

## RSS-247 5.5 / 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)/RSS-Gen):

Frequency Range (MHz)	Field strength ( $\mu\text{V}/\text{m}$ )	Field strength ( $\text{dB}\mu\text{V}/\text{m}$ )	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.

RSS-247: Attenuation below the general field strength limits specified in RSS-Gen is not required.

### Results

Modulation: BTLE 4.2 (GFSK 1 Mbit/s)

#### Frequency range 30 MHz – 1 GHz:

No spurious frequencies detected at less than 20 dB below the limit.

#### Frequency range 1 GHz – 26 GHz:

The results below 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  $\text{dB}\mu\text{V}/\text{m}$  at 3 m) are measured with average detector for compliance checking with the average limit.

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

Freq (MHz)	Freq Rng (GHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
2402.00000	[3, 17]	4804.0400	43.43	V	PK
		7205.0400	54.57	H	PK
		9608.7000	50.49	V	PK
2440.00000	[3, 17]	4879.6400	43.79	H	PK
		7319.1400	53.22	V	PK
		9758.9200	49.44	V	PK
2480.00000	[3, 17]	4959.5800	45.72	V	PK
		7439.4000	56.78	H	PK
			51.30		AVG

**Verdict**

Pass

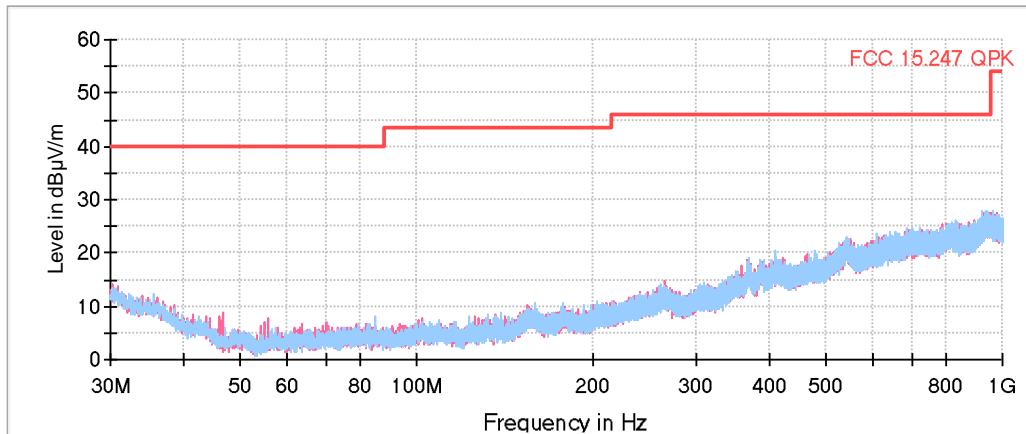
**Attachments**

Spectrum Analyzer Parameters:

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 30 MHz - 1 GHz	30,312 kHz	PK+	100 kHz	1 s	0 dB
Receiver: [ESW 44] 1 GHz - 3 GHz	30,769 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
Receiver: [ESW 44] 3 GHz - 17 GHz	140 kHz	PK+ ; AVG	1 MHz	1 s	30 dB
Receiver: [ESW 44] 17 GHz - 26 GHz	300 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency MHz = 2402.00000      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 4.2 (GFSK 1 Mbit/s)      Frequency Range GHz = [0.03, 1]  
 Number of Transmission Chains = 1      Measurement Point = 1  
 Active Port = 1

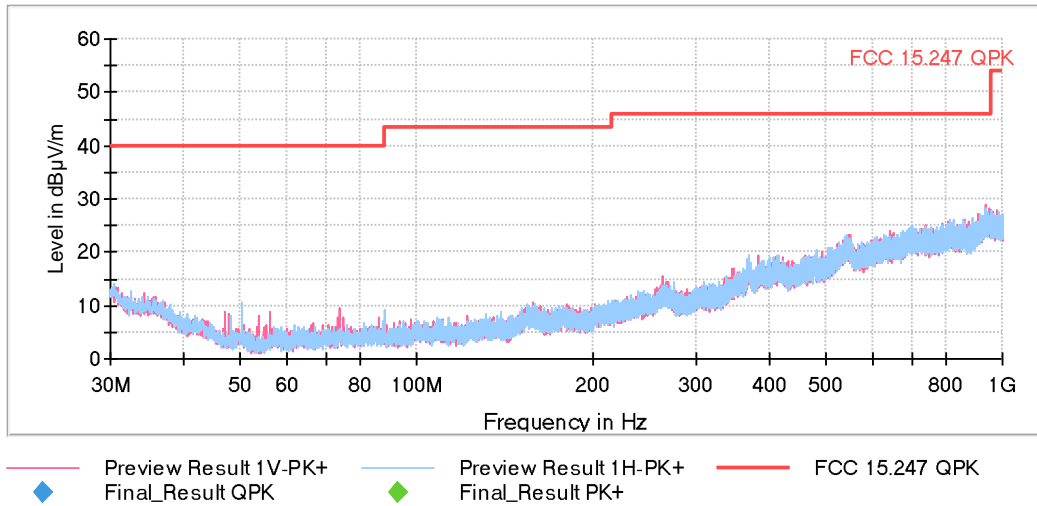
**Plots:**



◆ Preview Result 1V-PK+      ◆ Preview Result 1H-PK+      — FCC 15.247 QPK  
◆ Final\_Result QPK      ◆ Final\_Result PK+

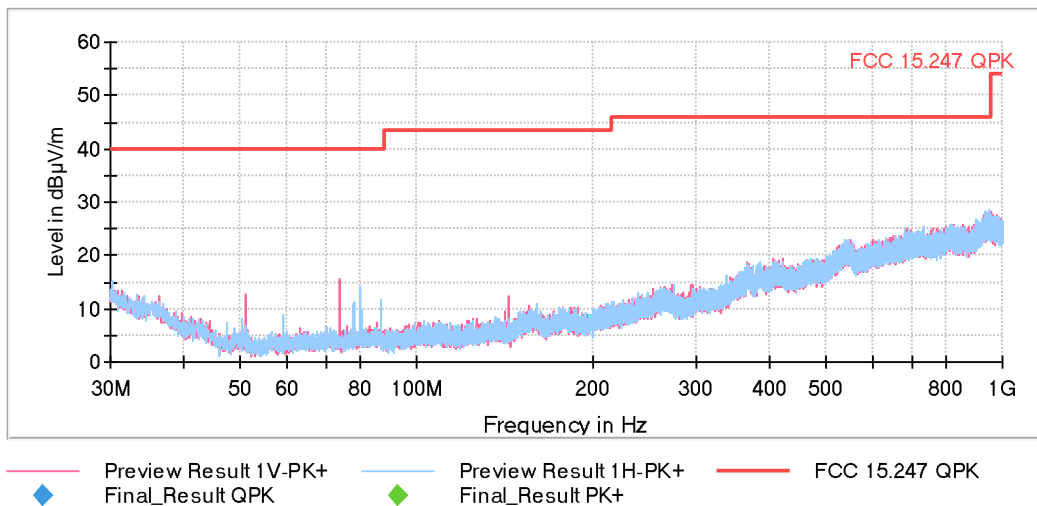
Frequency MHz = 2440.00000      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 4.2 (GFSK 1 Mbit/s)      Frequency Range GHz = [0.03, 1]  
 Number of Transmission Chains = 1      Measurement Point = 1  
 Active Port = 1

**Plots:**



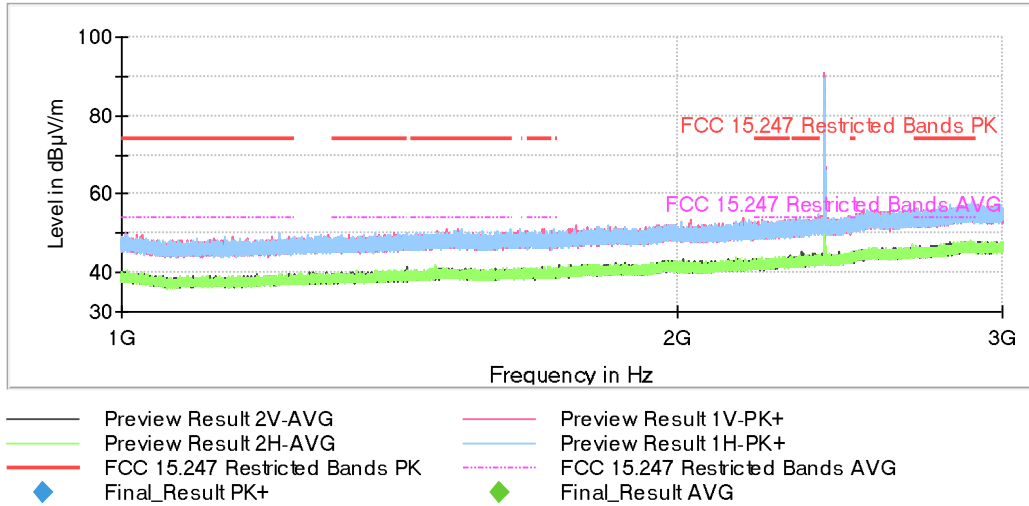
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 Modulation = BTLE 4.2 (GFSK 1 Mbit/s)      Frequency Range GHz = [0.03, 1]  
 Number of Transmission Chains = 1      Measurement Point = 1  
 Active Port = 1

**Plots:**

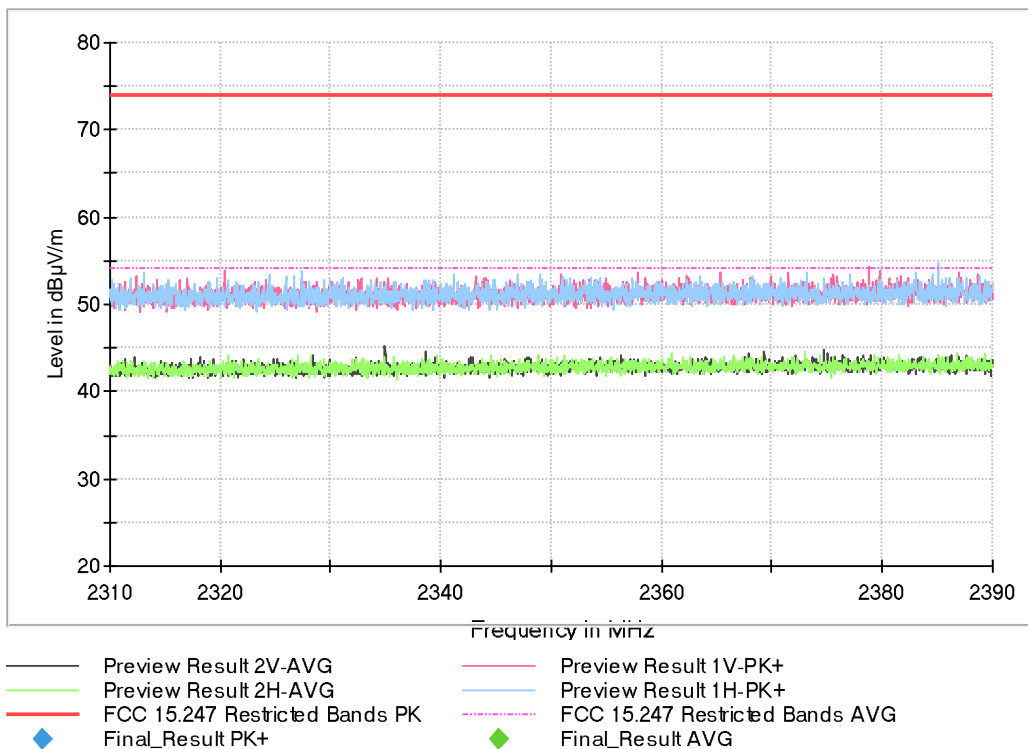


Frequency MHz = 2402.00000      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 4.2 (GFSK 1 Mbit/s)      Frequency Range GHz = [1, 3]  
 Number of Transmission Chains = 1      Measurement Point = 1  
 Active Port = 1

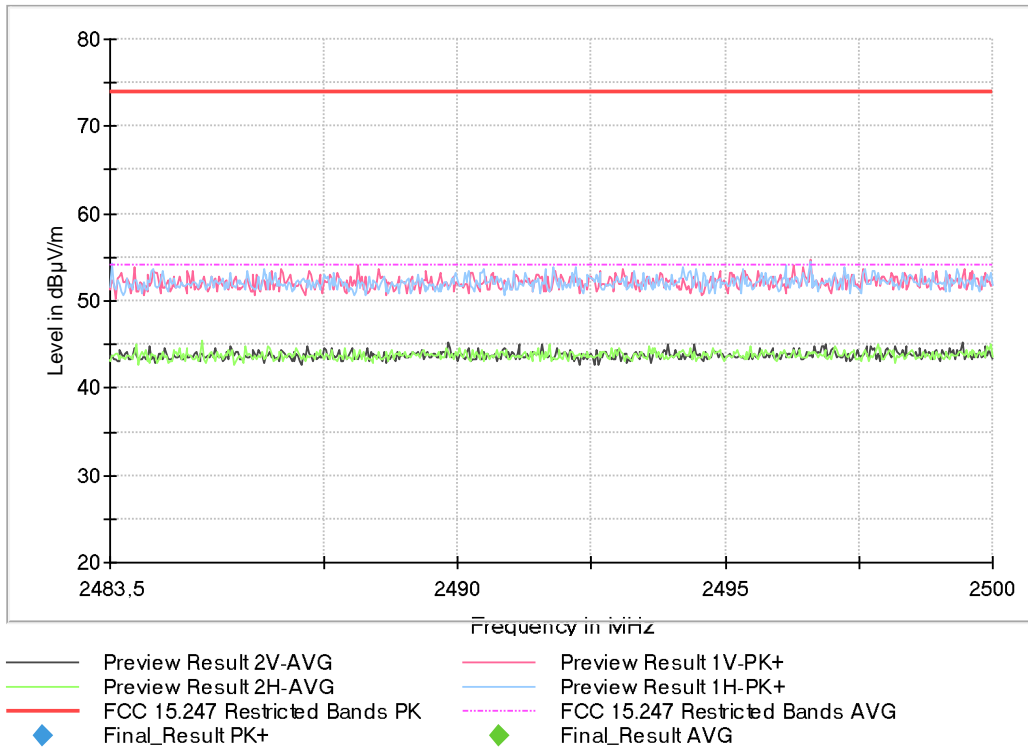
**Plots:**



Full Spectrum

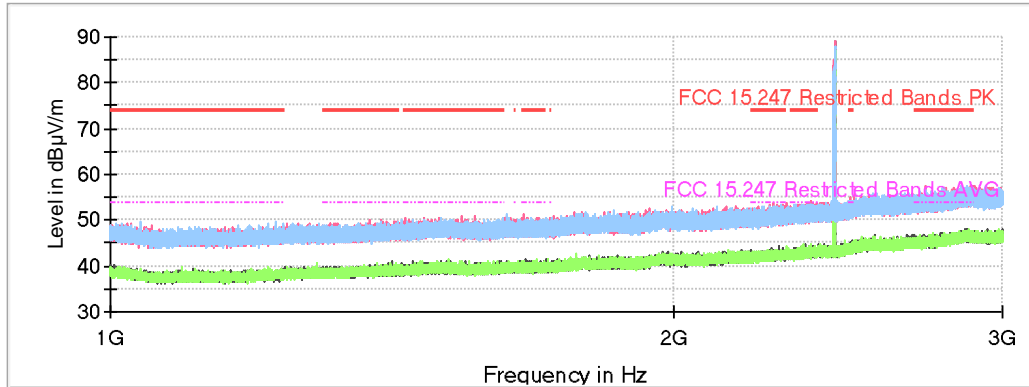


Full Spectrum



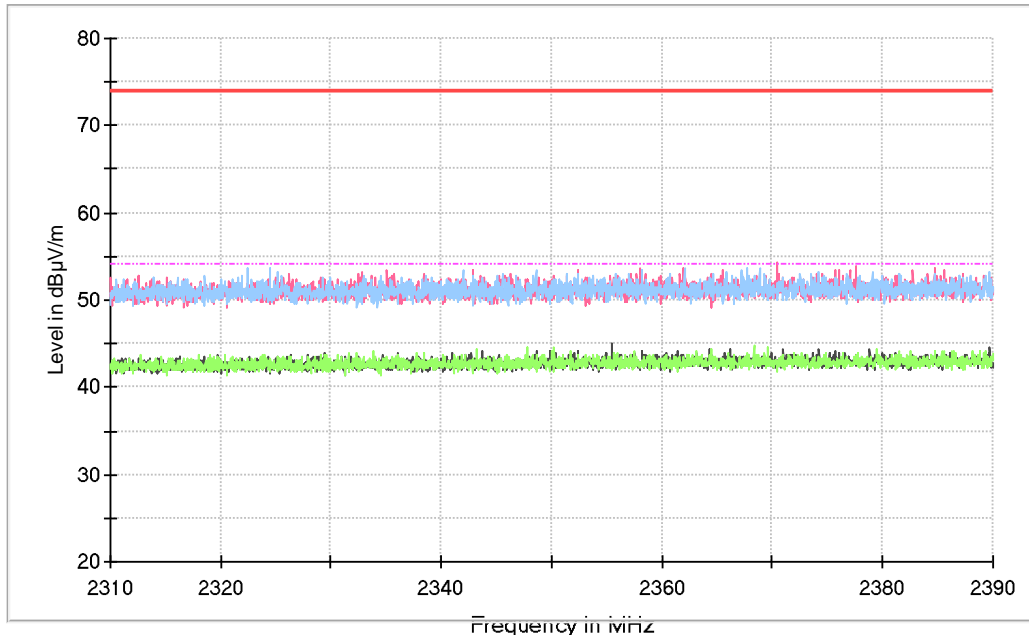
Frequency MHz = 2440.00000      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 4.2 (GFSK 1 Mbit/s)      Frequency Range GHz = [1, 3]  
 Number of Transmission Chains = 1      Measurement Point = 1  
 Active Port = 1

**Plots:**



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

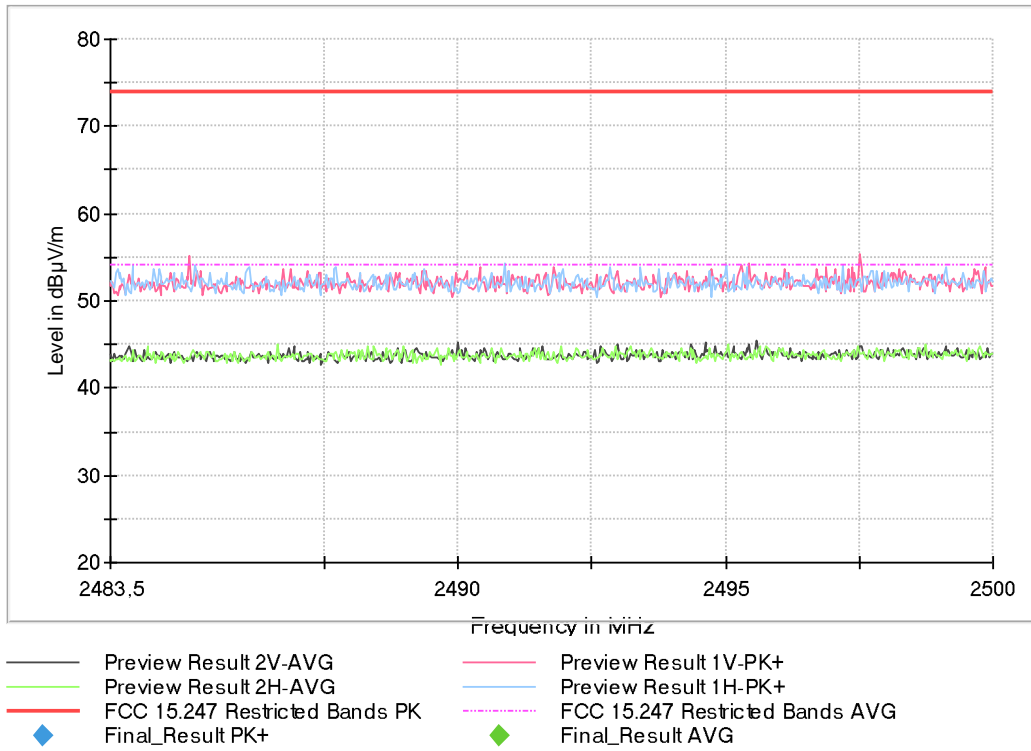
Full Spectrum



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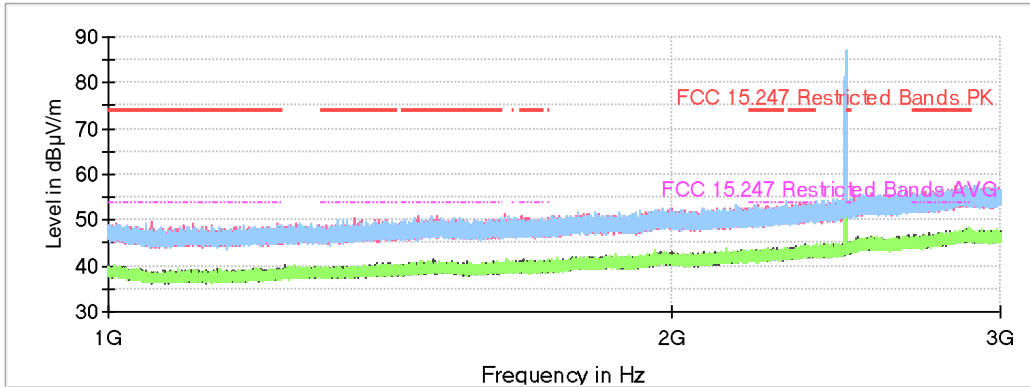


Full Spectrum



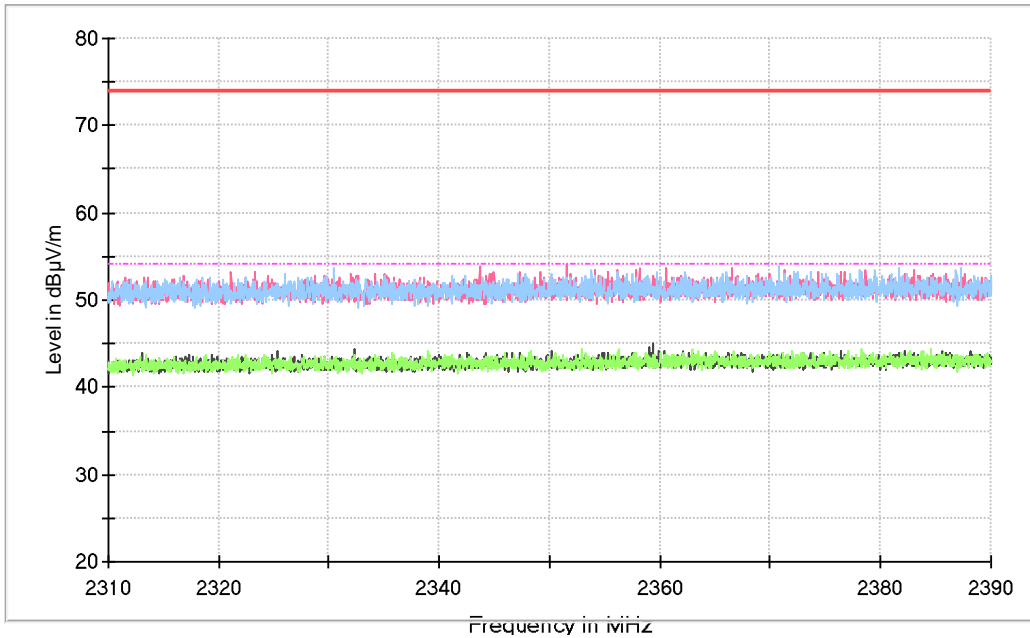
Frequency MHz = 2480.00000      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 4.2 (GFSK 1 Mbit/s)      Frequency Range GHz = [1, 3]  
 Number of Transmission Chains = 1      Measurement Point = 1  
 Active Port = 1

**Plots:**



- 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



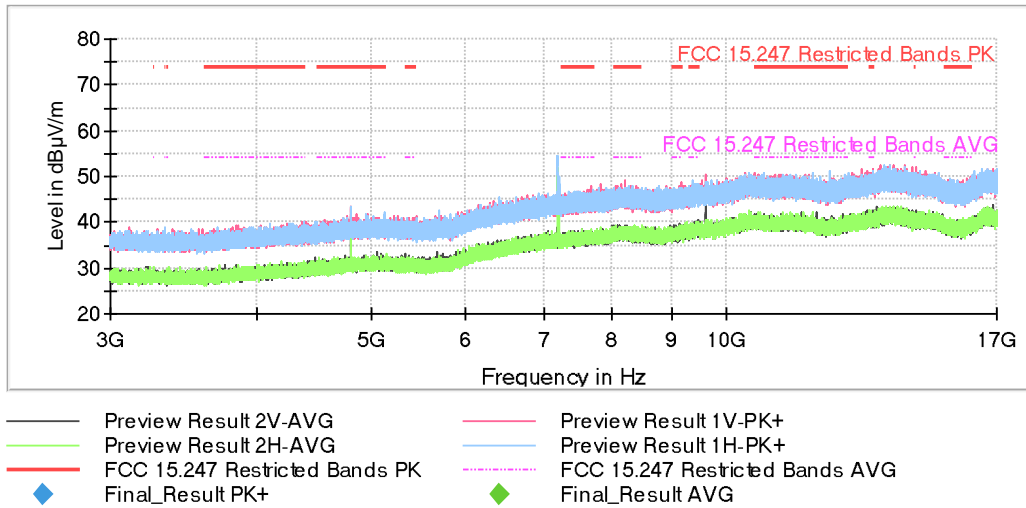
- Preview Result 2V-AVG
- Preview Result 2H-AVG
- FCC 15.247 Restricted Bands PK
- ◆ Final\_Result PK+
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands AVG
- ◆ Final\_Result AVG

Full Spectrum



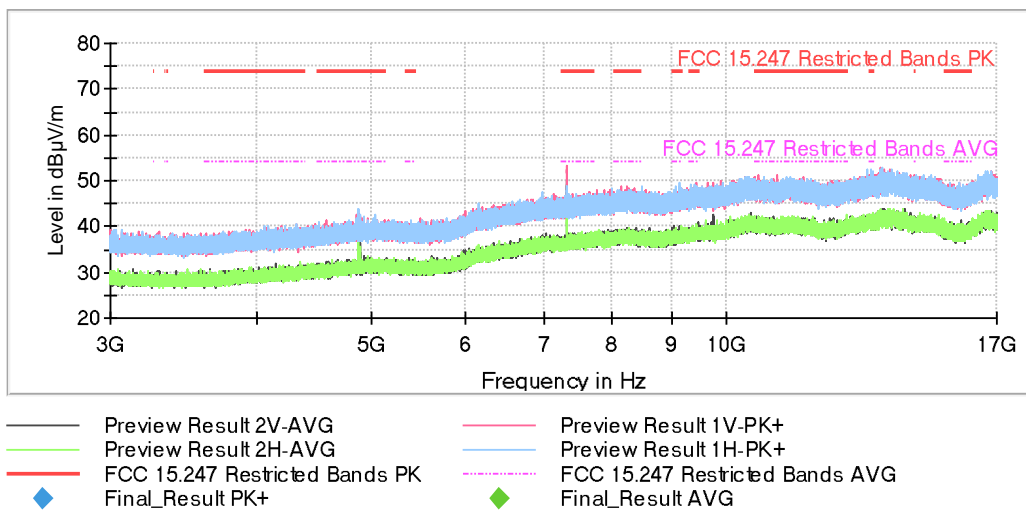
Frequency MHz = 2402.00000      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 4.2 (GFSK 1 Mbit/s)      Frequency Range GHz = [3, 17]  
 Number of Transmission Chains = 1      Measurement Point = 1  
 Active Port = 1

**Plots:**



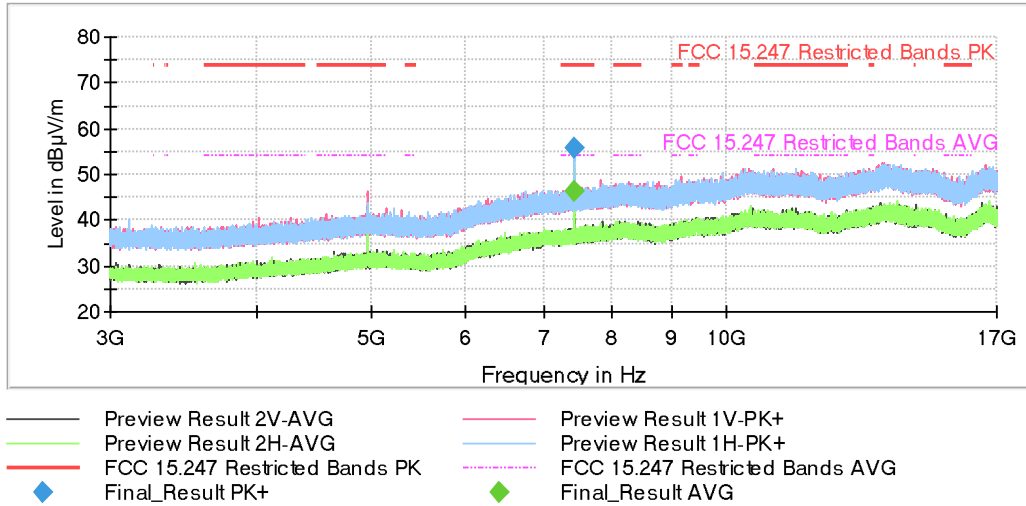
Frequency MHz = 2440.00000      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 4.2 (GFSK 1 Mbit/s)      Frequency Range GHz = [3, 17]  
 Number of Transmission Chains = 1      Measurement Point = 1  
 Active Port = 1

**Plots:**



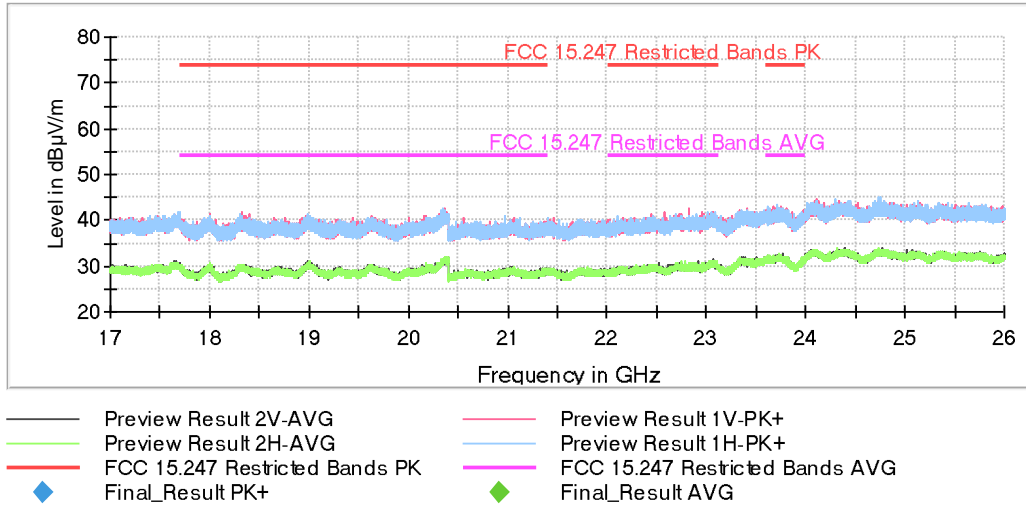
Frequency MHz = 2480.00000      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 4.2 (GFSK 1 Mbit/s)      Frequency Range GHz = [3, 17]  
 Number of Transmission Chains = 1      Measurement Point = 1  
 Active Port = 1

**Plots:**



Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 4.2 (GFSK 1 Mbit/s) Frequency Range GHz = [17, 26]  
 Number of Transmission Chains = 1 Measurement Point = 1  
 Active Port = 1

**Plots:**



This plot is valid for all channels