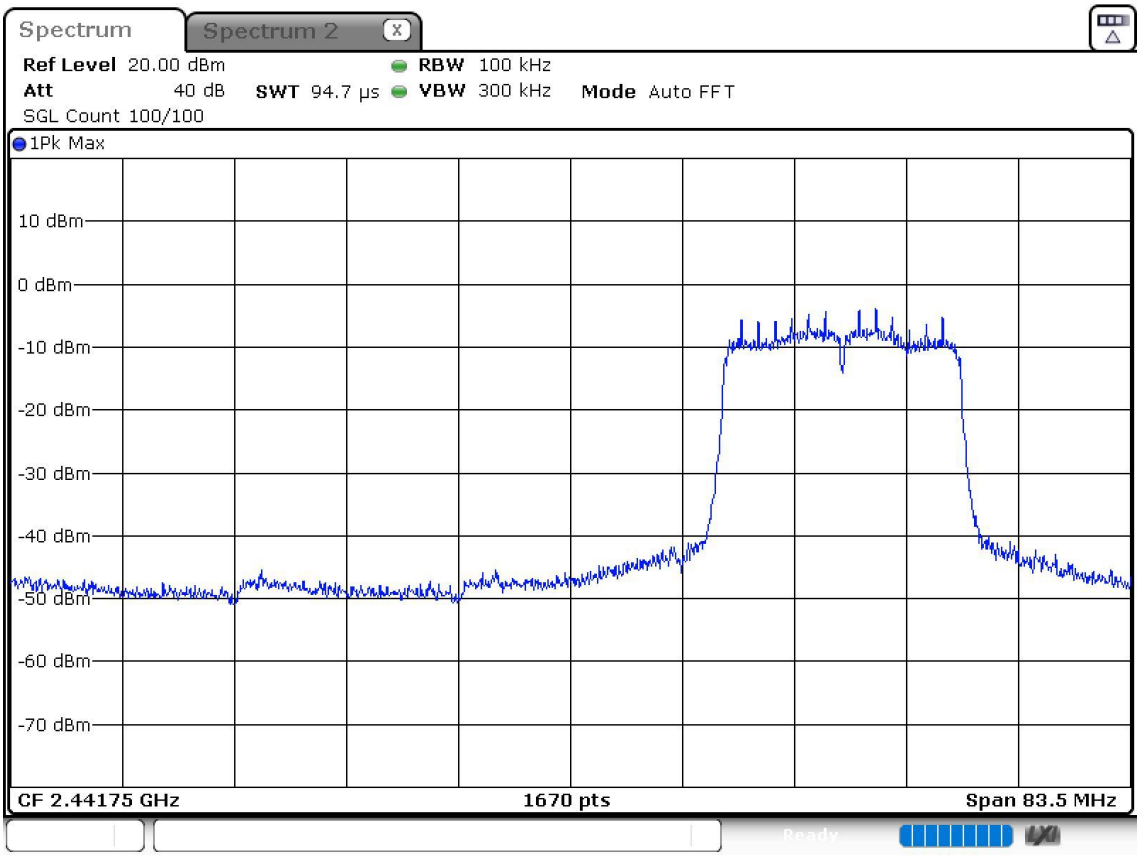


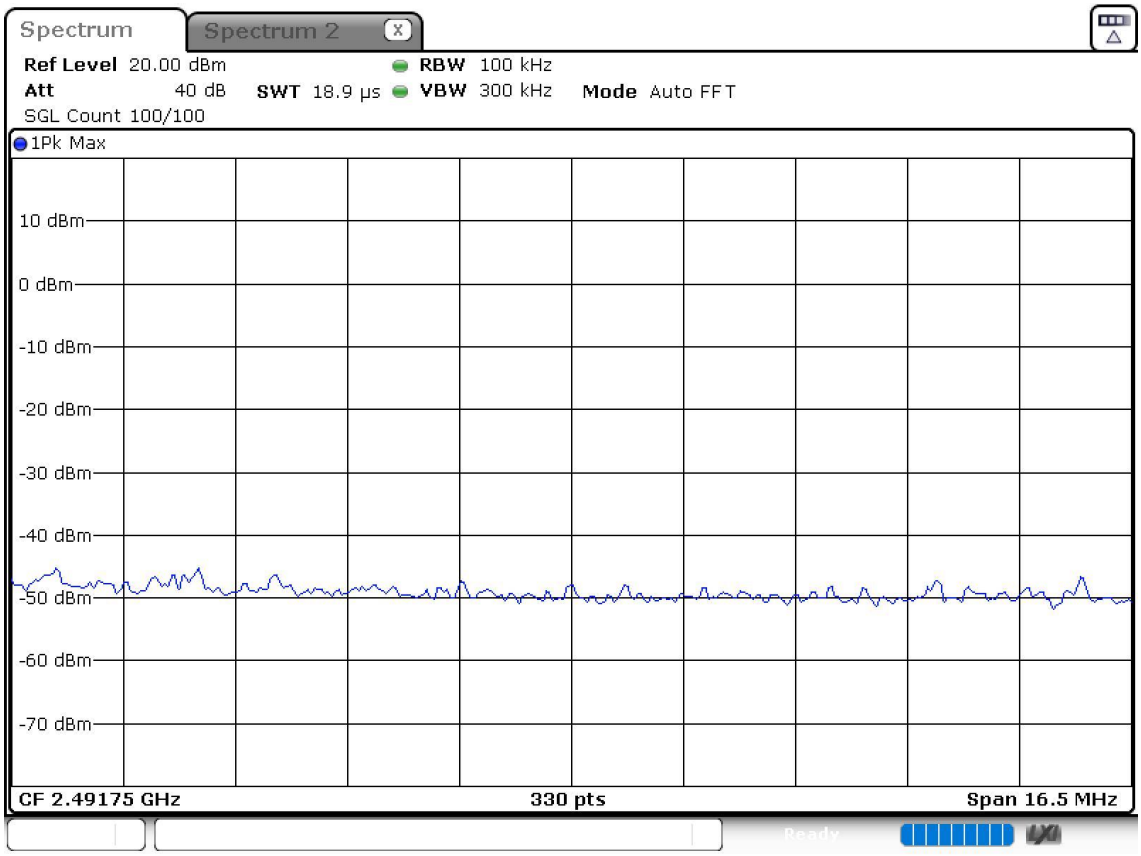

Spectrum
Spectrum 2
Ref Level 20.00 dBm
RBW 100 kHz
Att 40 dB
SWT 113.7 µs
VBW 300 kHz
Mode Auto FFT
SGL Count 100/100
1Pk Max
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.355 GHz
1800 pts
Span 90.0 MHz
Ready

Frequency (MHz) = 2462.00000, Equipment Type: Digital Transmission System (DTS), Bandwidth (MHz) = 20, Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Number of Transmission Chains = 1, Active Port: 1

Plots:






Spectrum
Spectrum 2
Ref Level 20.00 dBm
RBW 100 kHz
Att 40 dB
SWT 18.9 µs
VBW 300 kHz
Mode Auto FFT
SGL Count 100/100
1Pk Max
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.49175 GHz
330 pts
Span 16.5 MHz
Ready

RSS-247 5.2 (b) / FCC 15.247 (e) [Psd] Power spectral density

Limits

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Results

The maximum conducted output power spectral density of the fundamental emission was measured according to clause 11.10.3 “Method AVGPSD-1” of ANSI C63.10-2013.

Modulation: 802.11b (DSSS 1 Mbit/s)

Freq (MHz)	Equipment	BW (MHz)	# of Tx Chains	Port	Duty Cycle (%)	PSD (dBm)
2412.00000	Digital Transmission System (DTS)	20	1	1	99.88	-7.39
2437.00000		20	1	1		-6.44
2462.00000		20	1	1		-7.22

Modulation: 802.11g (OFDM 6 Mbit/s)

Freq (MHz)	Equipment	BW (MHz)	# of Tx Chains	Port	Duty Cycle (%)	PSD (dBm)
2412.00000	Digital Transmission System (DTS)	20	1	1	98.68	-12.28
2437.00000		20	1	1		-11.44
2462.00000		20	1	1		-11.73

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

Freq (MHz)	Equipment	BW (MHz)	# of Tx Chains	Port	Duty Cycle (%)	PSD (dBm)
2412.00000	Digital Transmission System (DTS)	20	1	1	98.59	-12.13
2437.00000		20	1	1		-11.25
2462.00000		20	1	1		-12.20

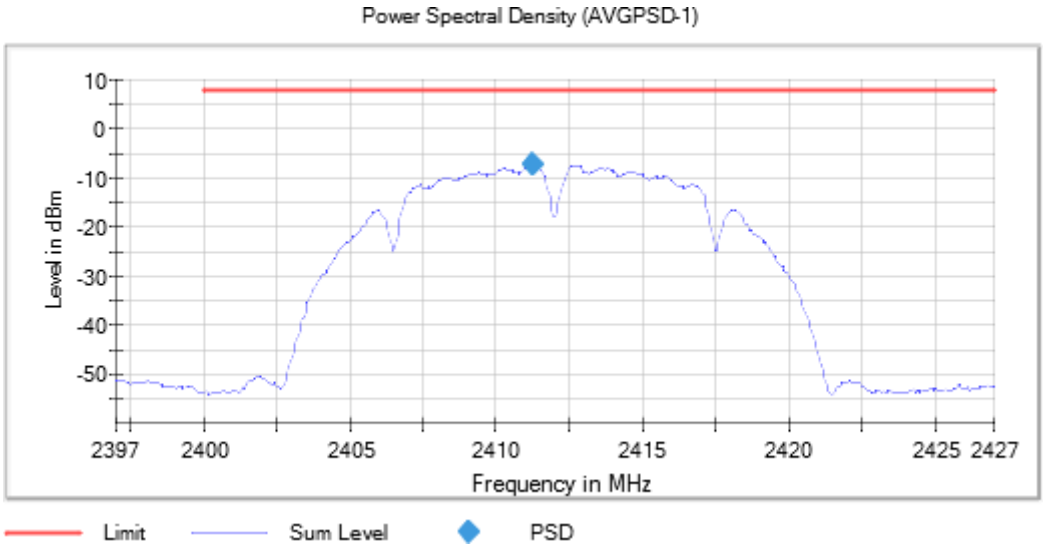
Verdict

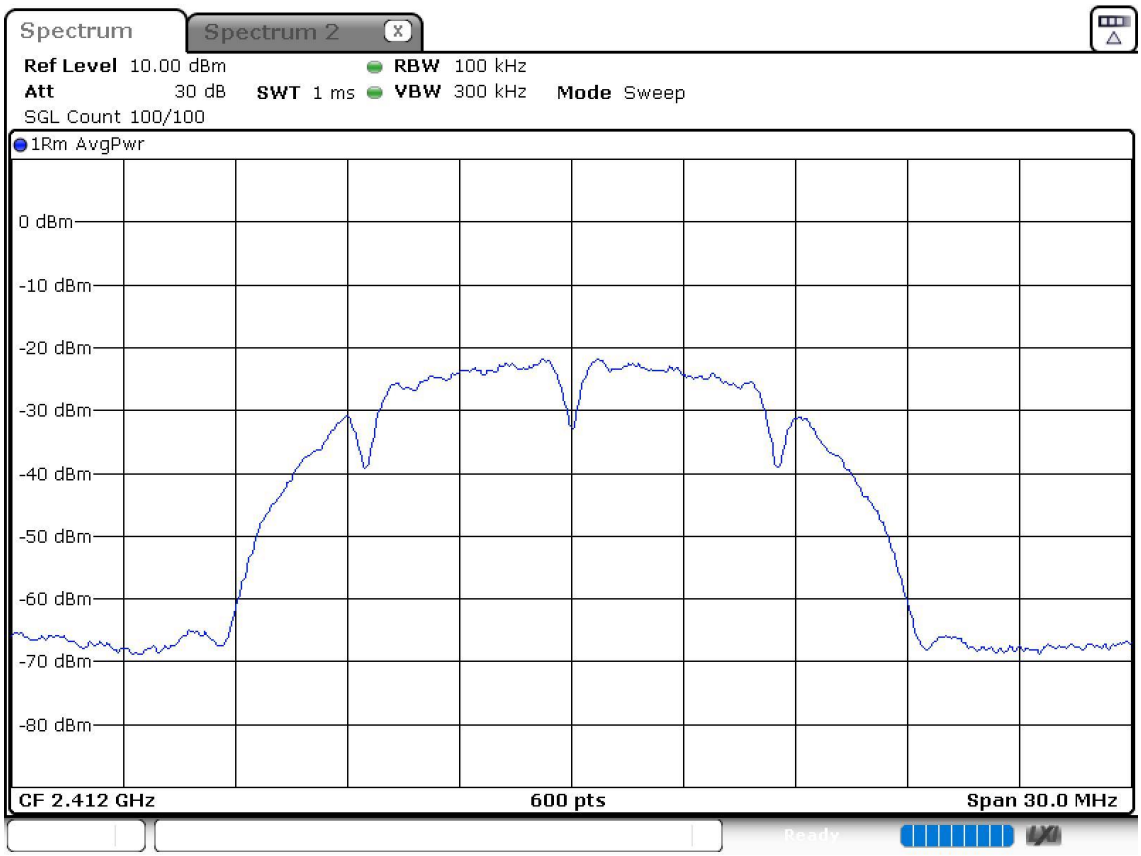
Pass

Attachments

Frequency (MHz) = 2412.00000, Equipment Type: Digital Transmission System (DTS), Bandwidth (MHz) = 20, Modulation: 802.11b (DSSS 1 Mbit/s), Number of Transmission Chains = 1, Active Port: 1

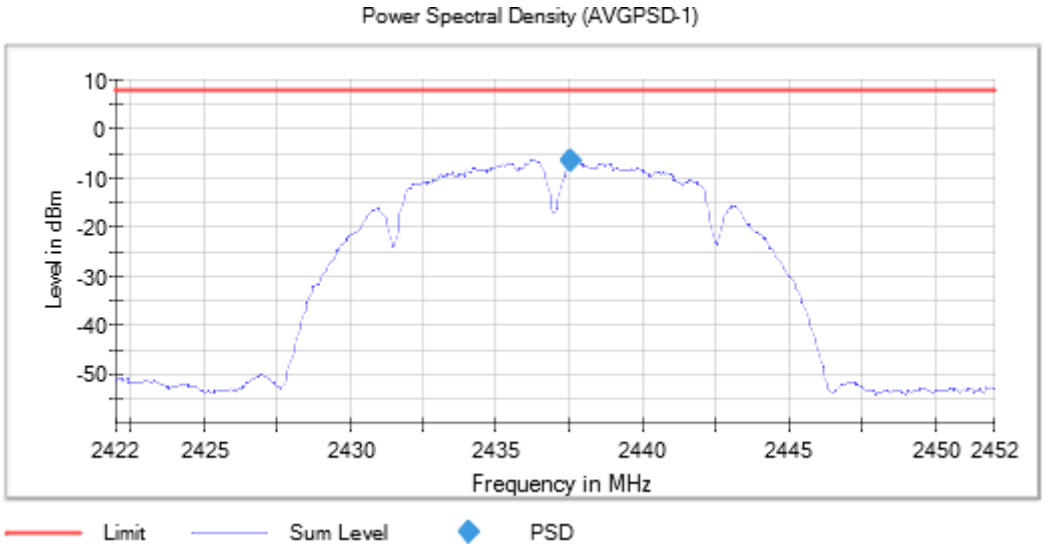
Plots:





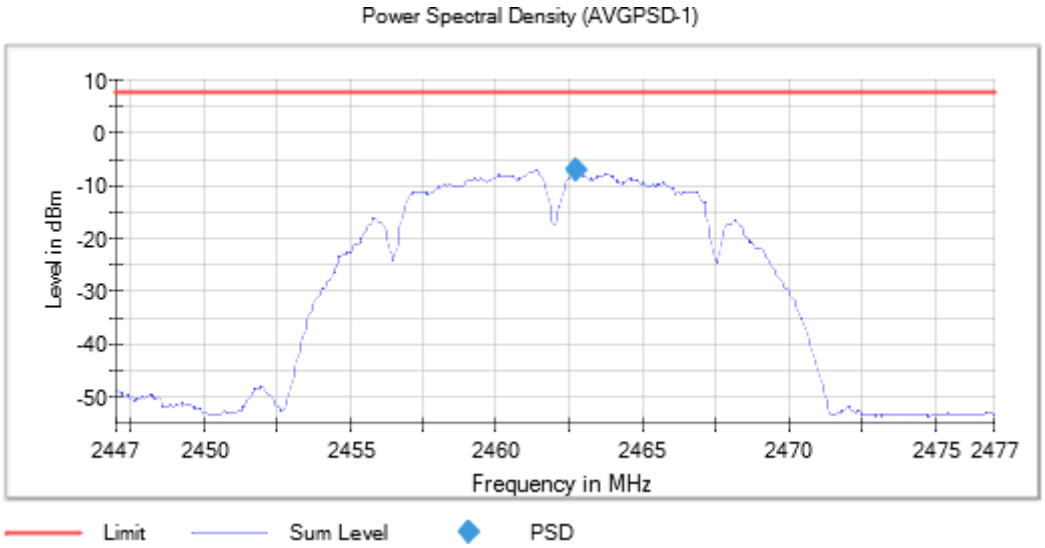
Frequency (MHz) = 2437.00000, Equipment Type: Digital Transmission System (DTS), Bandwidth (MHz) = 20, Modulation: 802.11b (DSSS 1 Mbit/s), Number of Transmission Chains = 1, Active Port: 1

Plots:



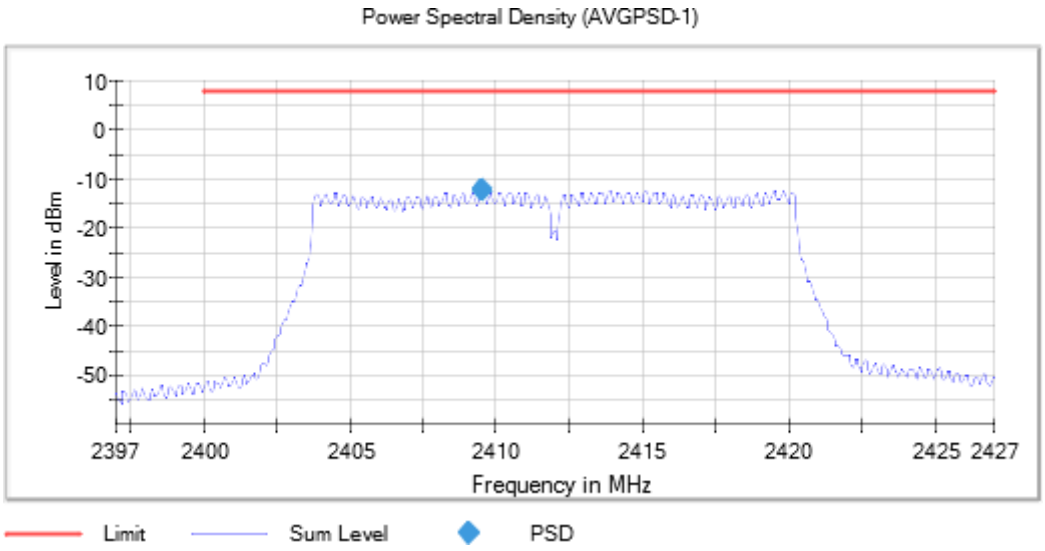
Frequency (MHz) = 2462.00000, Equipment Type: Digital Transmission System (DTS), Bandwidth (MHz) = 20, Modulation: 802.11b (DSSS 1 Mbit/s), Number of Transmission Chains = 1, Active Port: 1

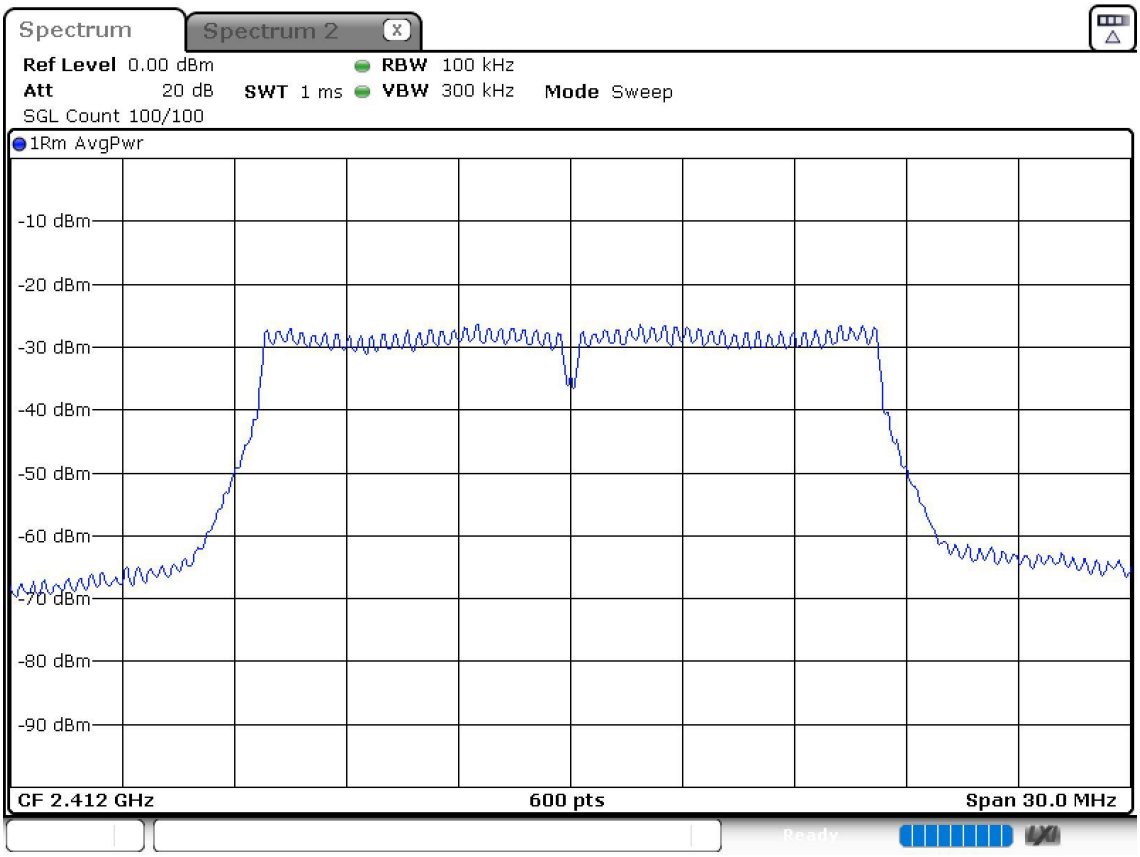
Plots:



Frequency (MHz) = 2412.00000, Equipment Type: Digital Transmission System (DTS), Bandwidth (MHz) = 20, Modulation: 802.11g (OFDM 6 Mbit/s), Number of Transmission Chains = 1, Active Port: 1

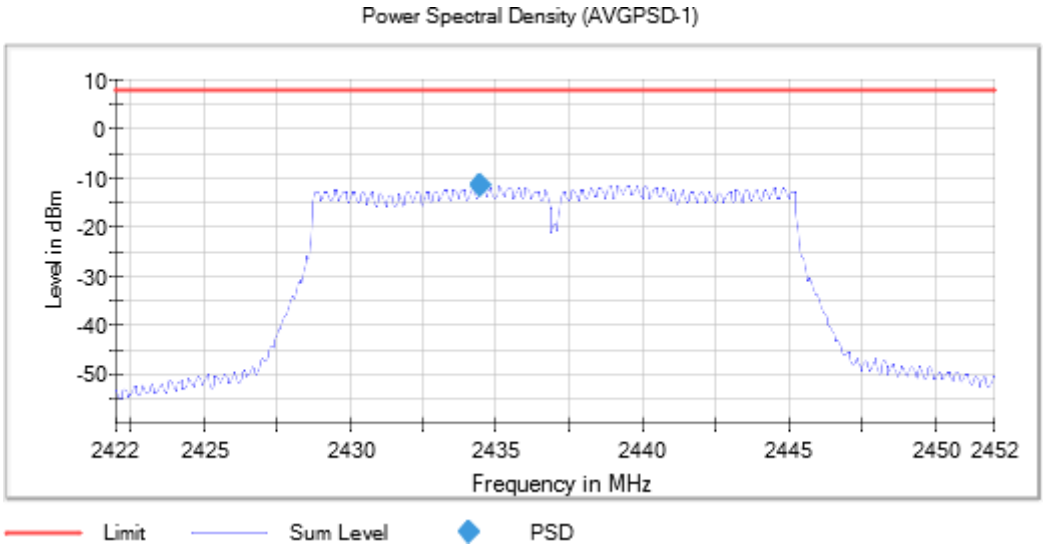
Plots:

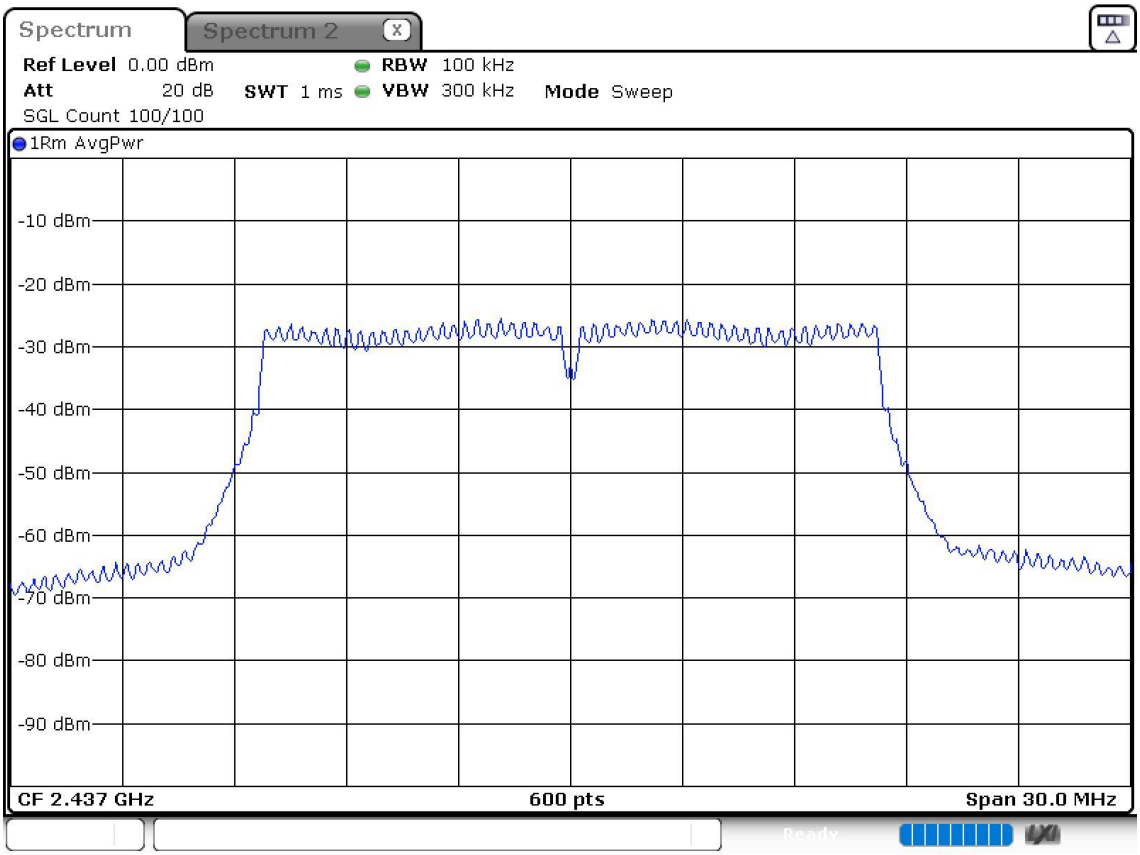




Frequency (MHz) = 2437.00000, Equipment Type: Digital Transmission System (DTS), Bandwidth (MHz) = 20, Modulation: 802.11g (OFDM 6 Mbit/s), Number of Transmission Chains = 1, Active Port: 1

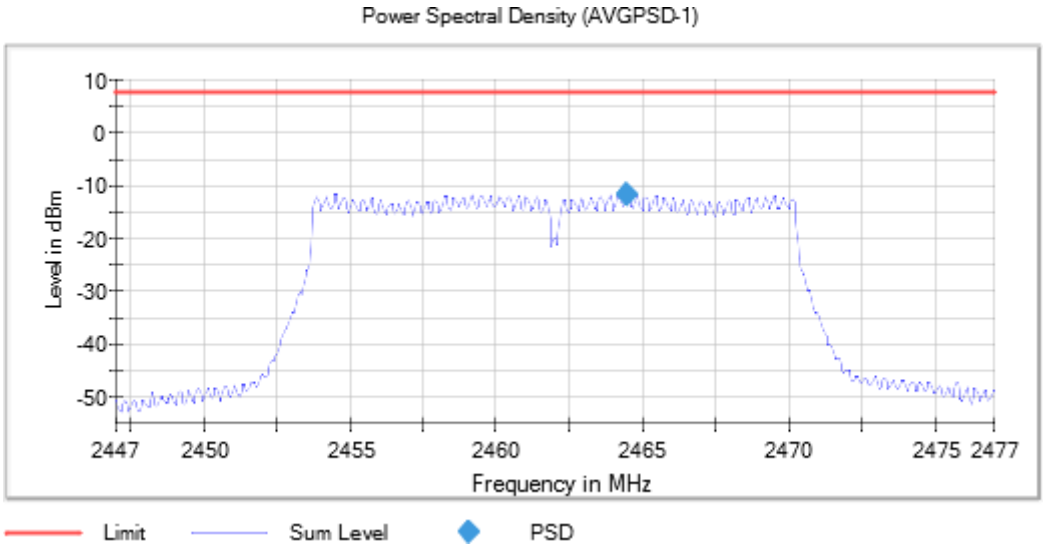
Plots:

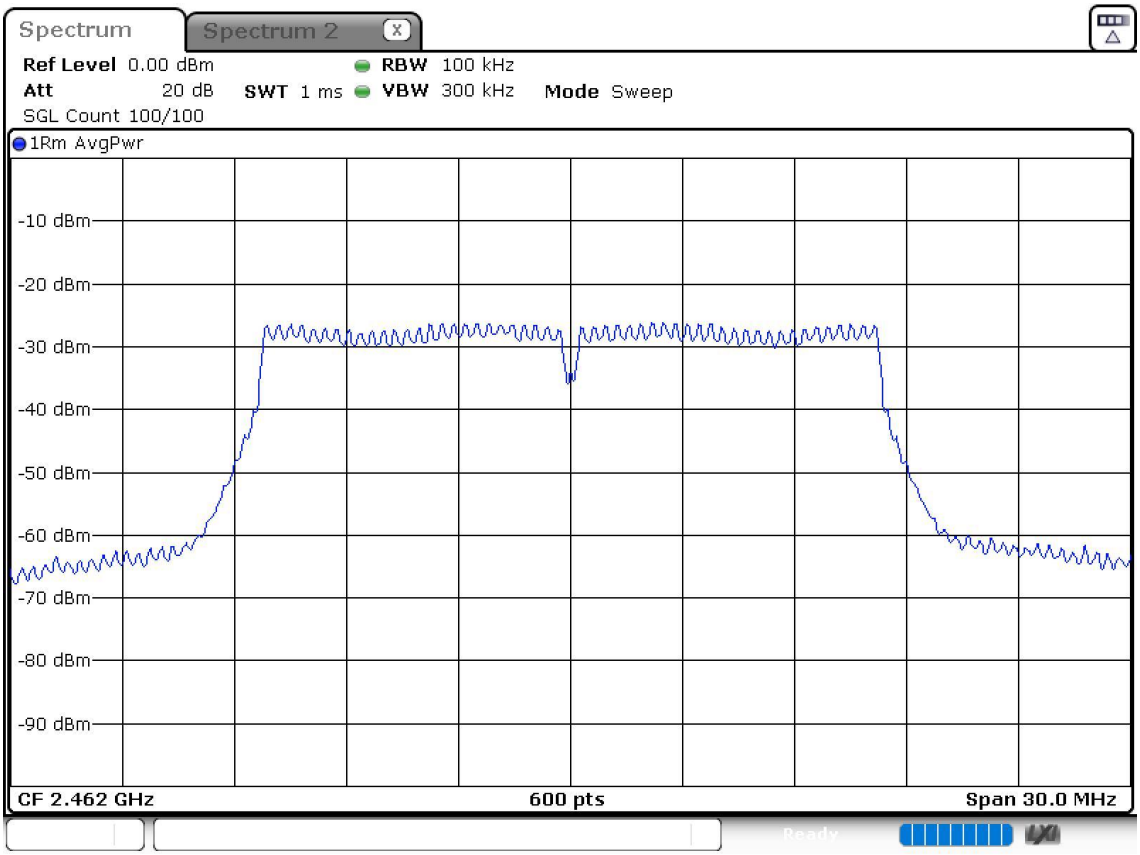




Frequency (MHz) = 2462.00000, Equipment Type: Digital Transmission System (DTS), Bandwidth (MHz) = 20, Modulation: 802.11g (OFDM 6 Mbit/s), Number of Transmission Chains = 1, Active Port: 1

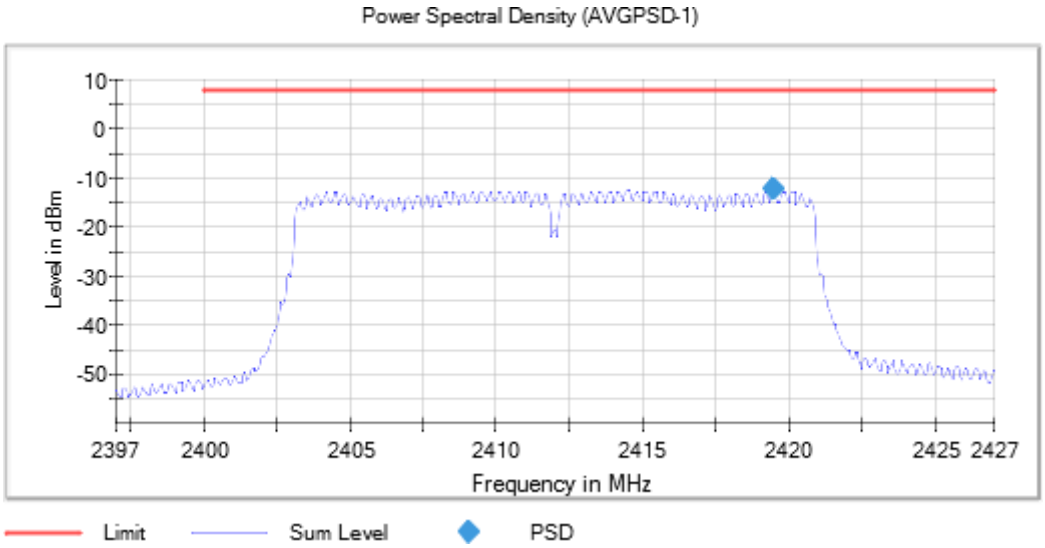
Plots:

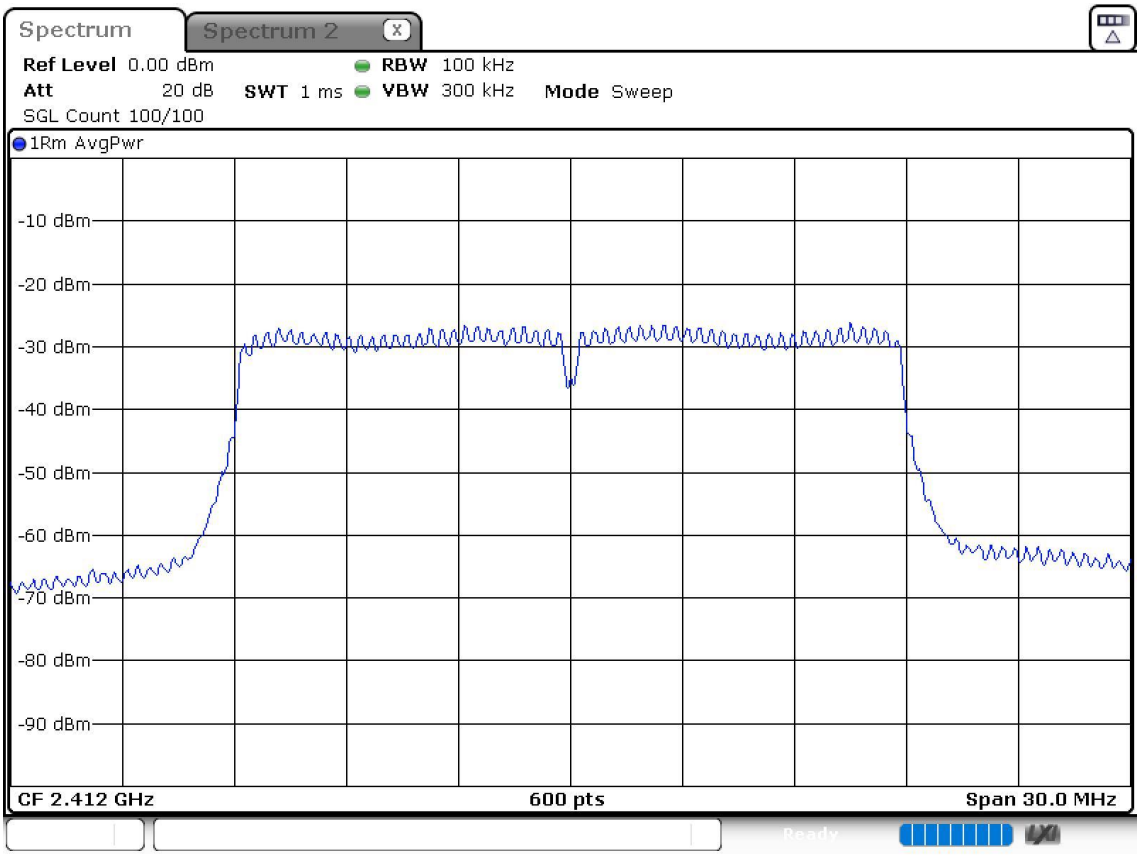




Frequency (MHz) = 2412.00000, Equipment Type: Digital Transmission System (DTS), Bandwidth (MHz) = 20, Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Number of Transmission Chains = 1, Active Port: 1

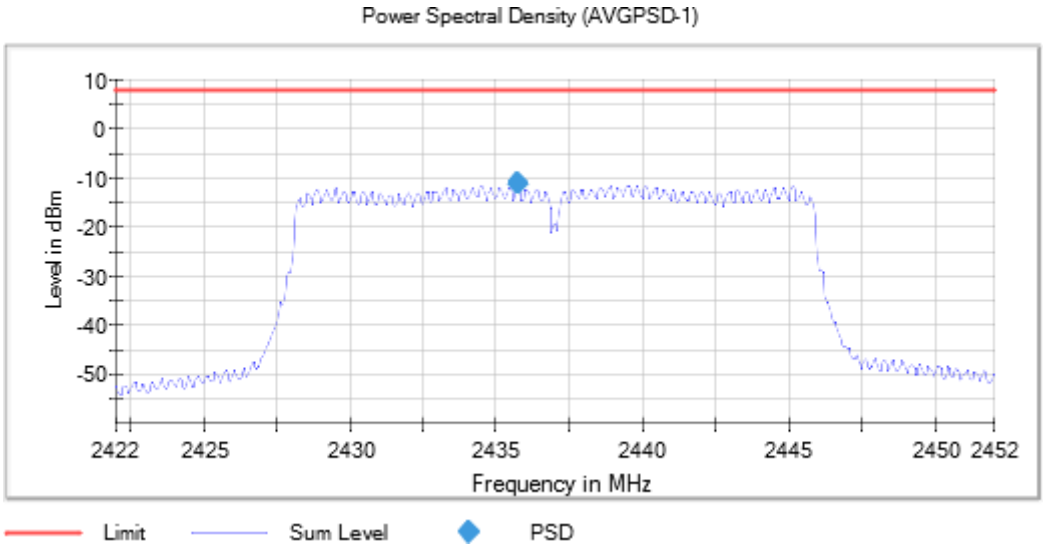
Plots:

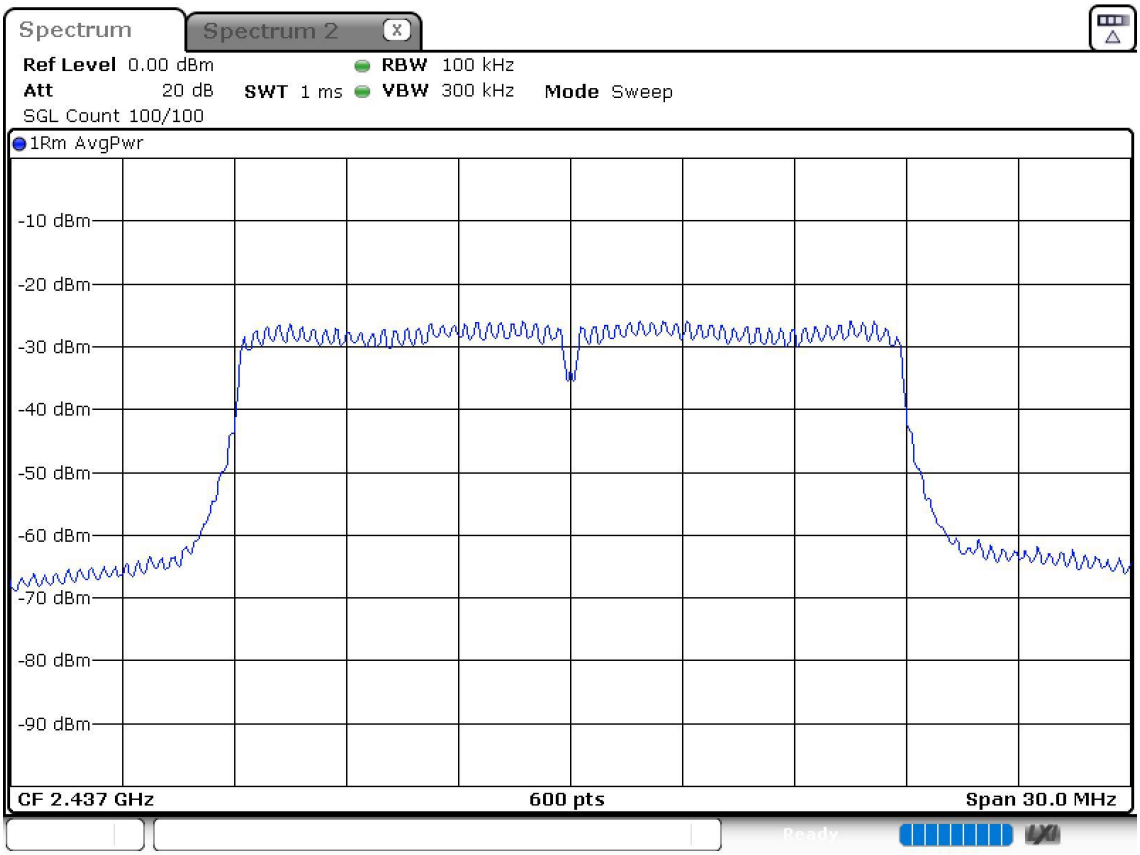




Frequency (MHz) = 2437.00000, Equipment Type: Digital Transmission System (DTS), Bandwidth (MHz) = 20, Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Number of Transmission Chains = 1, Active Port: 1

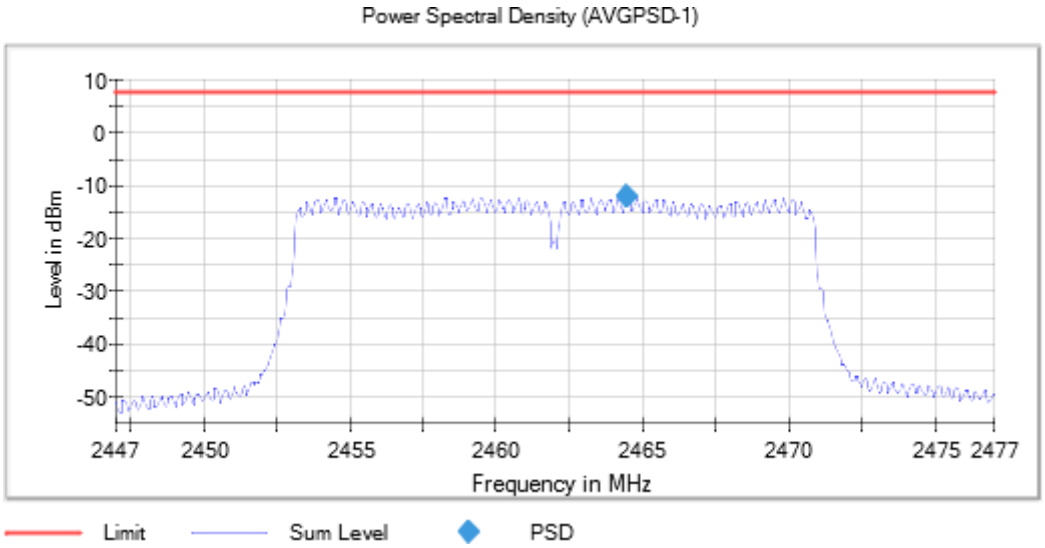
Plots:

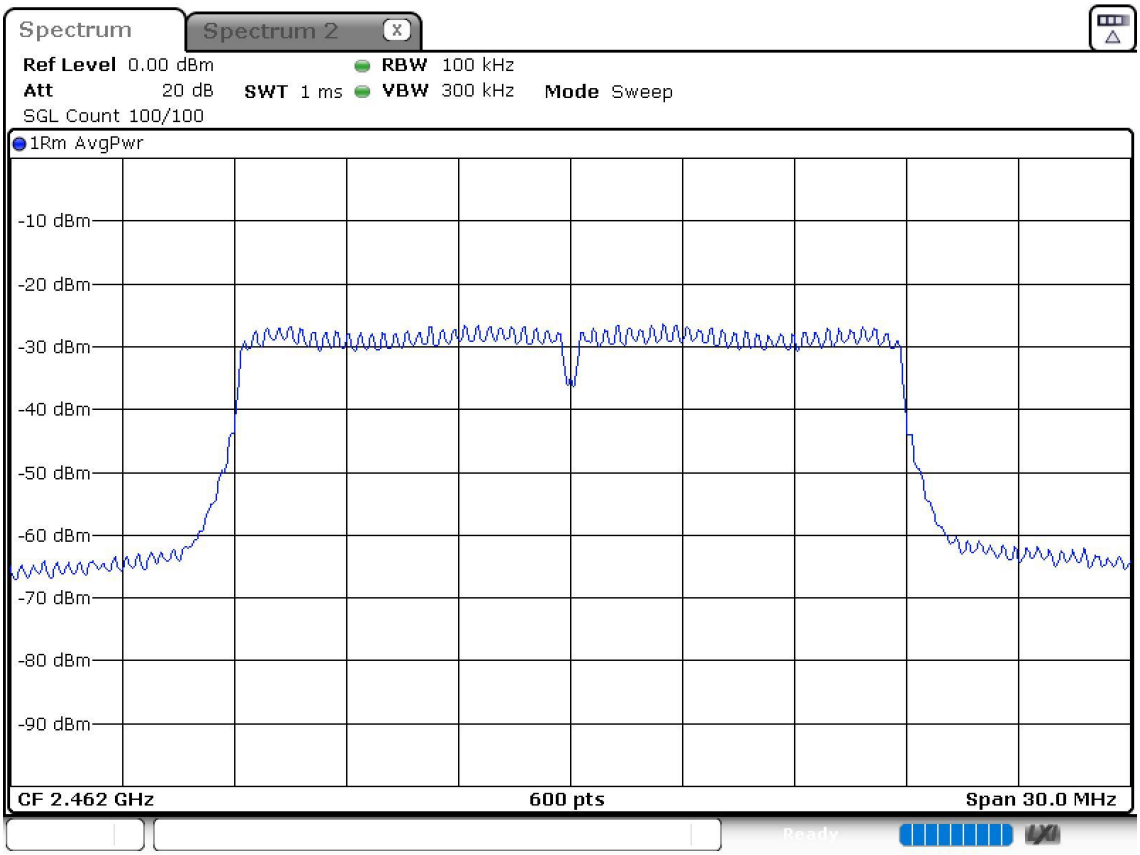




Frequency (MHz) = 2462.00000, Equipment Type: Digital Transmission System (DTS), Bandwidth (MHz) = 20, Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Number of Transmission Chains = 1, Active Port: 1

Plots:





RSS-247 5.4 (d) / FCC 15.247 (b) (3) (4)
[Avcp] Maximum output power and antenna gain

Limits

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

The conducted output power limit is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Results

The maximum average conducted output power level of the fundamental emission was measured according to clause 11.9.2.3.2 “Method AVGPM-G” of ANSI C63.10-2013.

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

Maximum Declared Antenna Gain: 1.55 dBi

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Modulation: 802.11b (DSSS 1 Mbit/s)

Freq (MHz)	Equipment	BW (MHz)	# of Tx Chains	Port	Power (dBm)	E.I.R.P. (dBm)
2412.00000	Digital Transmission System (DTS)	20	1	1	12.90	14.45
2437.00000		20	1	1	13.40	14.95
2462.00000		20	1	1	13.00	14.55

Modulation: 802.11g (OFDM 6 Mbit/s)

Freq (MHz)	Equipment	BW (MHz)	# of Tx Chains	Port	Power (dBm)	E.I.R.P. (dBm)
2412.00000	Digital Transmission System (DTS)	20	1	1	10.70	12.25
2437.00000		20	1	1	11.00	12.55
2462.00000		20	1	1	10.60	12.15

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

Freq (MHz)	Equipment	BW (MHz)	# of Tx Chains	Port	Power (dBm)	E.I.R.P. (dBm)
2412.00000	Digital Transmission System (DTS)	20	1	1	10.8	12.35
2437.00000		20	1	1	11.1	12.65
2462.00000		20	1	1	10.7	12.25

Verdict

Pass

RSS-247 5.5 / FCC 15.247 (d) [RSE] 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 (µV/m)	Field strength (dBµV/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 specified when measuring with peak detector function.

RSS-247:

Attenuation below the general field strength limits specified in RSS-Gen is not required.

Results

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 (dBµV/m)	Pol	Detector
[0.03, 1]	559.984	30.68	V	QP
	591.994	31.19	V	QP
	599.984	36.47	H	QP
	924.977	34.13	V	QP
	974.992	35.65	V	QP

Frequency range 1 GHz – 26 GHz:

The results in the next tables show the maximum measured levels in the 1 – 26 GHz range including the restricted bands 2.31 – 2.39 GHz and 2.4835 – 2.5 GHz.

Spurious frequencies with peak levels above the average limit (54 dBµV/m at 3 m) are measured with average detector in order to check with the average limit.

Modulation: 802.11b (DSSS 1 Mbit/s)

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

Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[3, 17]	2437.00000	4873.620	40.31	H	PK
		7310.180	50.41	H	PK
	2462.00000	4924.020	43.16	V	PK
		7385.360	50.89	H	PK

Modulation: 802.11g (OFDM 6 Mbit/s)

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

Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[3, 17]	2412.00000	9302.380	48.74	V	PK
	2437.00000	3610.260	38.36	V	PK
		7328.240	50.71	V	PK
	2462.00000	4925.840	41.54	H	PK
		7393.760	50.71	H	PK

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

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

Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[3, 17]	2412.00000	7250.400	46.49	H	PK
	2437.00000	7316.620	50.32	H	PK
	2462.00000	7379.760	49.64	H	PK

Verdict

Pass

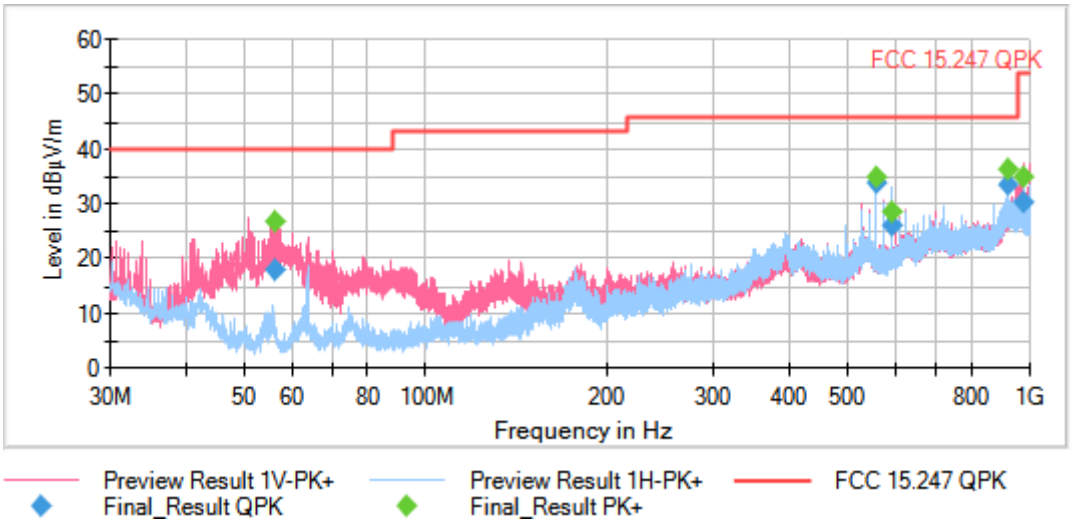
Attachments

Measurement settings:

Subrange	**Step Size**	**Detectors**	**Bandwidth**	**Sweep Time**	**Preamp**
Receiver: [ESR 7]					
30 MHz - 1 GHz	30,312 kHz	PK+	100 kHz	1 s	0 dB
Subrange	**Step Size**	**Detectors**	**Bandwidth**	**Sweep Time**	**Preamp**
Receiver: [FSW 50]					
1 GHz - 3 GHz	200 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
Subrange	**Step Size**	**Detectors**	**Bandwidth**	**Sweep Time**	**Preamp**
Receiver: [FSW 50]					
3 GHz - 17 GHz	140 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
Subrange	**Step Size**	**Detectors**	**Bandwidth**	**Sweep Time**	**Preamp**
Receiver: [FSW 50]					
17 GHz - 26 GHz	90 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Equipment Type: Digital Transmission System (DTS), Modulation: 802.11b (DSSS 1 Mbit/s), Frequency Range (GHz) = [0.03, 1], Number of Transmission Chains = 1

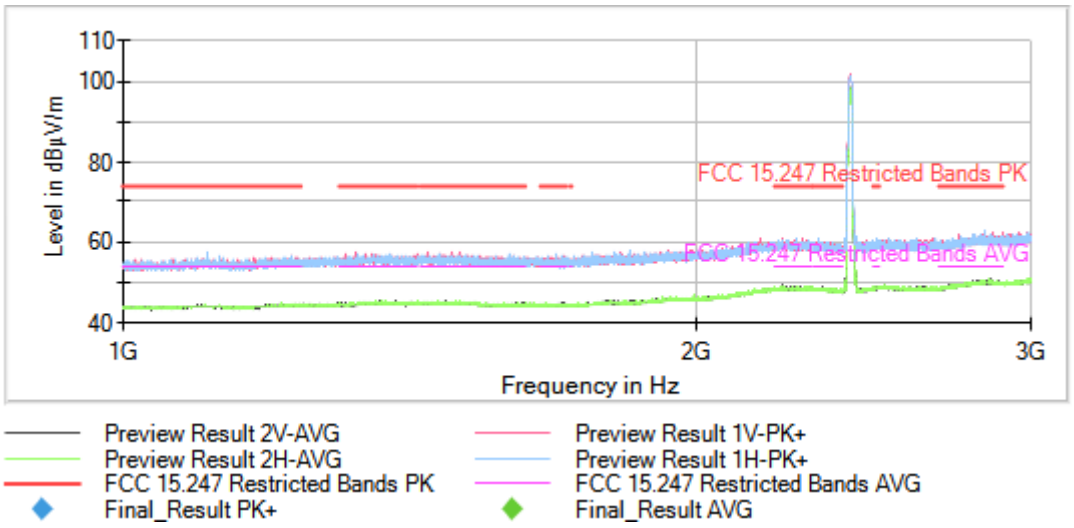
Plots:



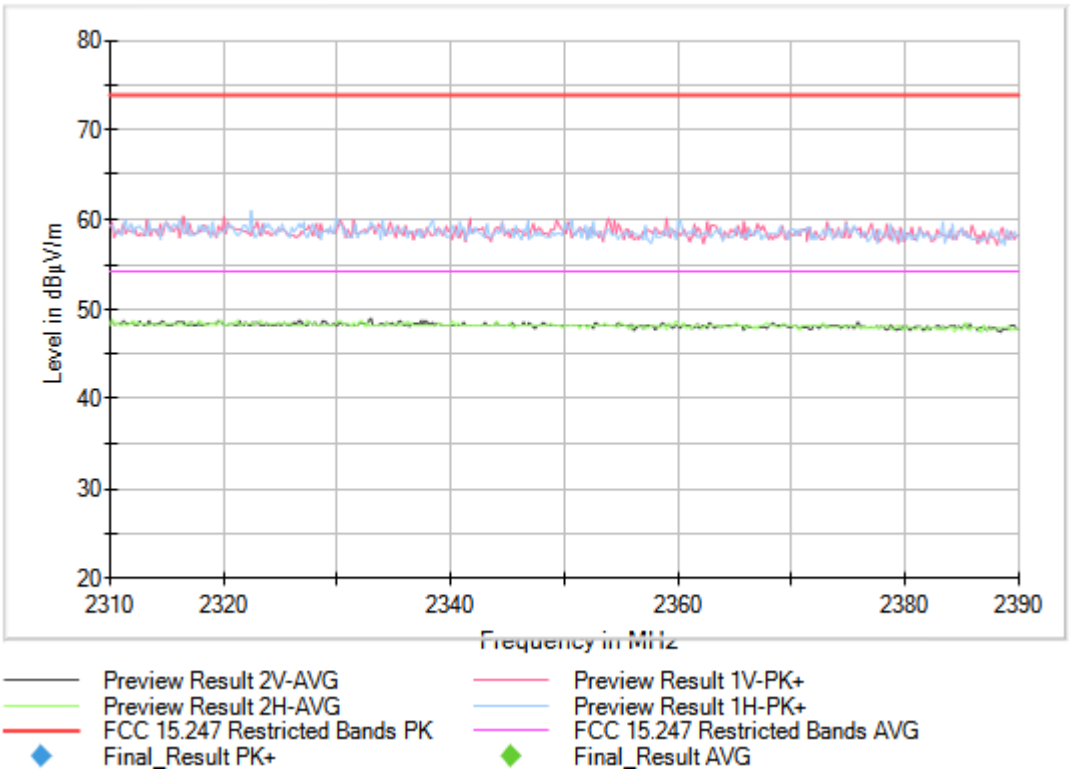
This plot is valid for Low, Middle and High Channels.

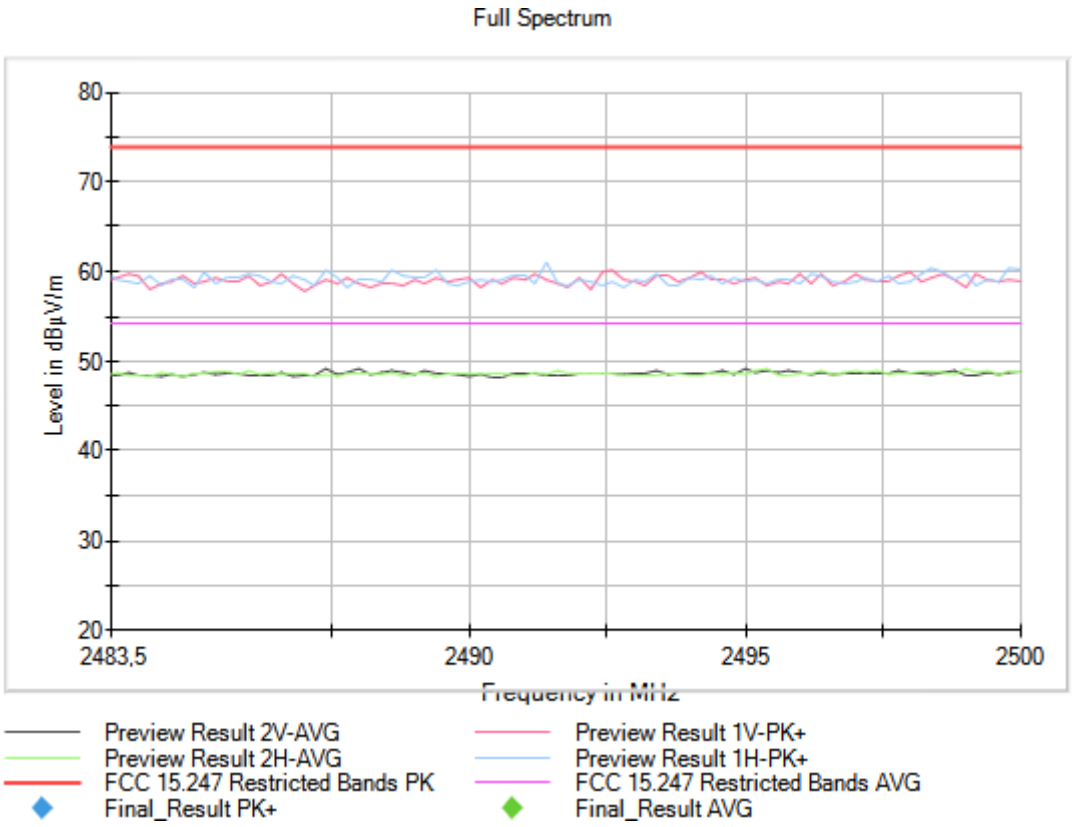
Frequency (MHz) = 2412.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11b (DSSS 1 Mbit/s), Frequency Range (GHz) = [1, 3], Number of Transmission Chains = 1

Plots:



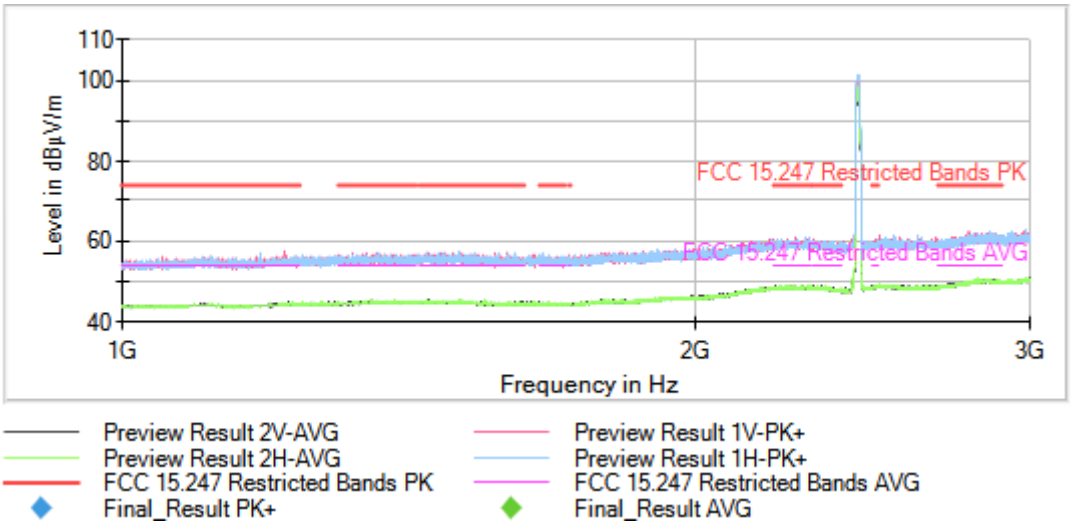
Full Spectrum



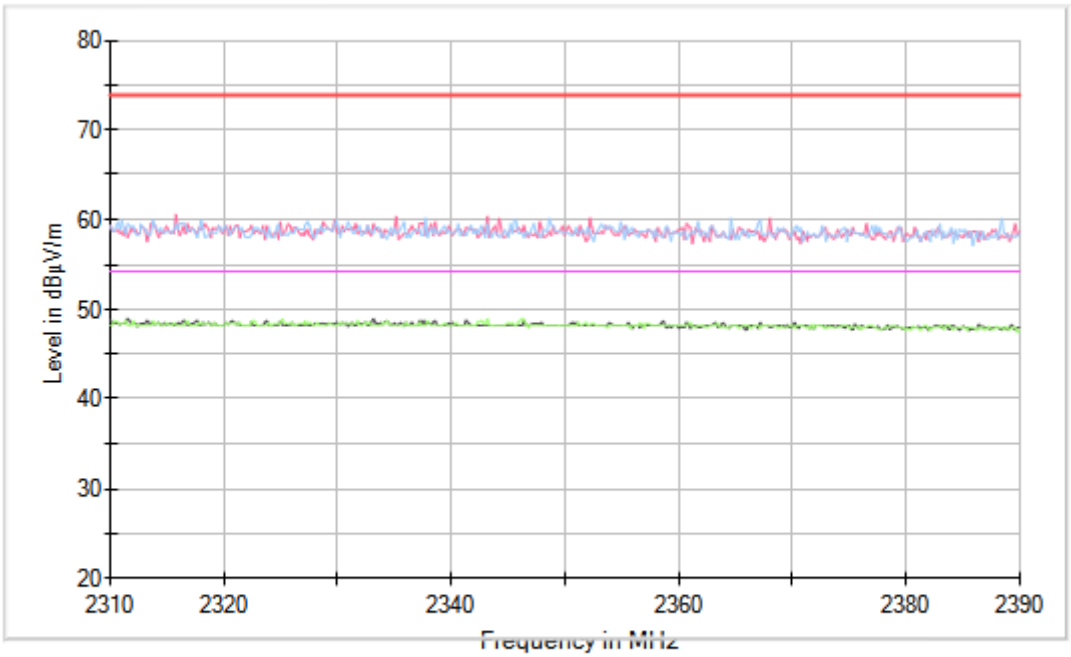

Full Spectrum
80
70
60
50
40
30
20
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 Restricted Bands PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

Frequency (MHz) = 2437.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11b (DSSS 1 Mbit/s), Frequency Range (GHz) = [1, 3], Number of Transmission Chains = 1

Plots:



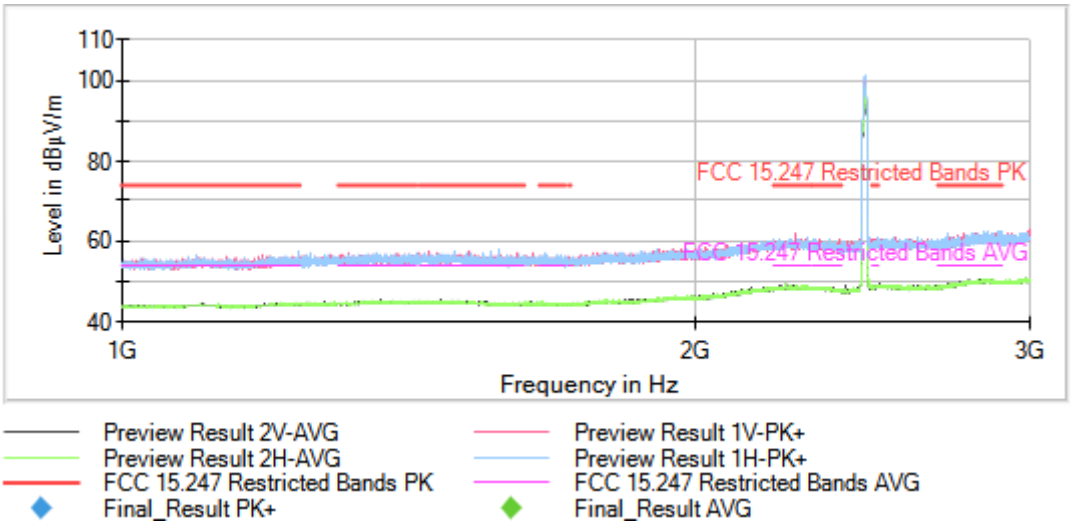
Full Spectrum



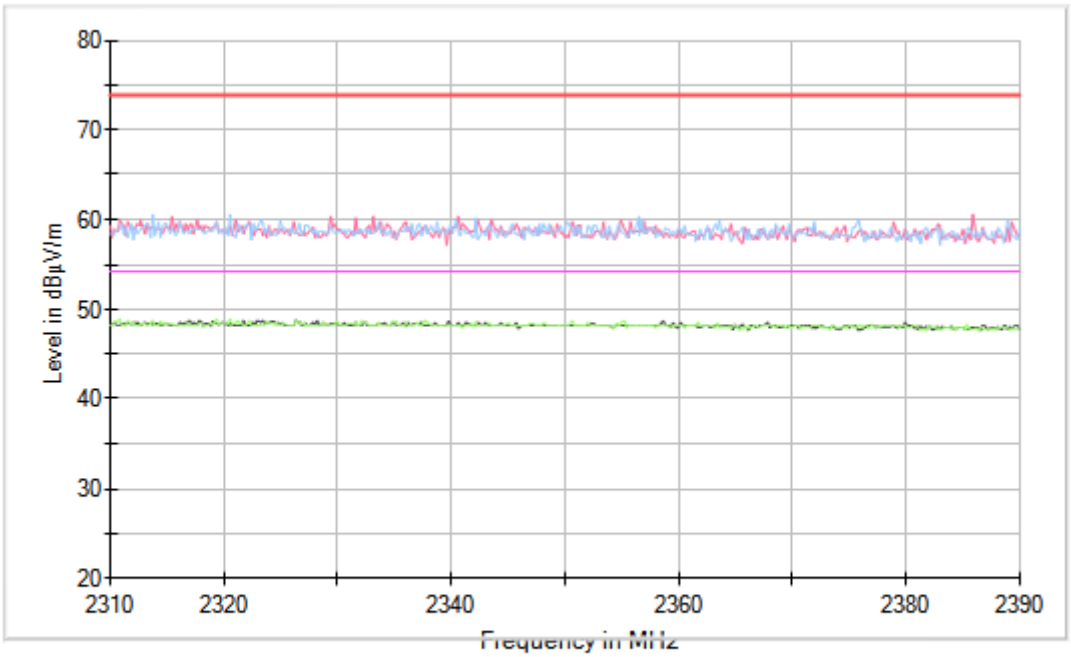
Full Spectrum
80
70
60
50
40
30
20
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 Restricted Bands PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

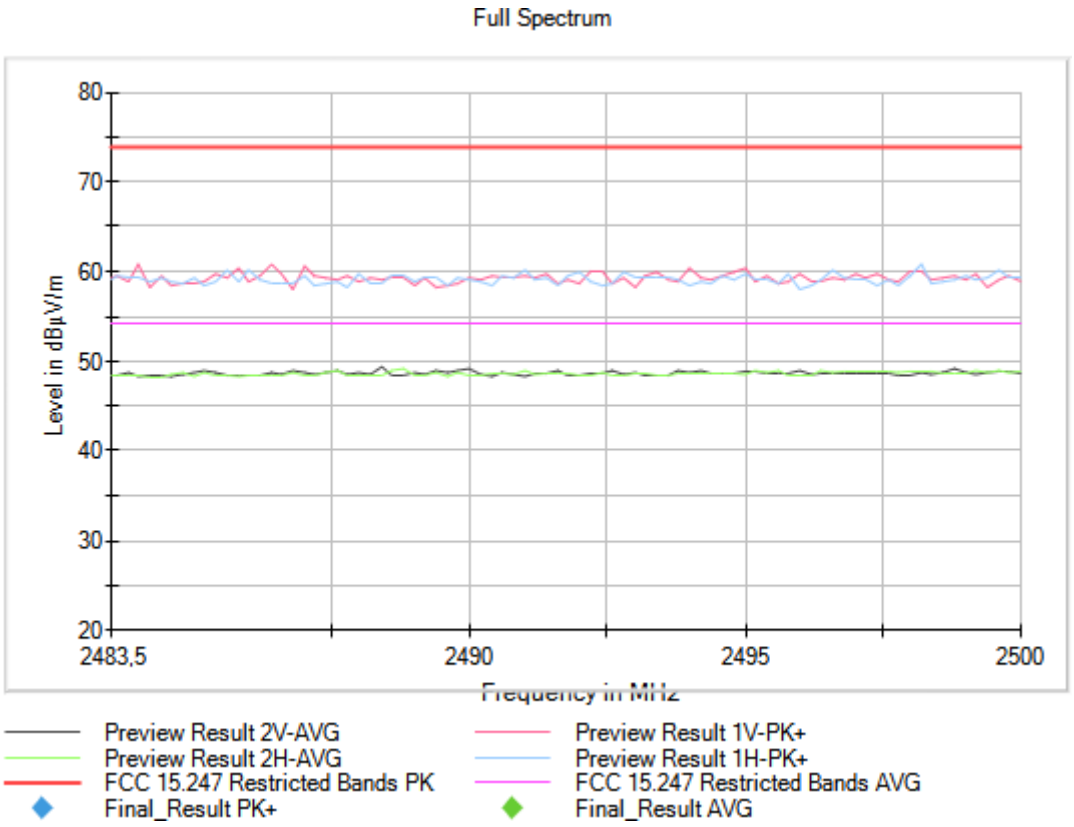
Frequency (MHz) = 2462.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11b (DSSS 1 Mbit/s), Frequency Range (GHz) = [1, 3], Number of Transmission Chains = 1

Plots:



Full Spectrum




Full Spectrum
80
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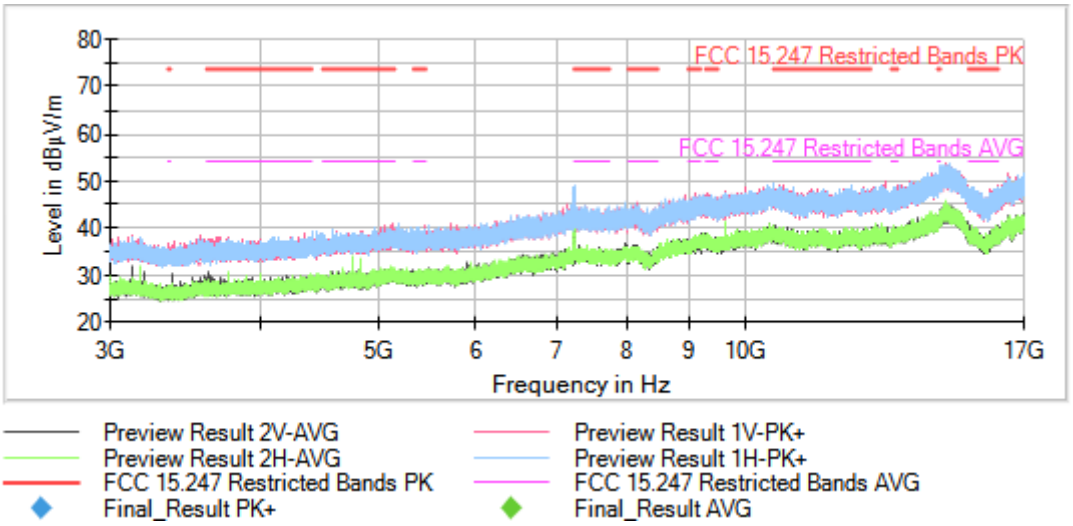
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 Restricted Bands PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

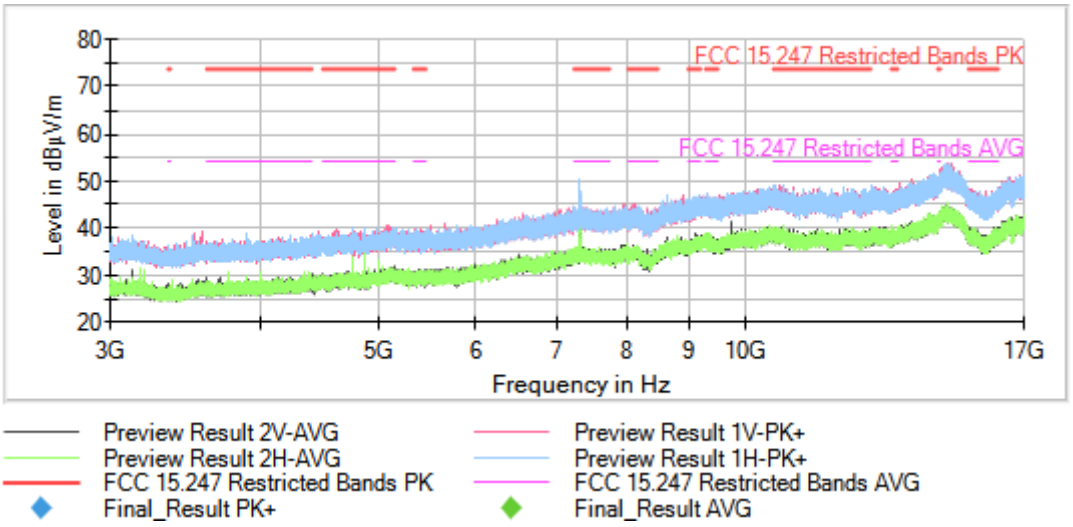
Frequency (MHz) = 2412.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11b (DSSS 1 Mbit/s), Frequency Range (GHz) = [3, 17], Number of Transmission Chains = 1

Plots:



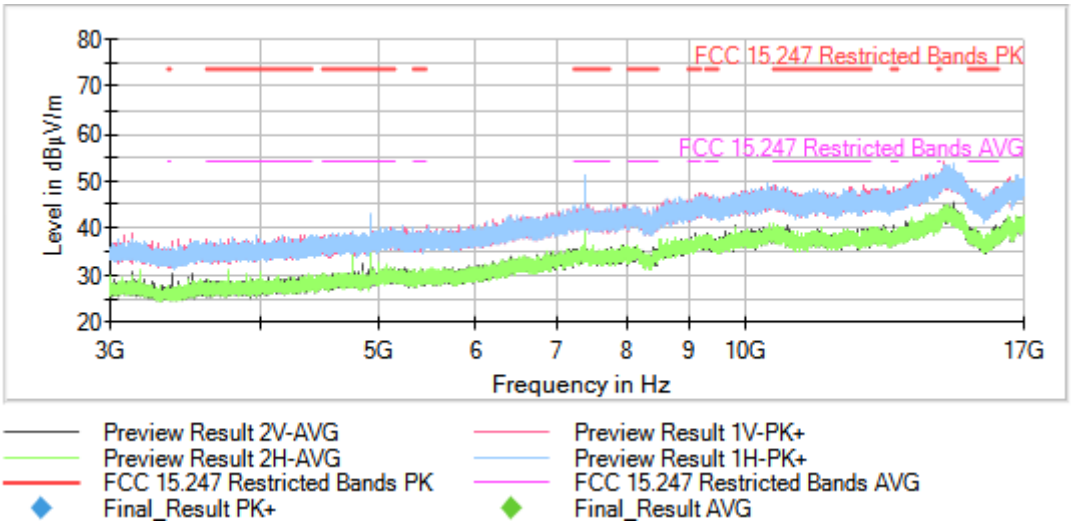
Frequency (MHz) = 2437.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11b (DSSS 1 Mbit/s), Frequency Range (GHz) = [3, 17], Number of Transmission Chains = 1

Plots:



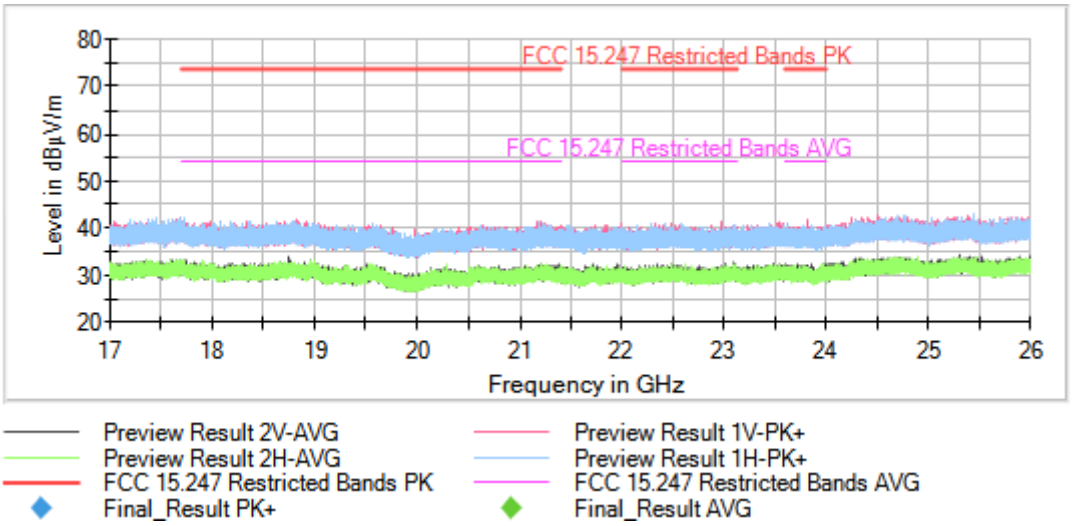
Frequency (MHz) = 2462.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11b (DSSS 1 Mbit/s), Frequency Range (GHz) = [3, 17], Number of Transmission Chains = 1

Plots:



Equipment Type: Digital Transmission System (DTS), Modulation: 802.11b (DSSS 1 Mbit/s), Frequency Range (GHz) = [17, 26], Number of Transmission Chains = 1

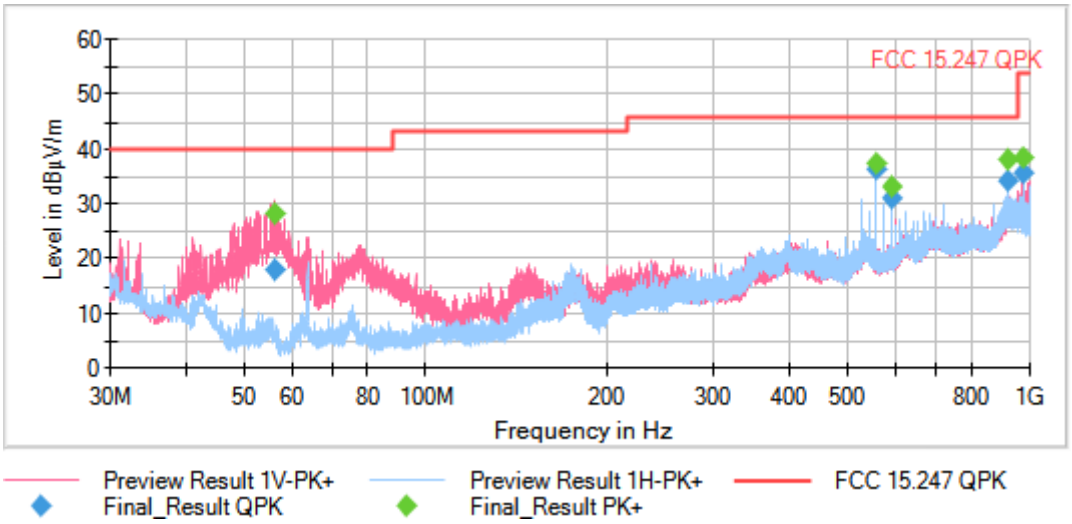
Plots:



This plot is valid for Low, Middle and High Channels.

Equipment Type: Digital Transmission System (DTS), Modulation: 802.11g (OFDM 6 Mbit/s), Frequency Range (GHz) = [0.03, 1], Number of Transmission Chains = 1

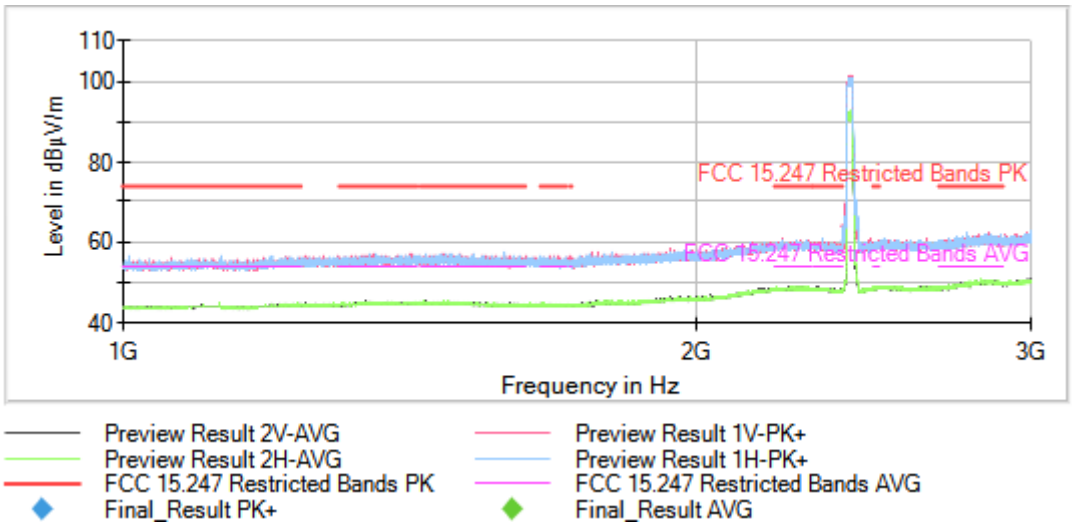
Plots:



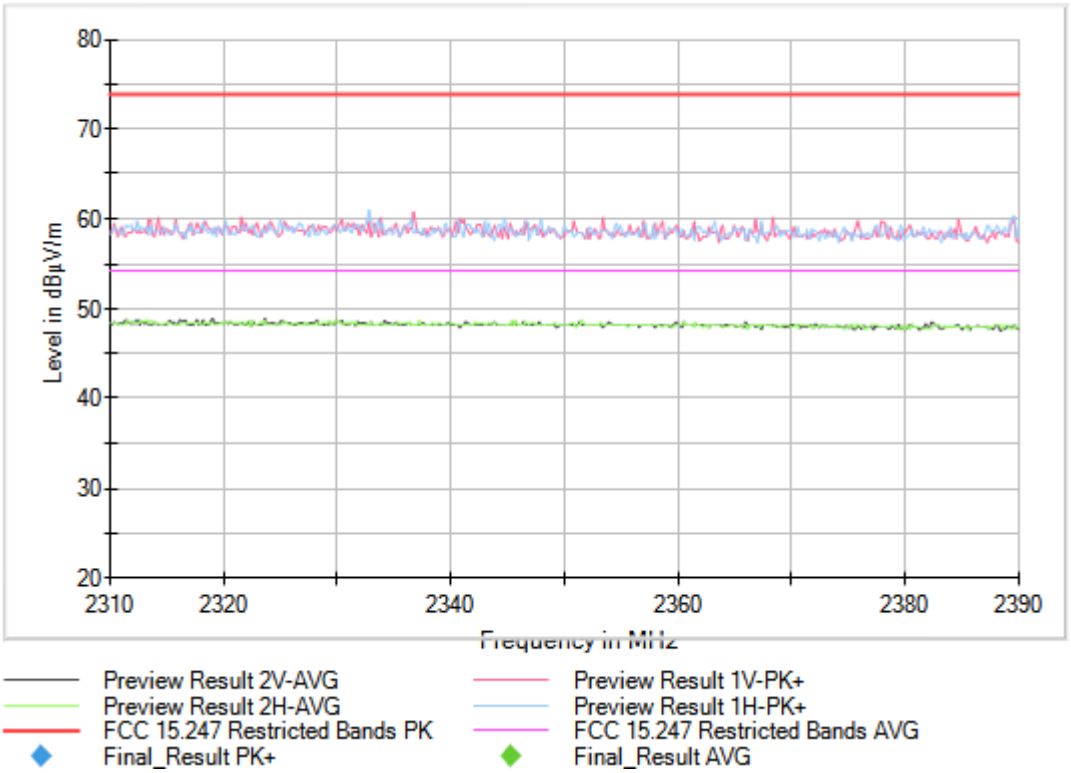
This plot is valid for Low, Middle and High Channels.

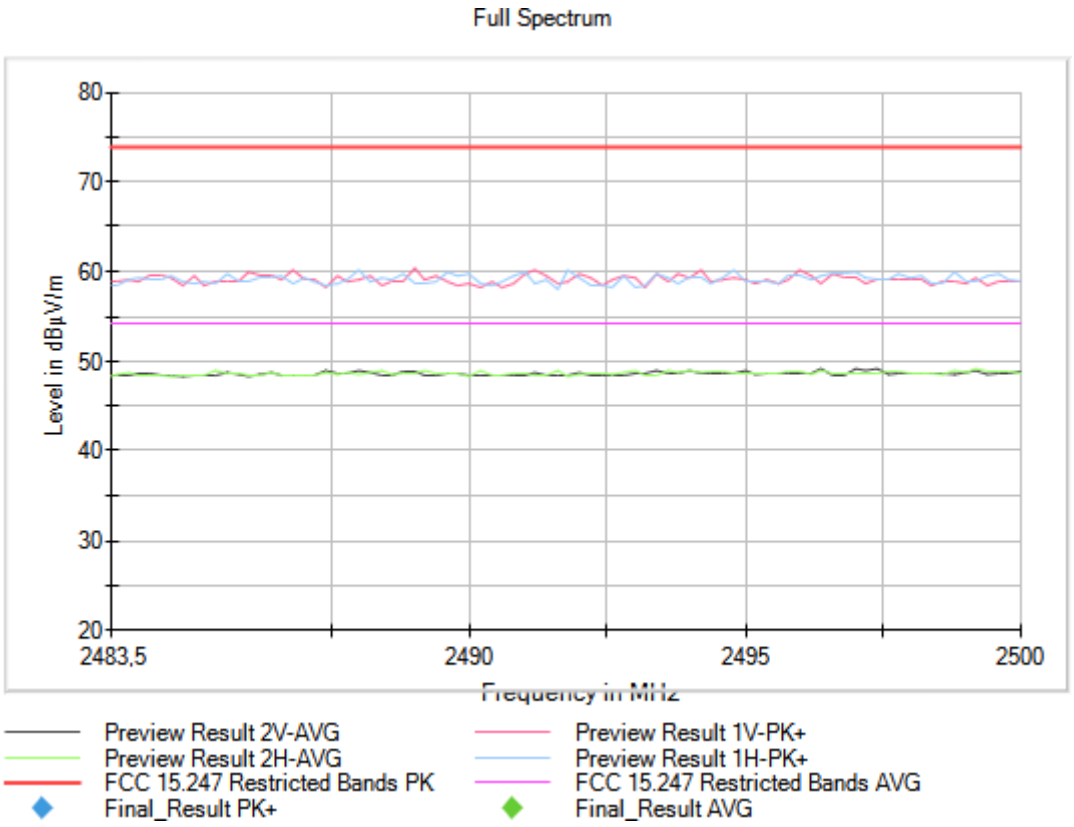
Frequency (MHz) = 2412.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11g (OFDM 6 Mbit/s), Frequency Range (GHz) = [1, 3], Number of Transmission Chains = 1

Plots:



Full Spectrum




Full Spectrum
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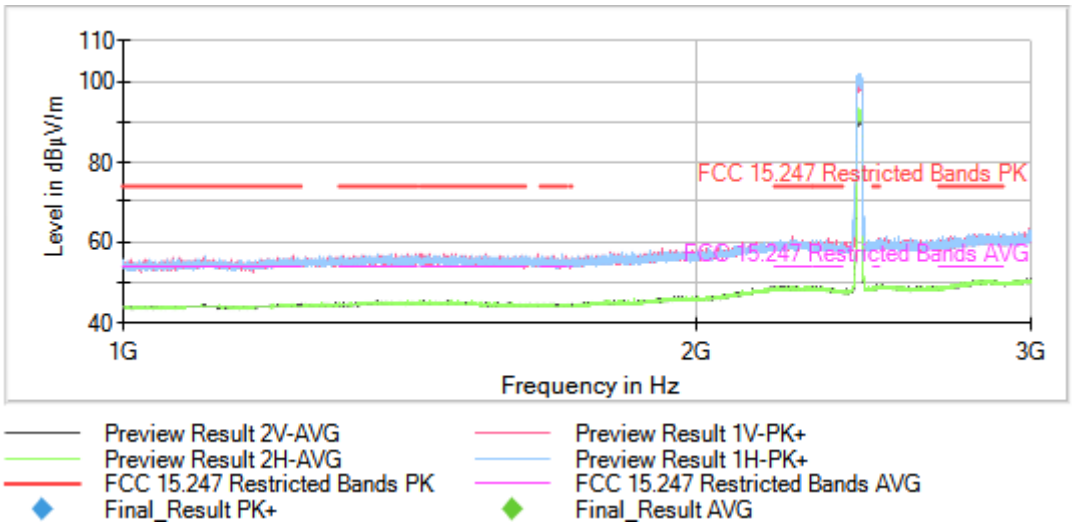
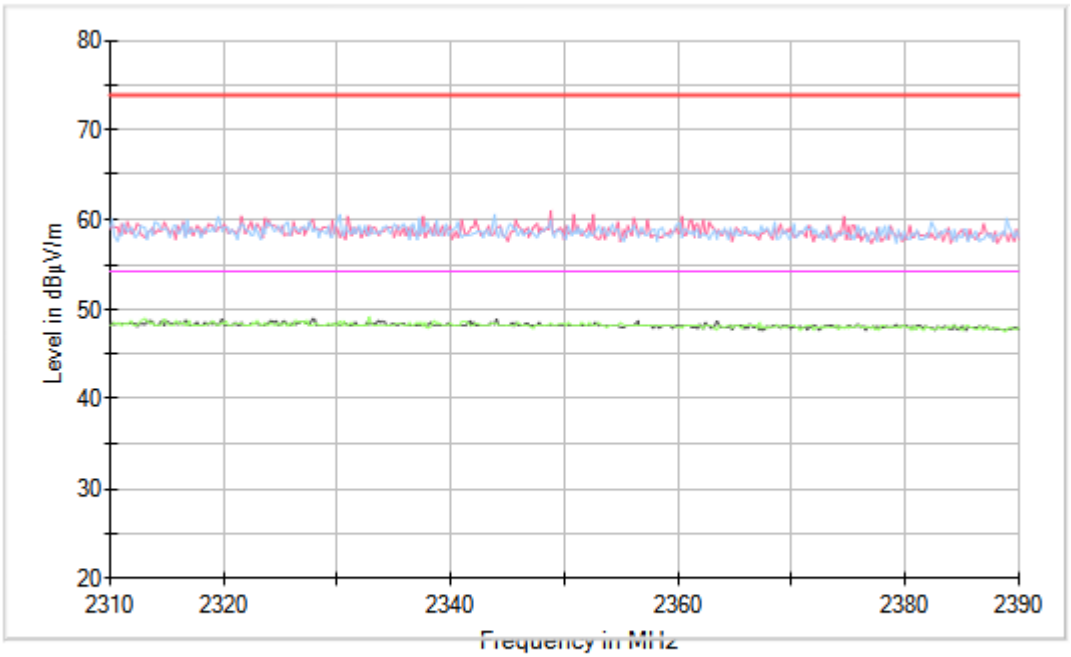
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 Restricted Bands PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

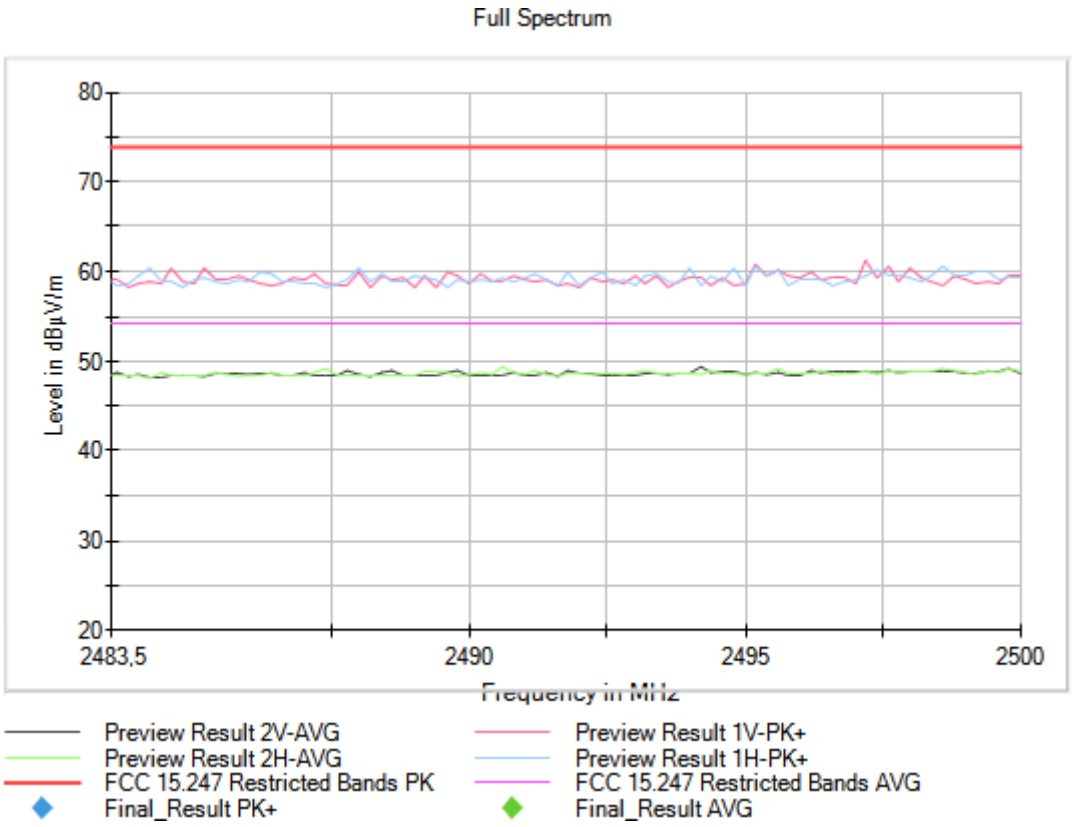
Frequency (MHz) = 2437.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11g (OFDM 6 Mbit/s), Frequency Range (GHz) = [1, 3], Number of Transmission Chains = 1

Plots:



Full Spectrum




Full Spectrum
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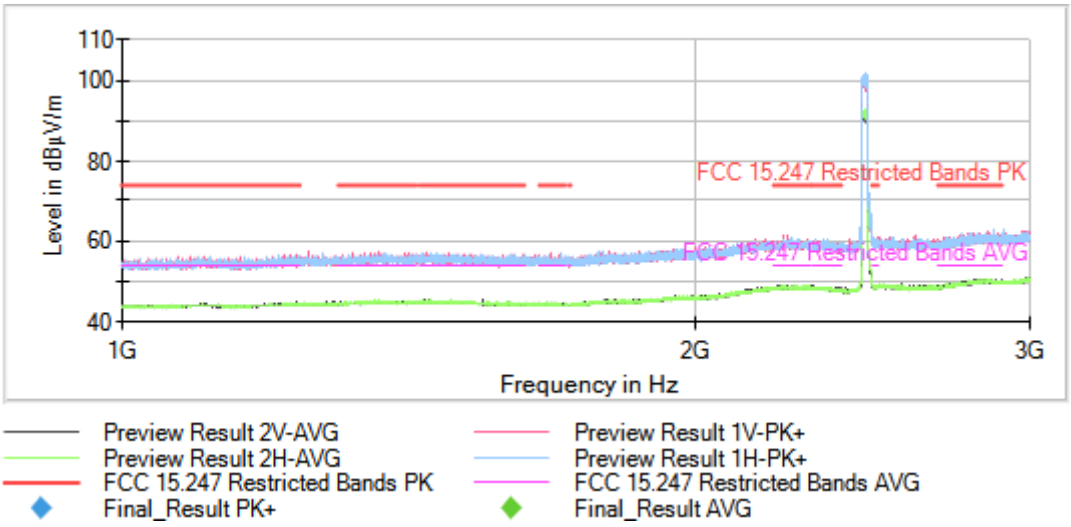
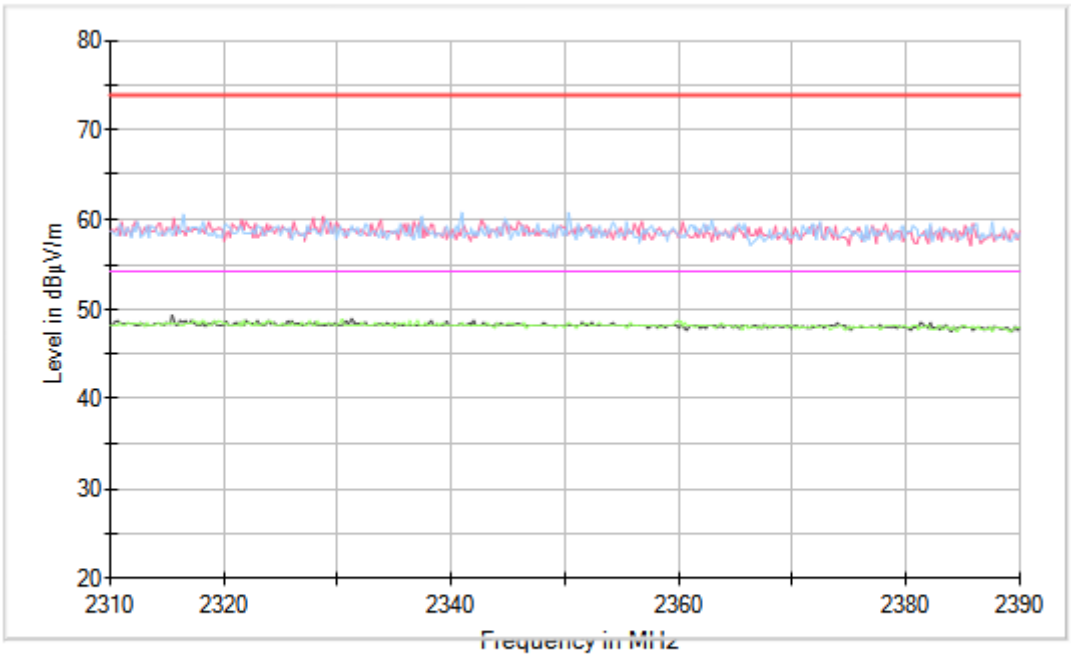
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 Restricted Bands PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

Frequency (MHz) = 2462.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11g (OFDM 6 Mbit/s), Frequency Range (GHz) = [1, 3], Number of Transmission Chains = 1

Plots:



Full Spectrum



Full Spectrum
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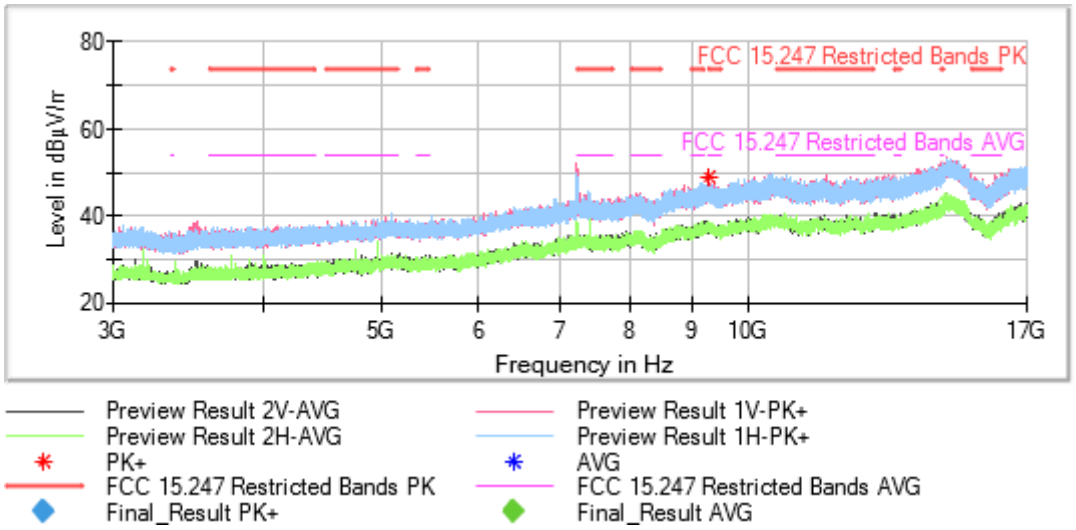
30
20
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 Restricted Bands PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

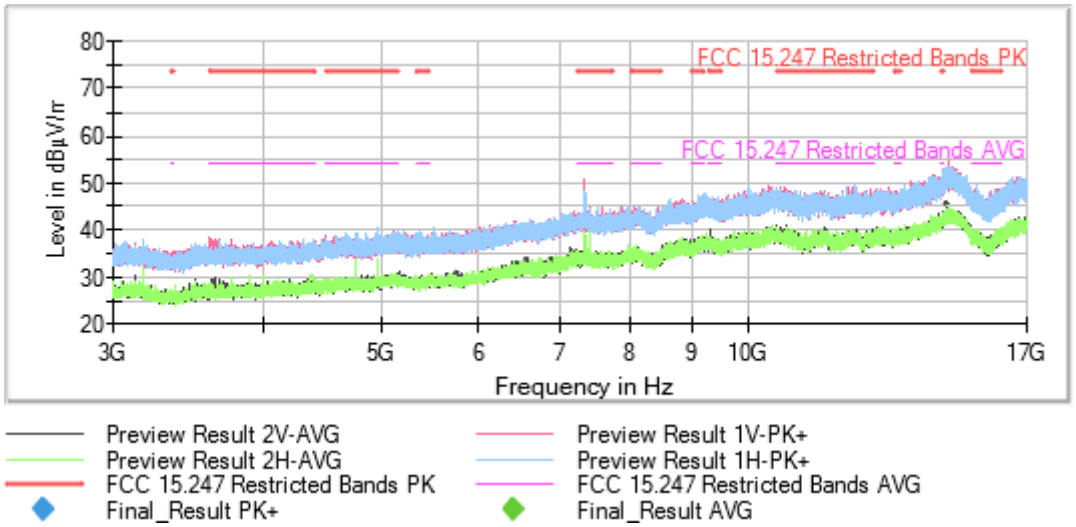
Frequency (MHz) = 2412.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11g (OFDM 6 Mbit/s), Frequency Range (GHz) = [3, 17], Number of Transmission Chains = 1, Active Port: 1

Plots:



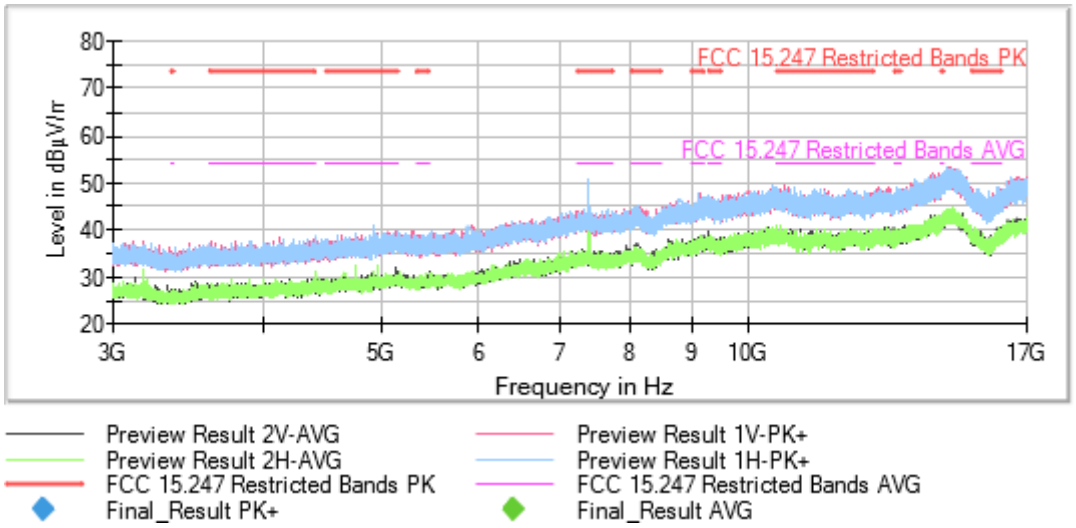
Frequency (MHz) = 2437.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11g (OFDM 6 Mbit/s), Frequency Range (GHz) = [3, 17], Number of Transmission Chains = 1, Active Port: 1

Plots:



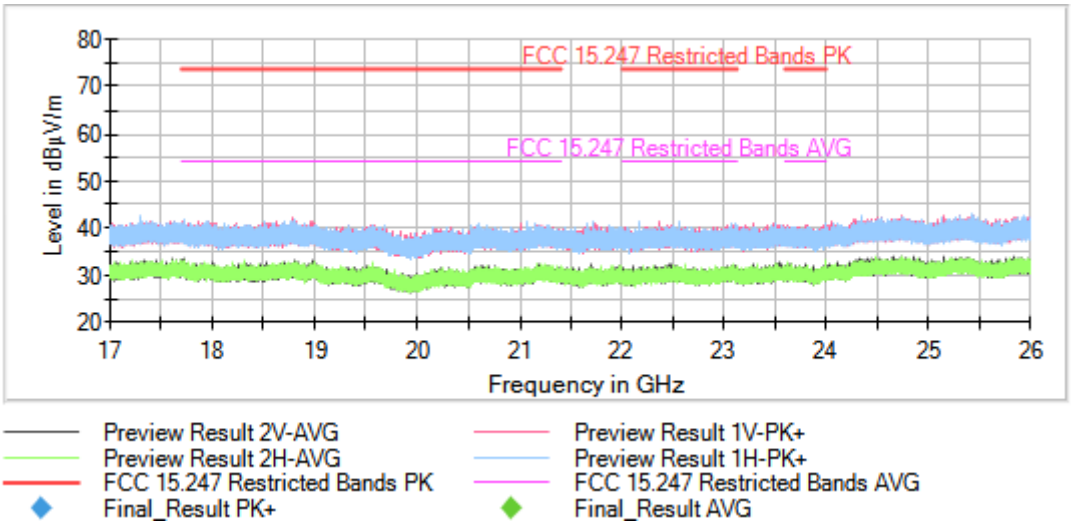
Frequency (MHz) = 2462.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11g (OFDM 6 Mbit/s), Frequency Range (GHz) = [3, 17], Number of Transmission Chains = 1, Active Port: 1

Plots:



Equipment Type: Digital Transmission System (DTS), Modulation: 802.11g (OFDM 6 Mbit/s), Frequency Range (GHz) = [17, 26], Number of Transmission Chains = 1

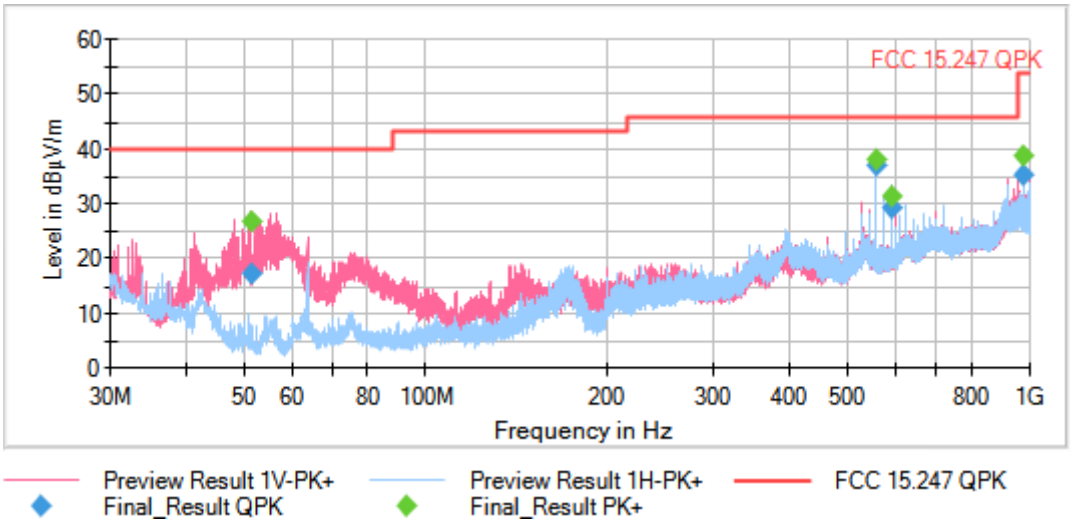
Plots:



This plot is valid for Low, Middle and High Channels.

Equipment Type: Digital Transmission System (DTS), Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Frequency Range (GHz) = [0.03, 1], Number of Transmission Chains = 1

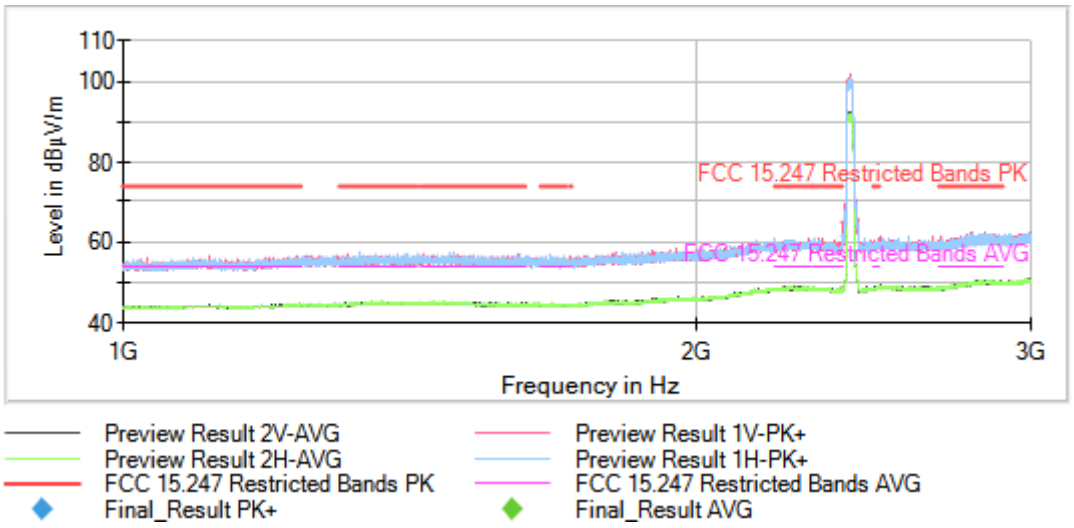
Plots:



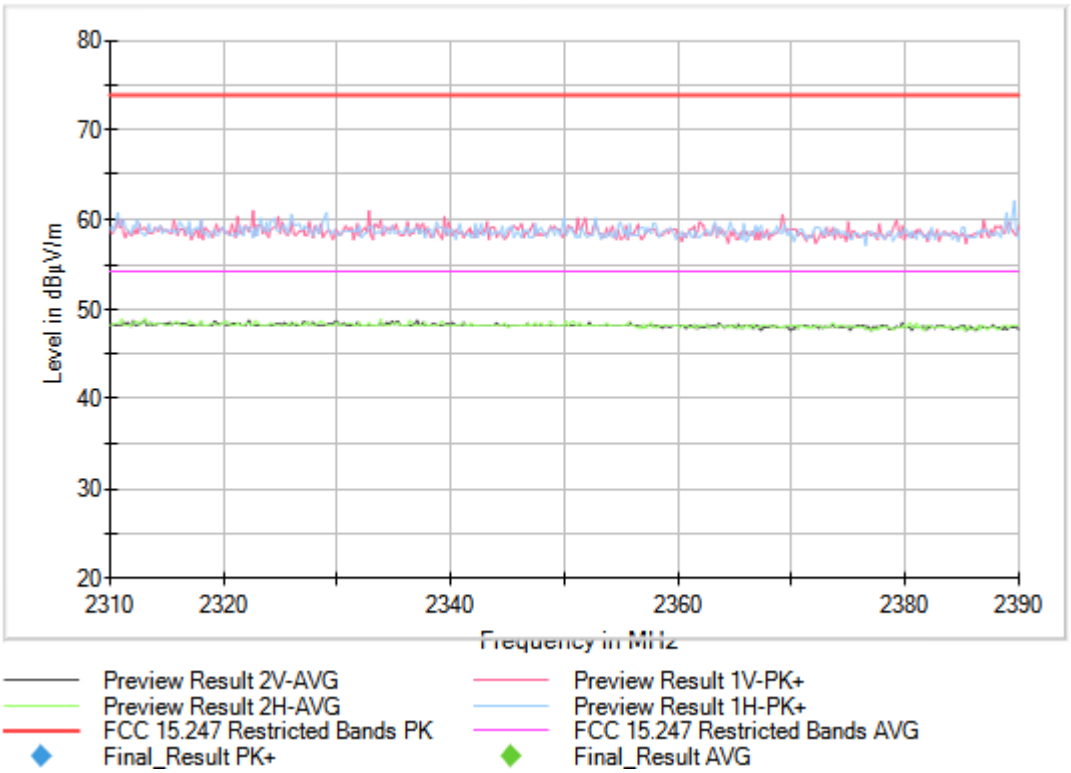
This plot is valid for Low, Middle and High Channels.

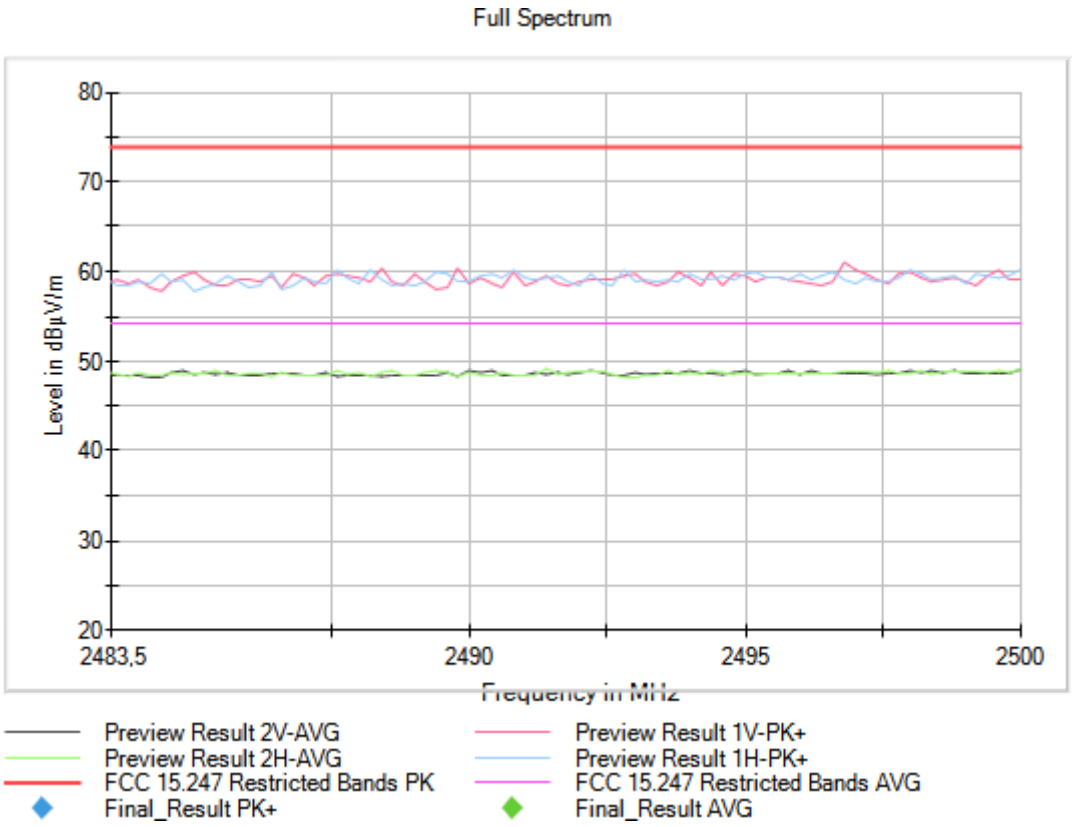
Frequency (MHz) = 2412.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Frequency Range (GHz) = [1, 3], Number of Transmission Chains = 1

Plots:



Full Spectrum




Full Spectrum
80
70
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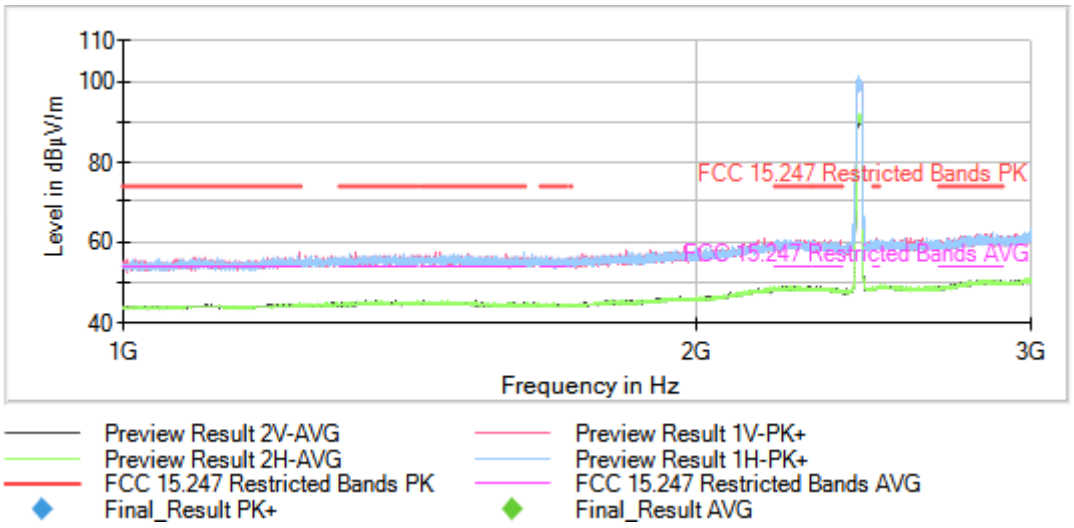
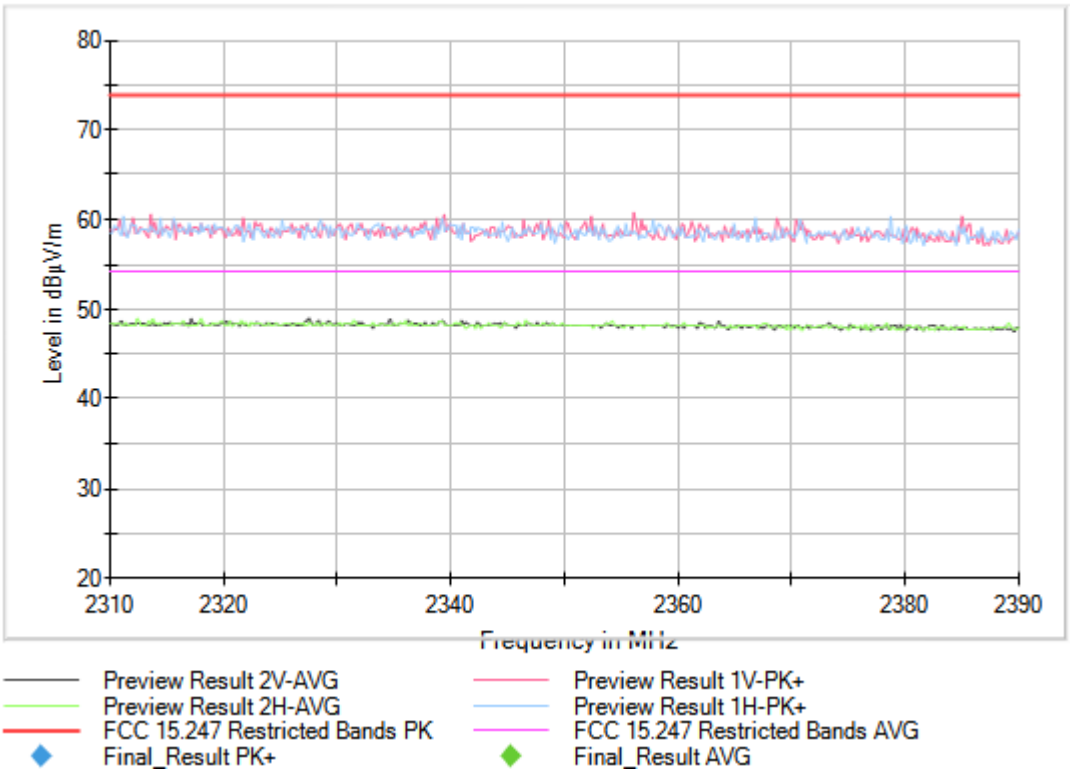
30
20
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 Restricted Bands PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

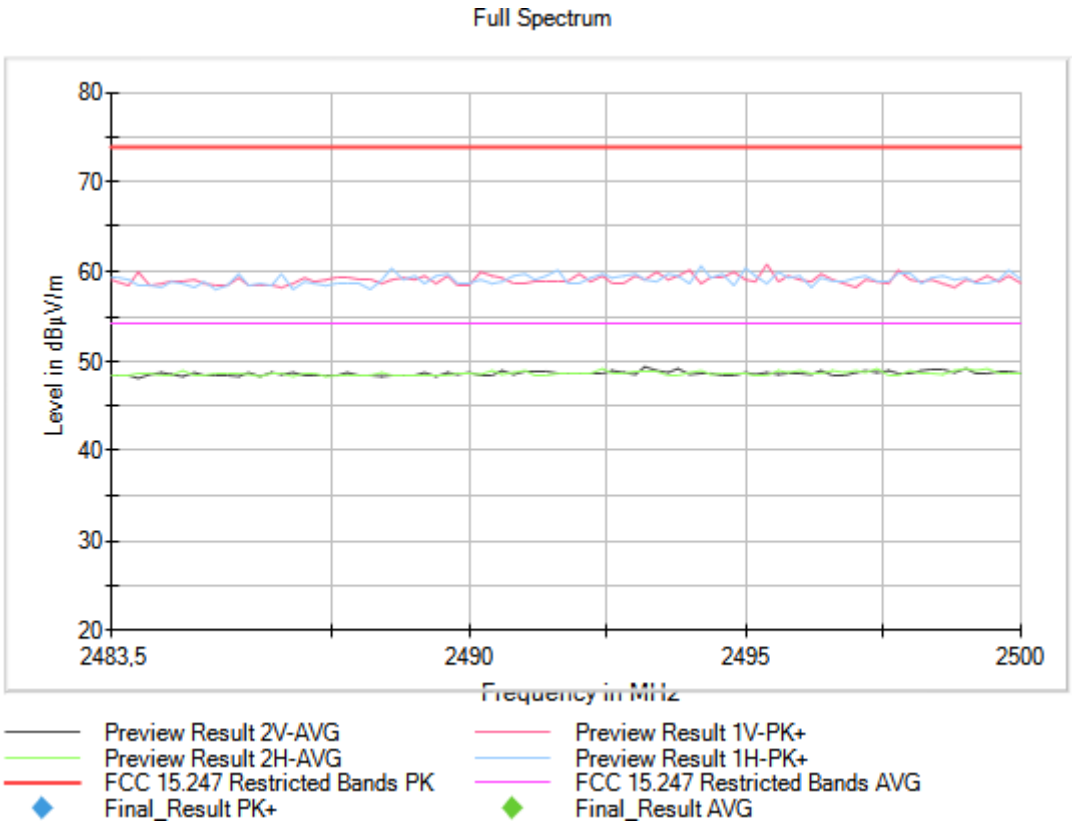
Frequency (MHz) = 2437.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Frequency Range (GHz) = [1, 3], Number of Transmission Chains = 1

Plots:



Full Spectrum




Full Spectrum
80
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30
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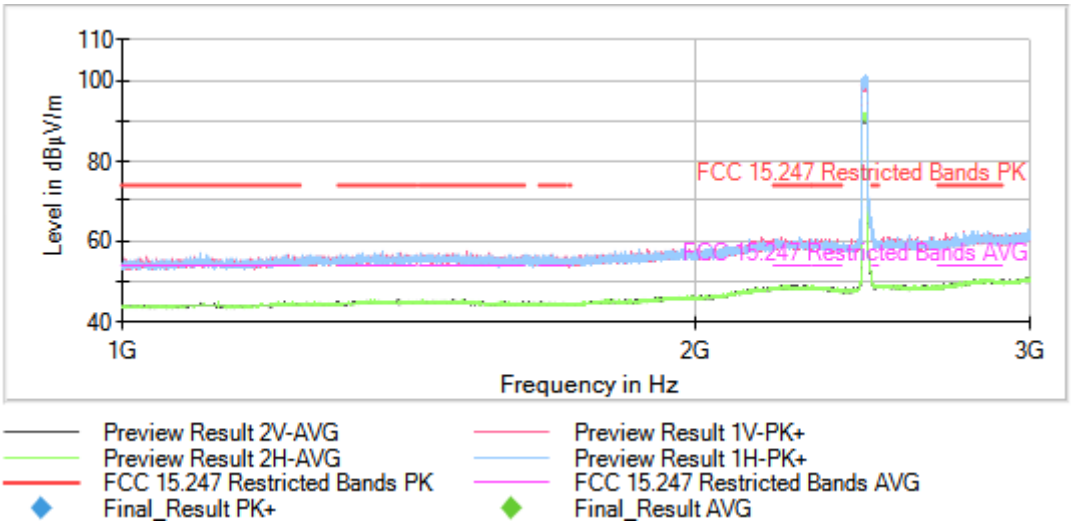
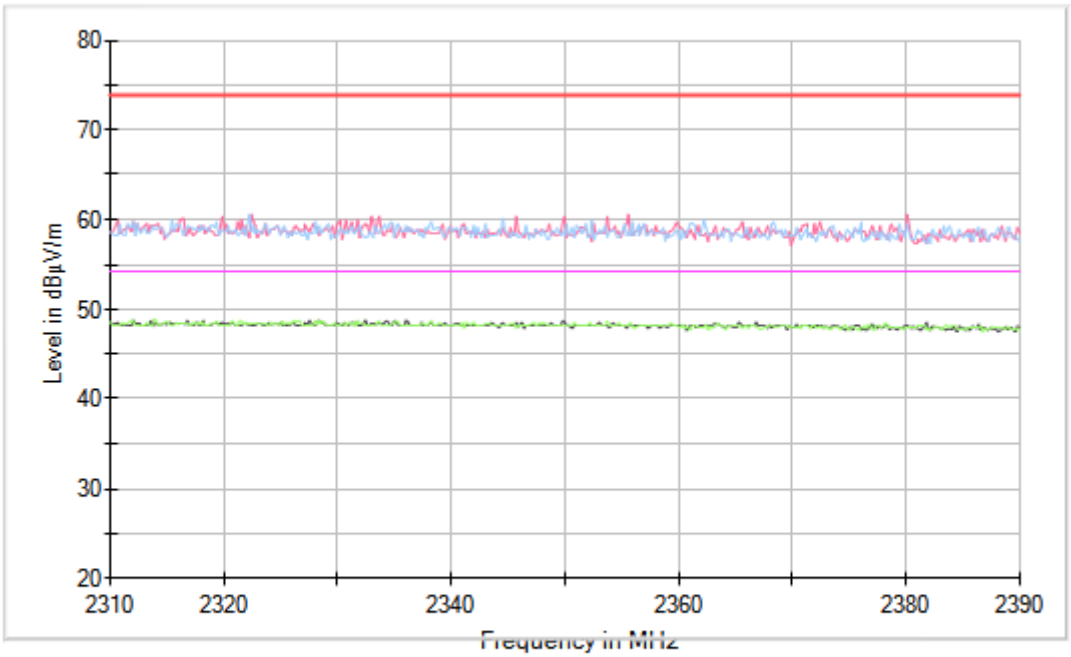
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 Restricted Bands PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

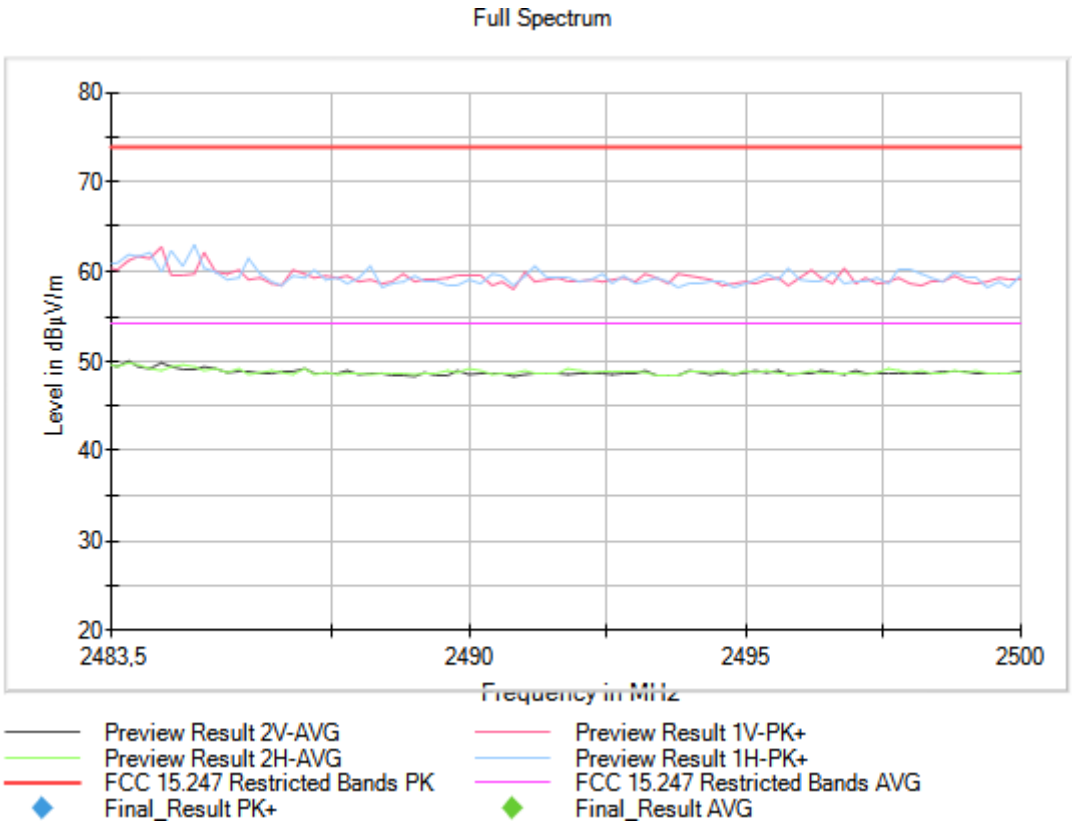
Frequency (MHz) = 2462.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Frequency Range (GHz) = [1, 3], Number of Transmission Chains = 1

Plots:



Full Spectrum




Full Spectrum
80
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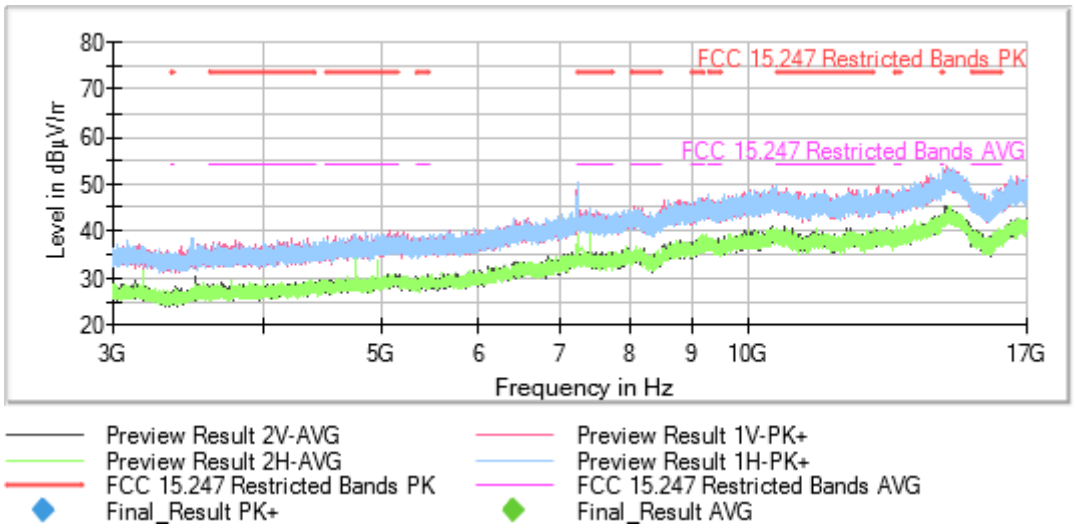
30
20
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 Restricted Bands PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

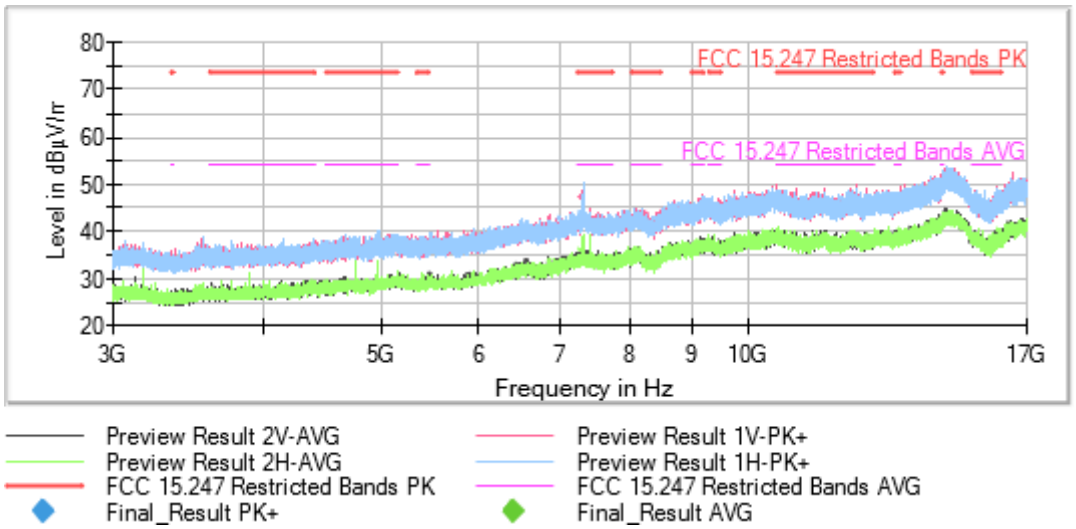
Frequency (MHz) = 2412.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Frequency Range (GHz) = [3, 17], Number of Transmission Chains = 1, Active Port: 1

Plots:



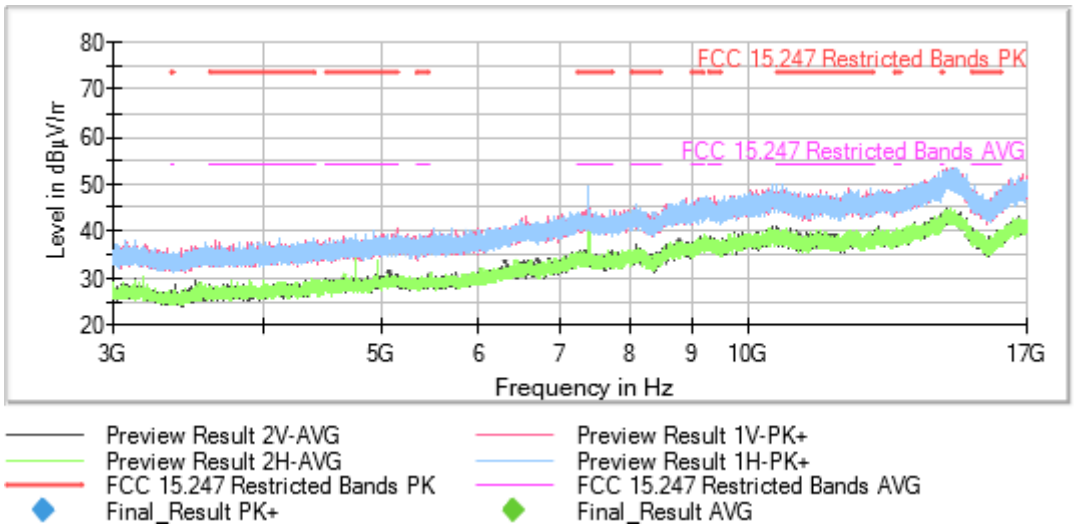
Frequency (MHz) = 2437.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Frequency Range (GHz) = [3, 17], Number of Transmission Chains = 1, Active Port: 1

Plots:



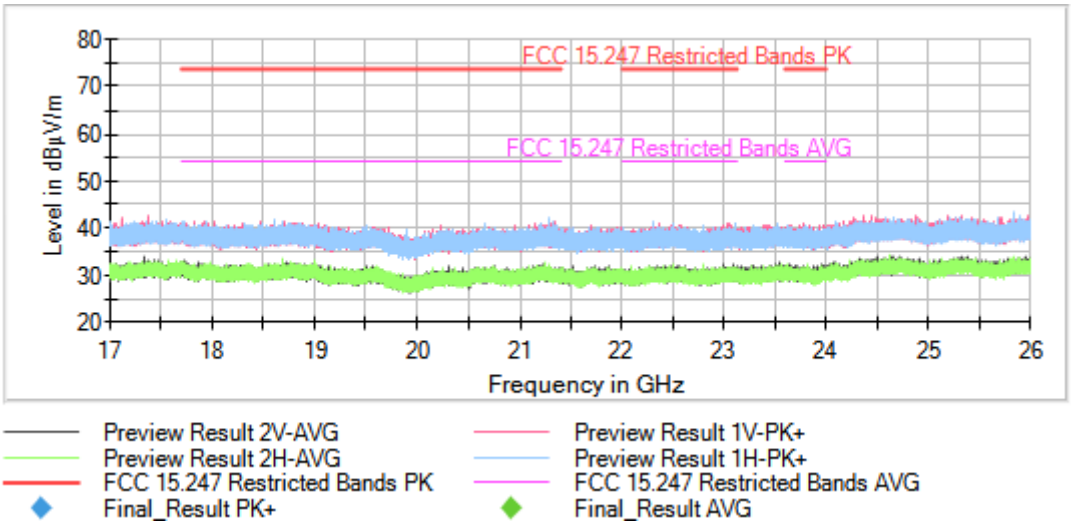
Frequency (MHz) = 2462.00000, Equipment Type: Digital Transmission System (DTS), Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Frequency Range (GHz) = [3, 17], Number of Transmission Chains = 1, Active Port: 1

Plots:



Equipment Type: Digital Transmission System (DTS), Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s), Frequency Range (GHz) = [17, 26], Number of Transmission Chains = 1

Plots:



This plot is valid for Low, Middle and High Channels.