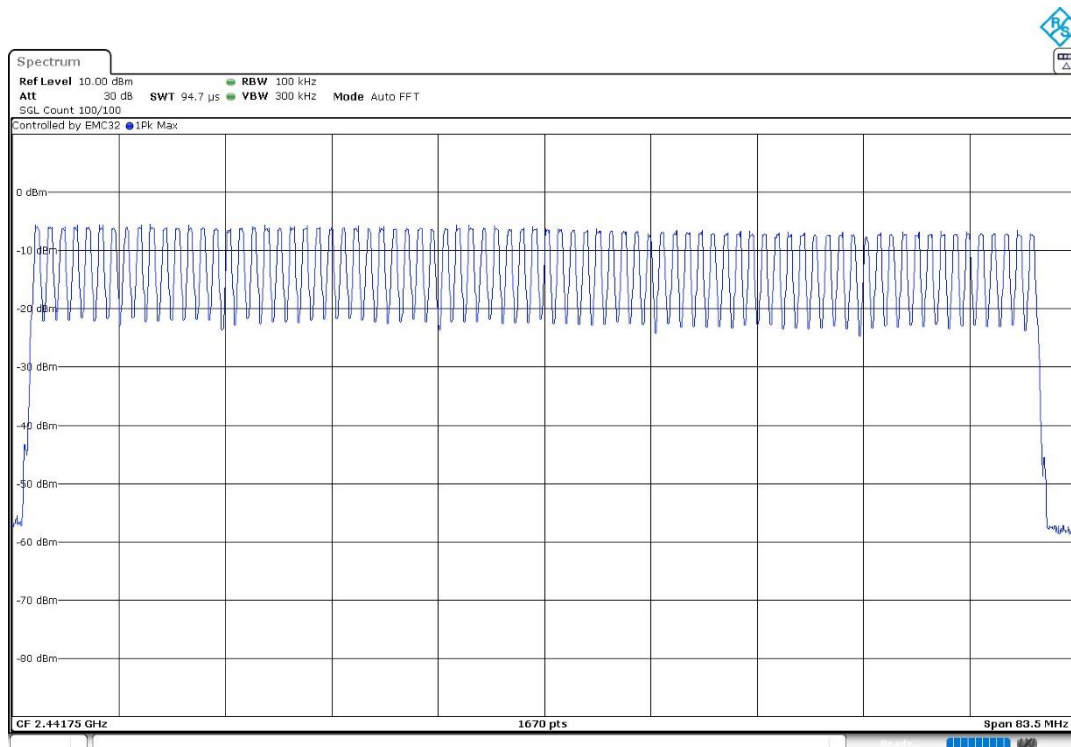
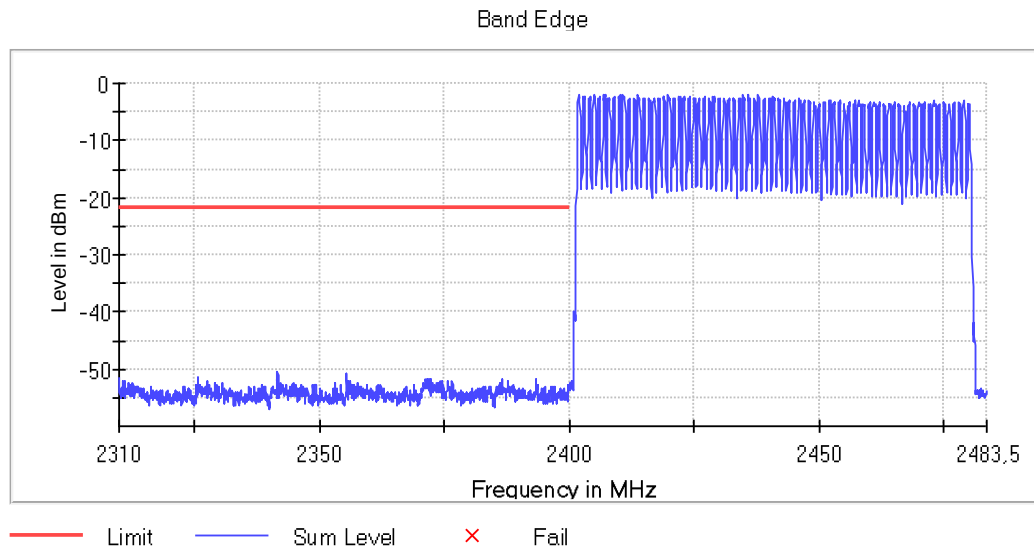


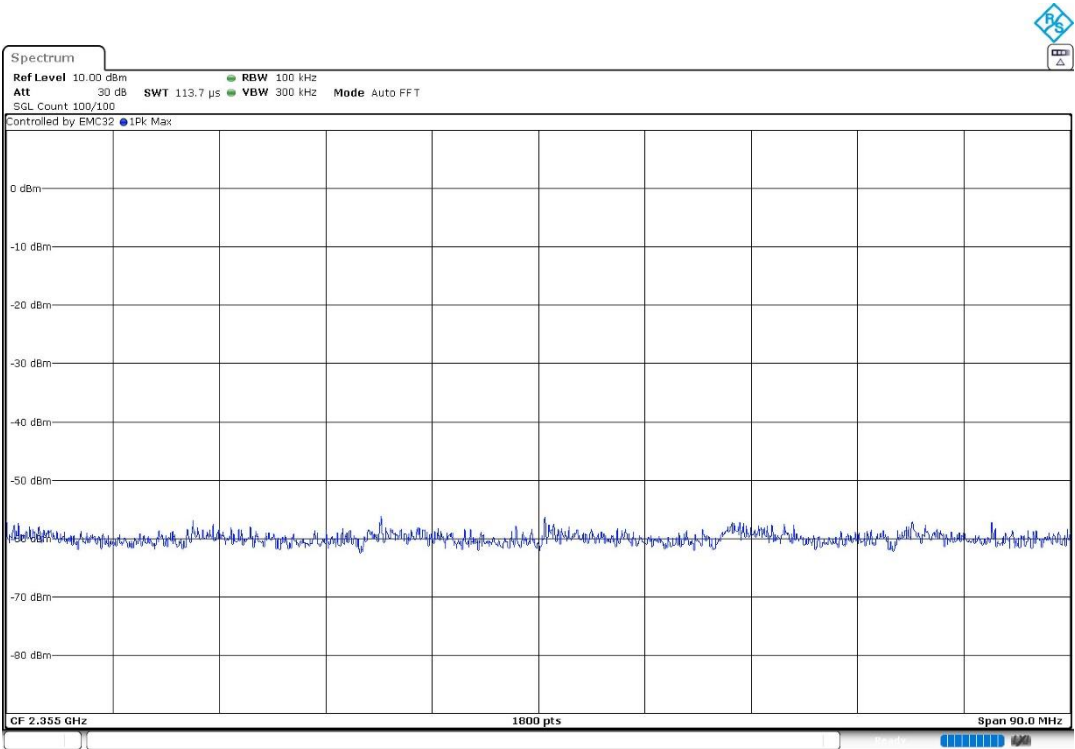
Attachments

GFSK – Band edge emissions

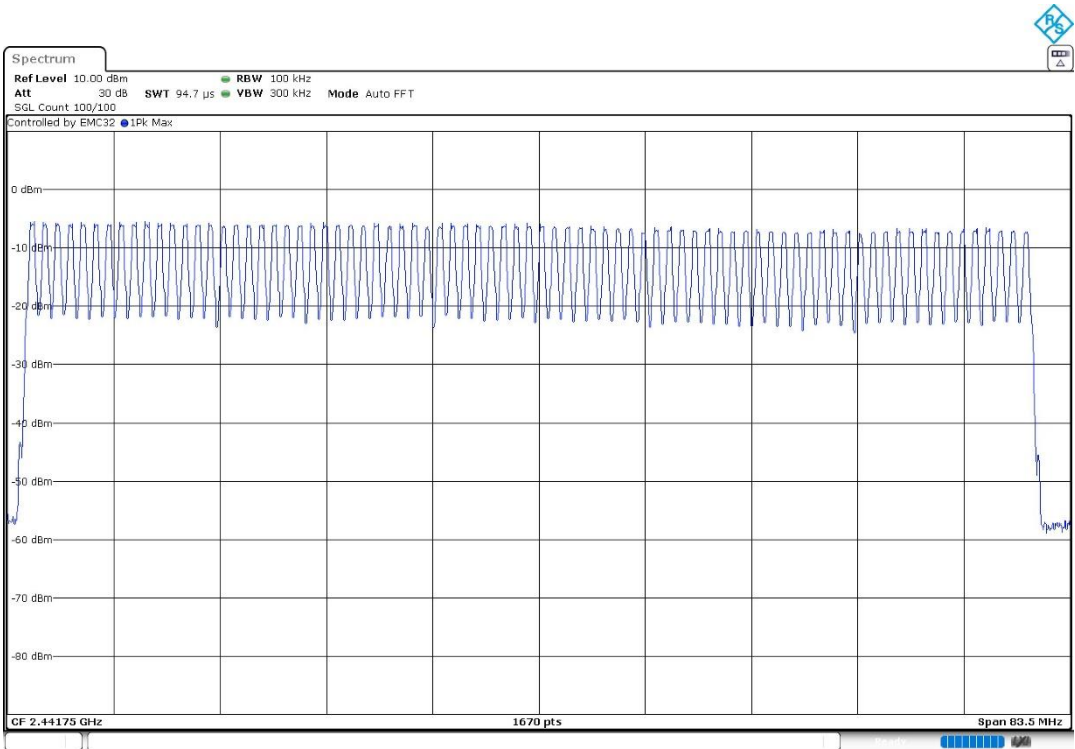
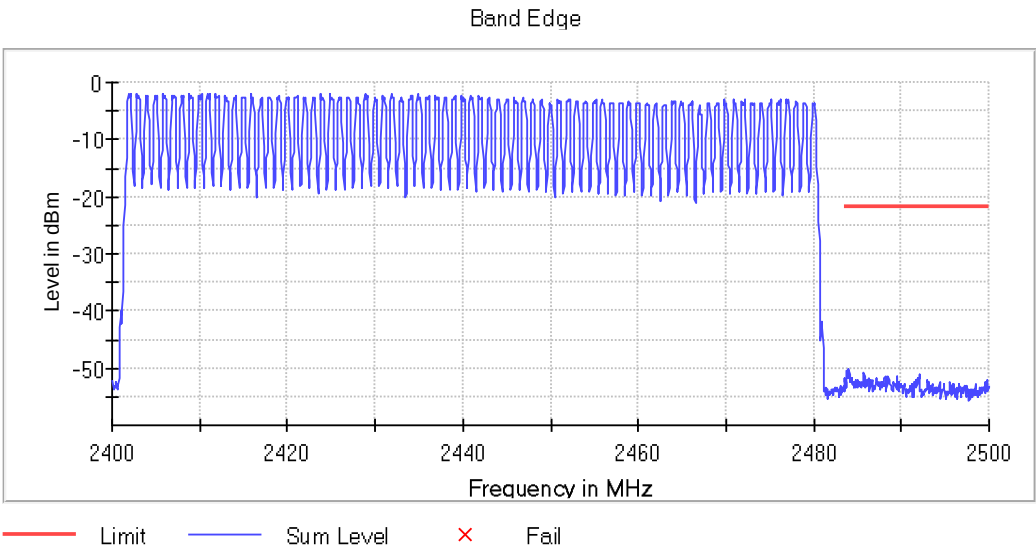
- HOPPING ON

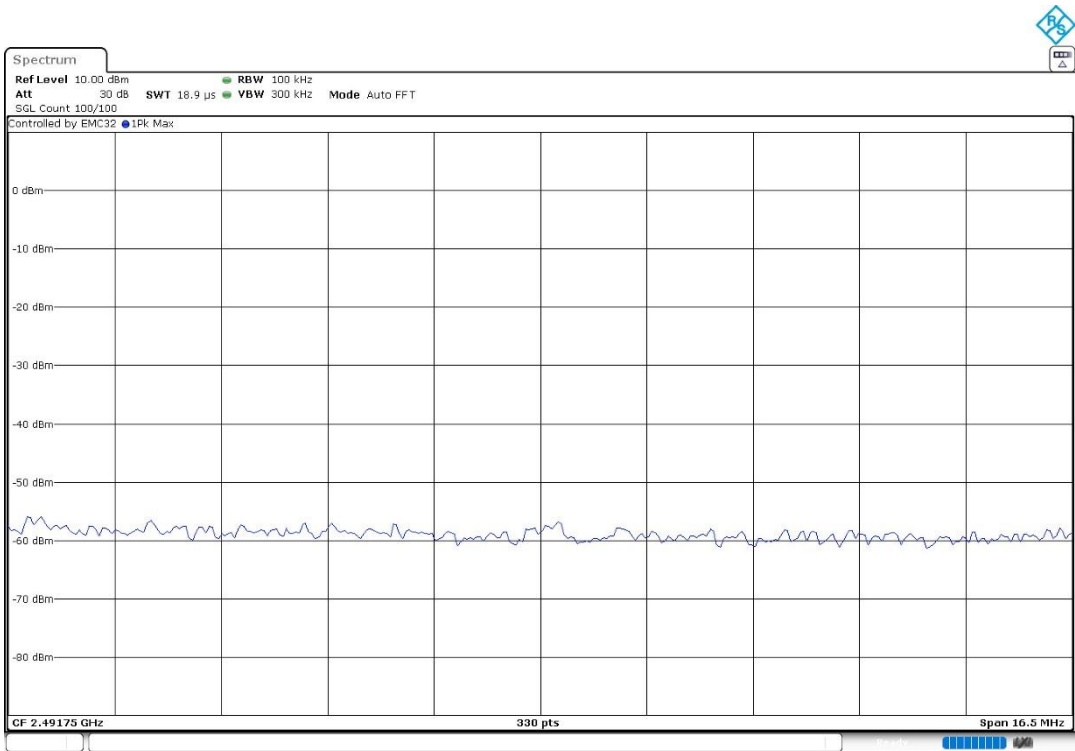
▪ Low Band Edge:



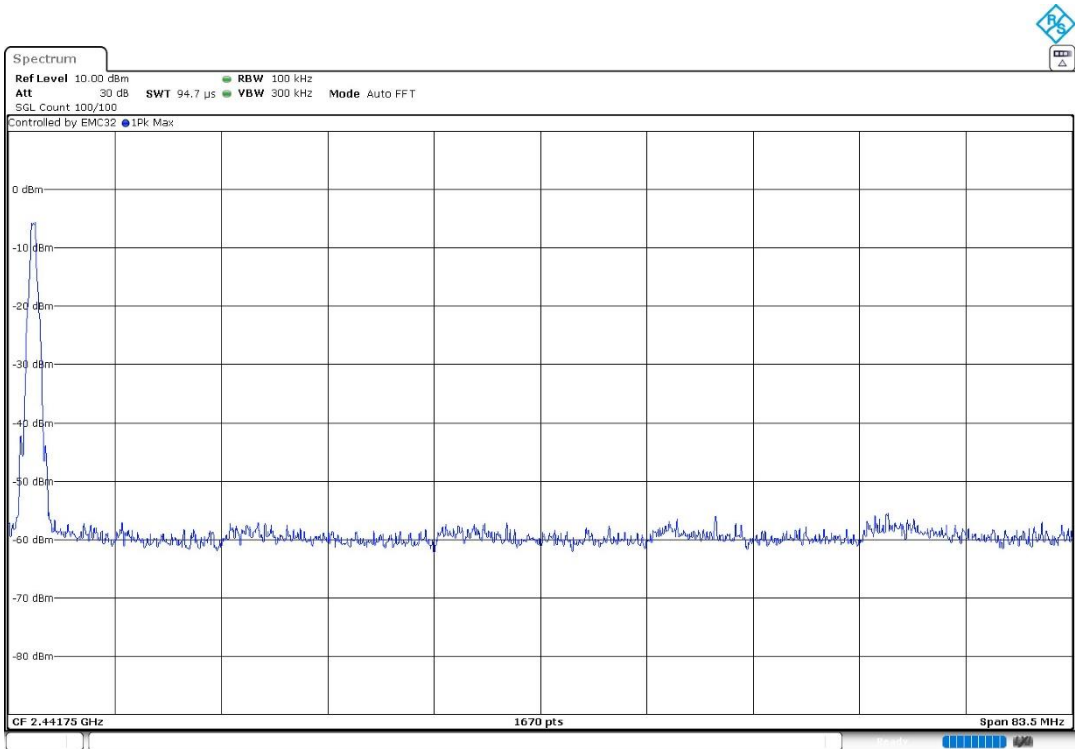
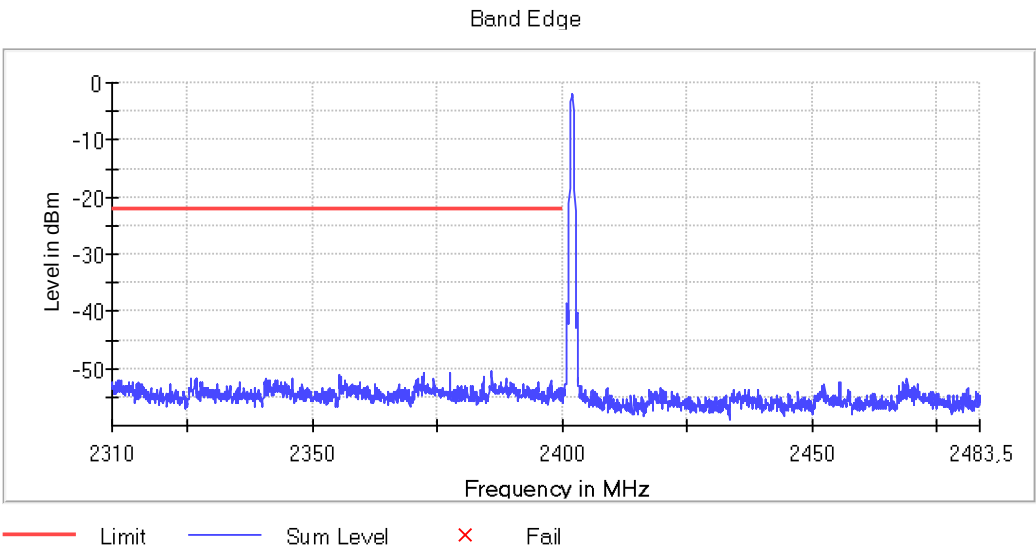


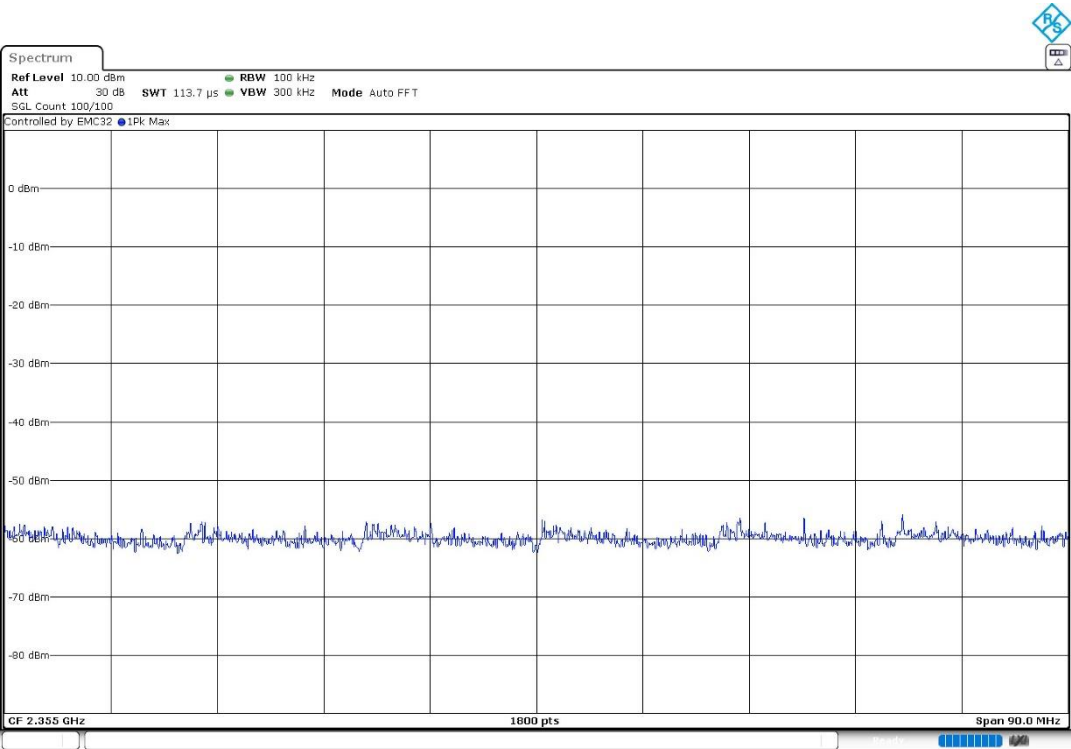
▪ High Band Edge:



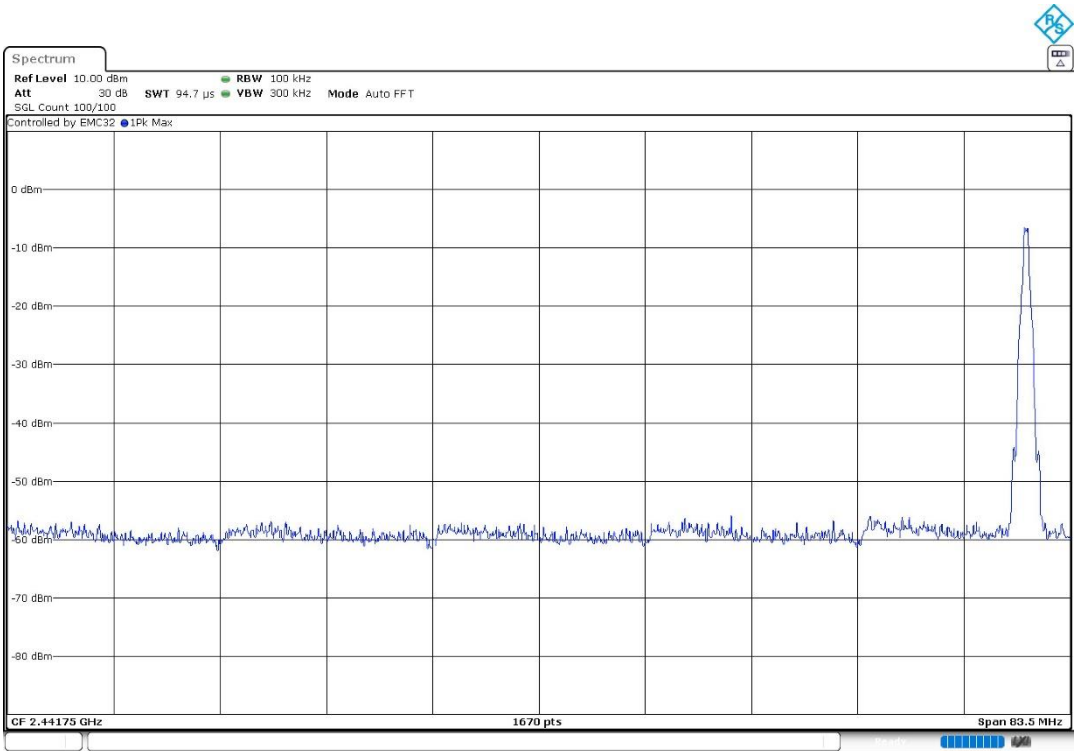
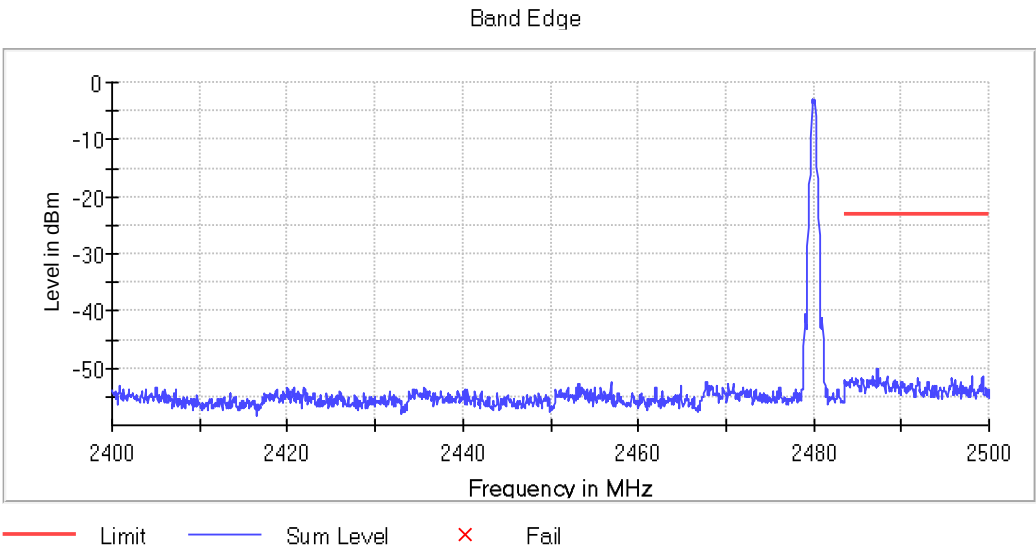


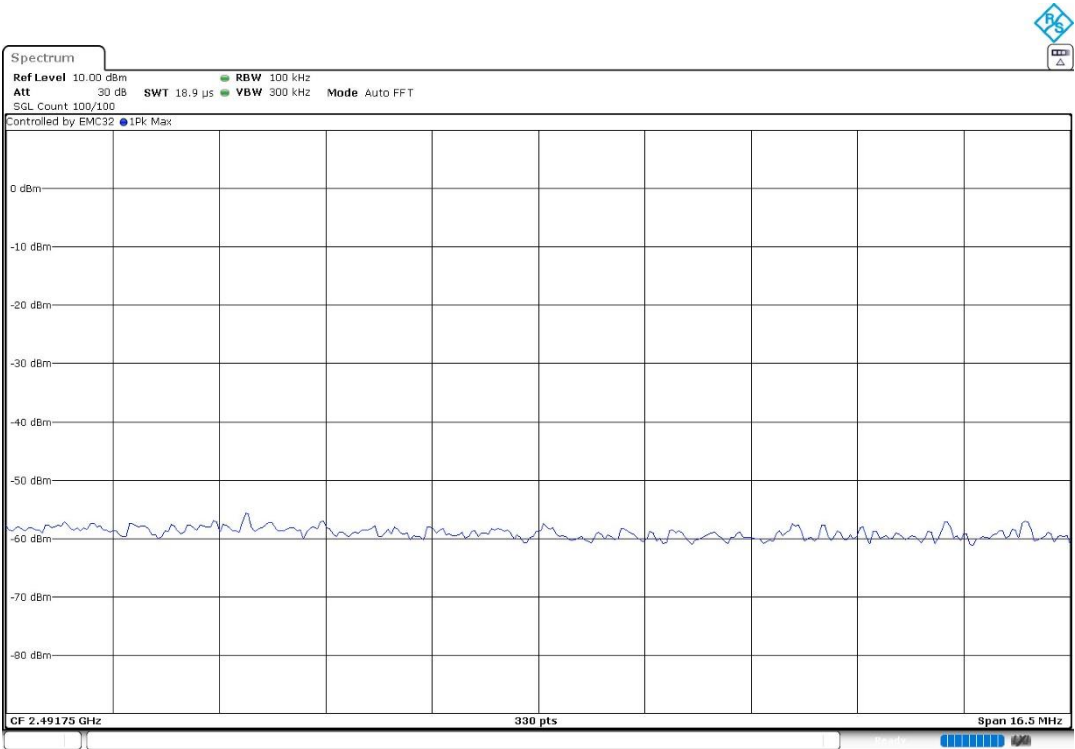
- HOPPING OFF
 - Low Band Edge:





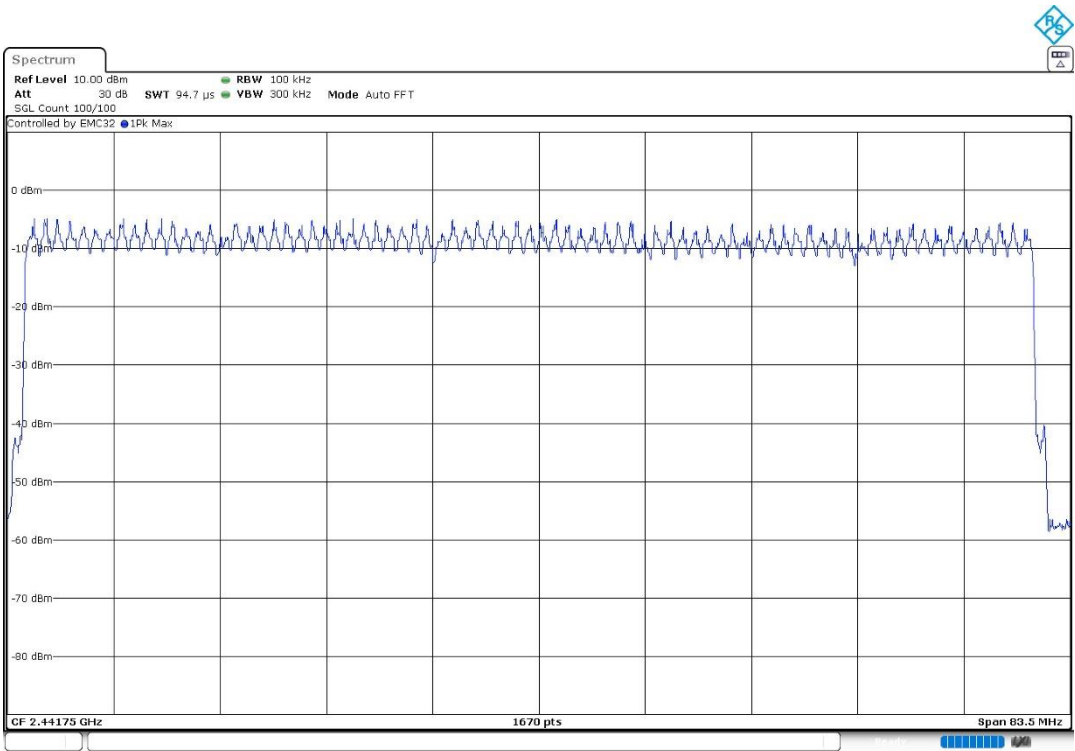
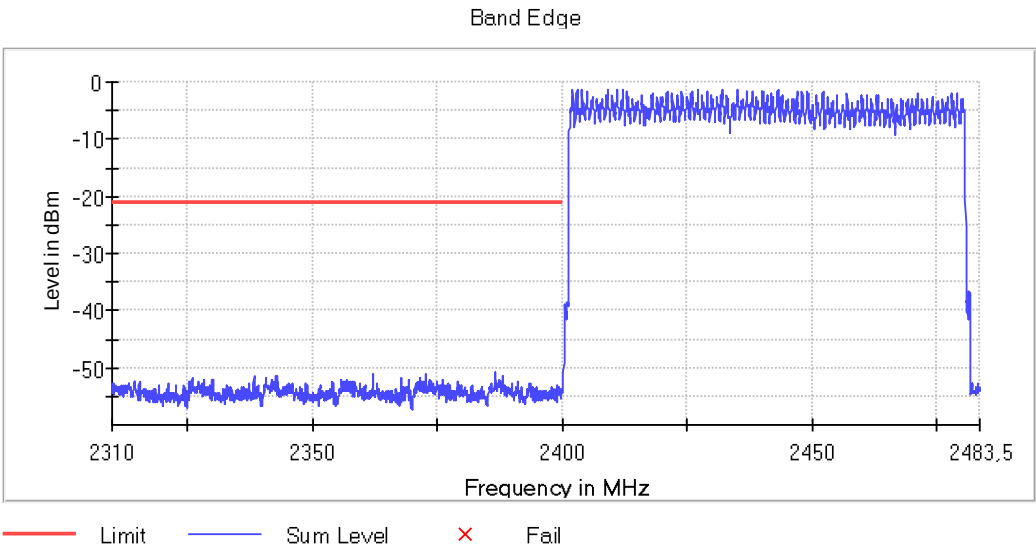
High Band Edge:

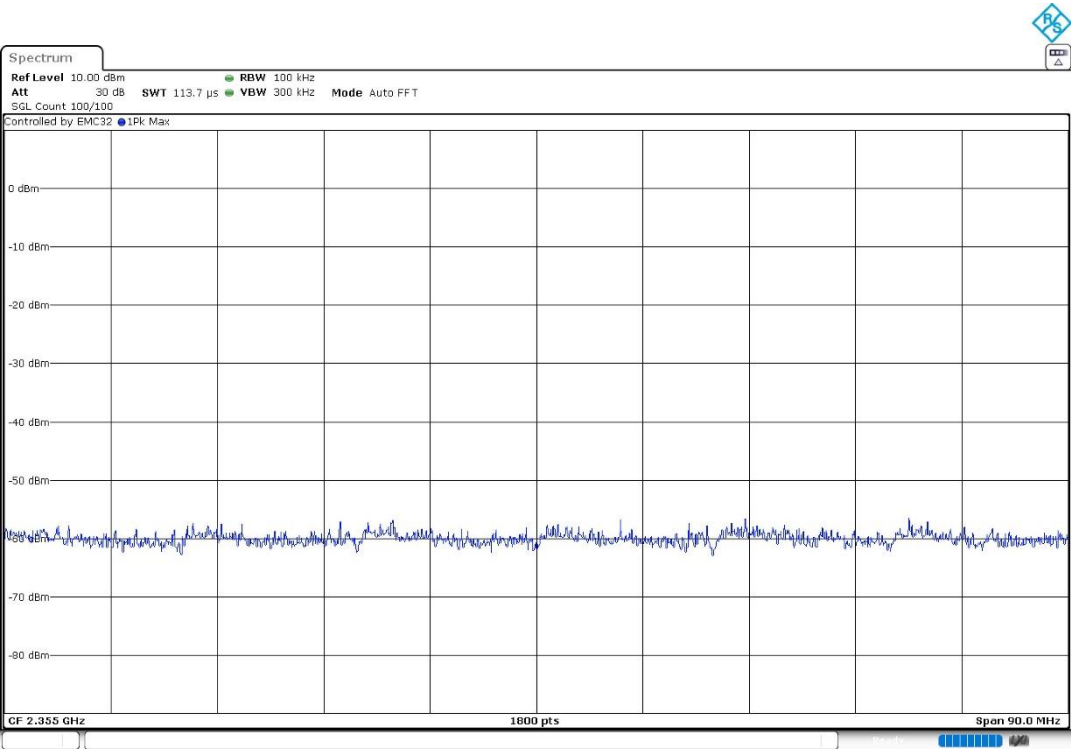




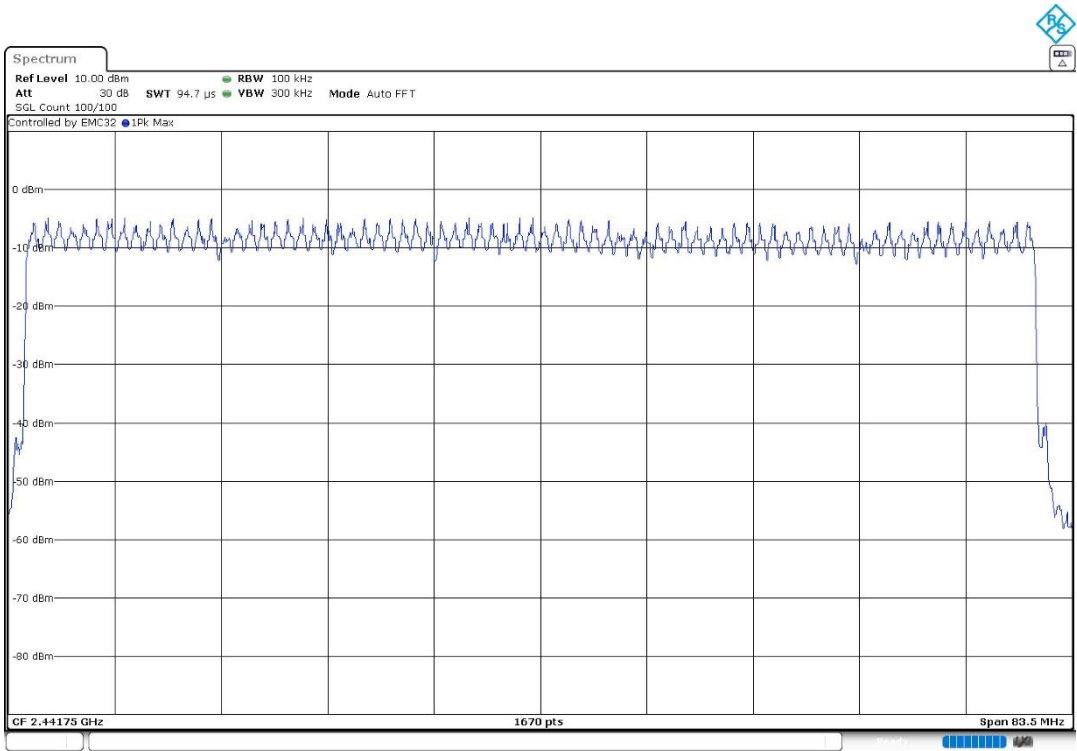
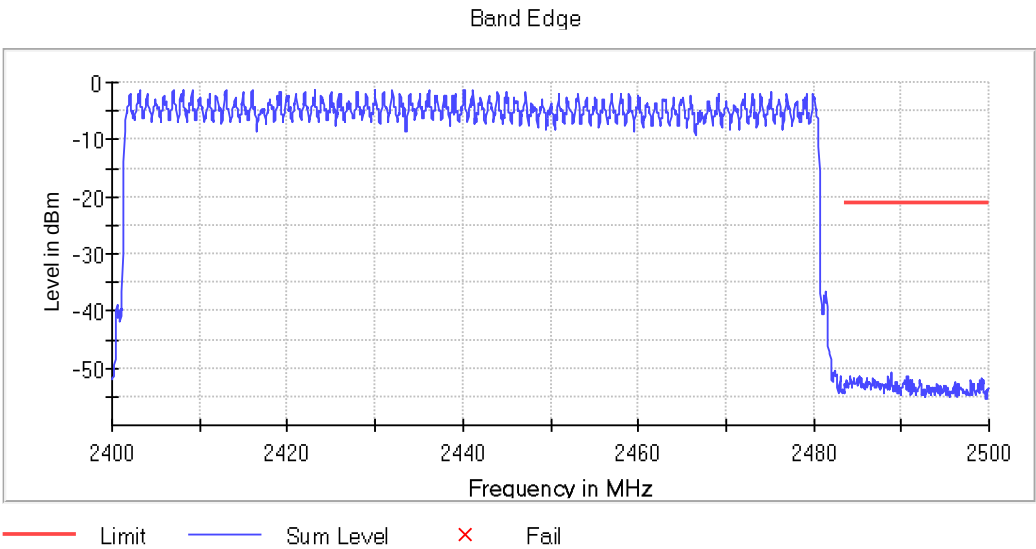
Pi/4 DQPSK – Band edge emissions

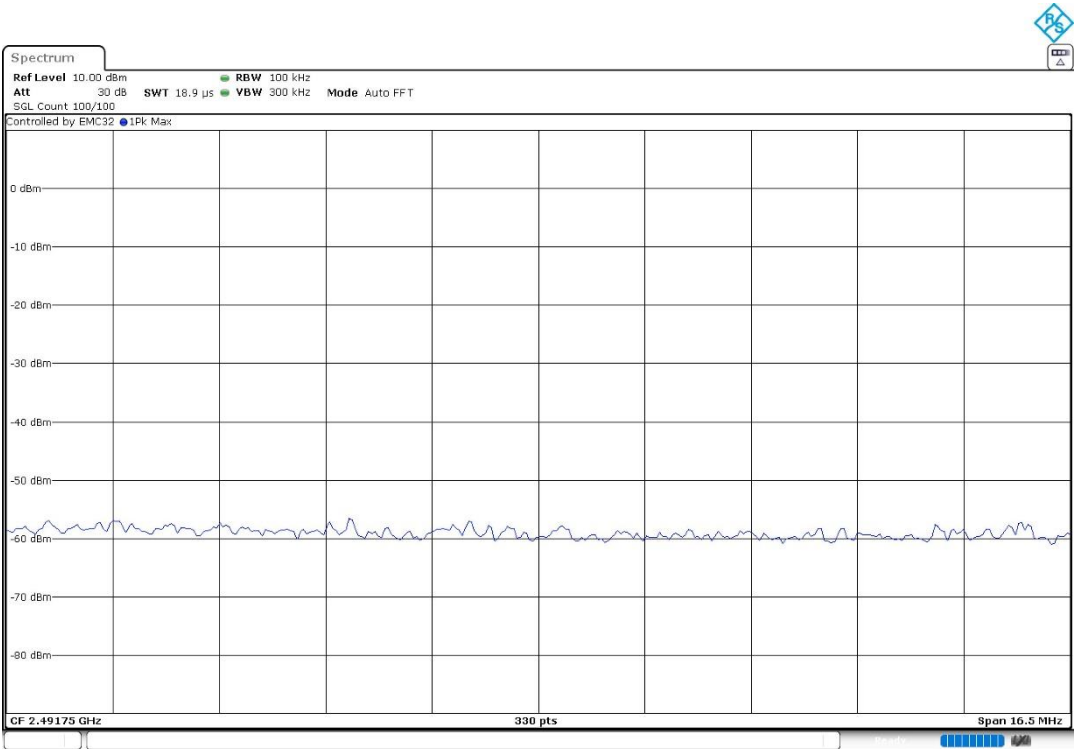
- HOPPING ON
 - Low Band Edge:



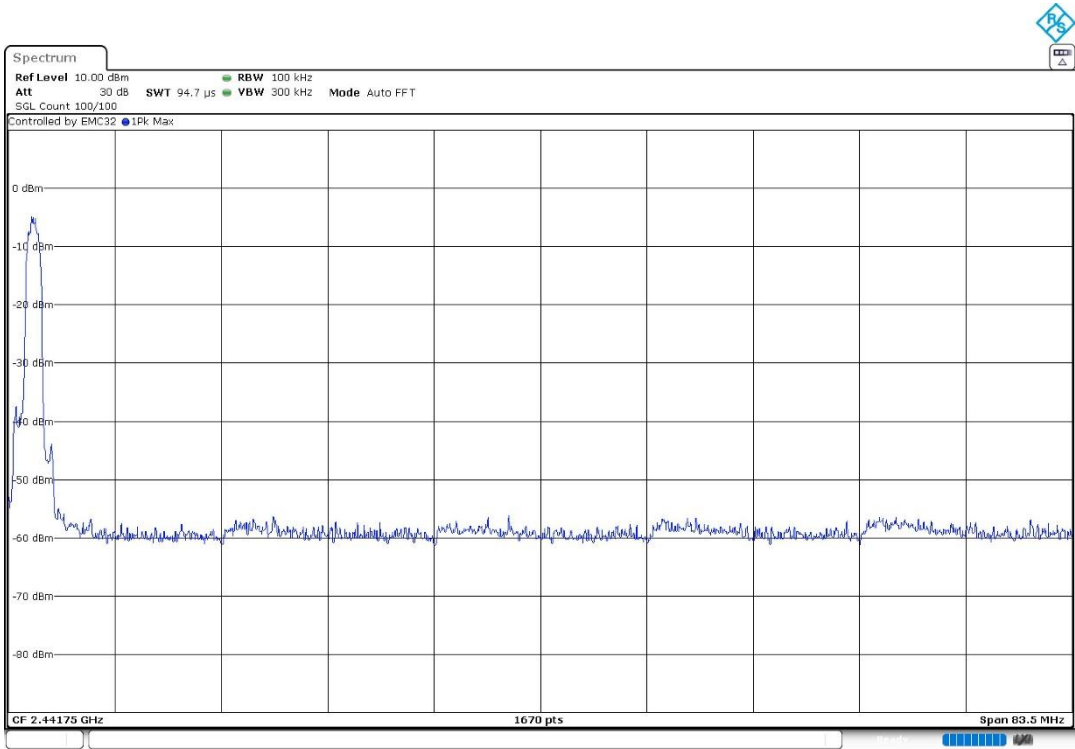
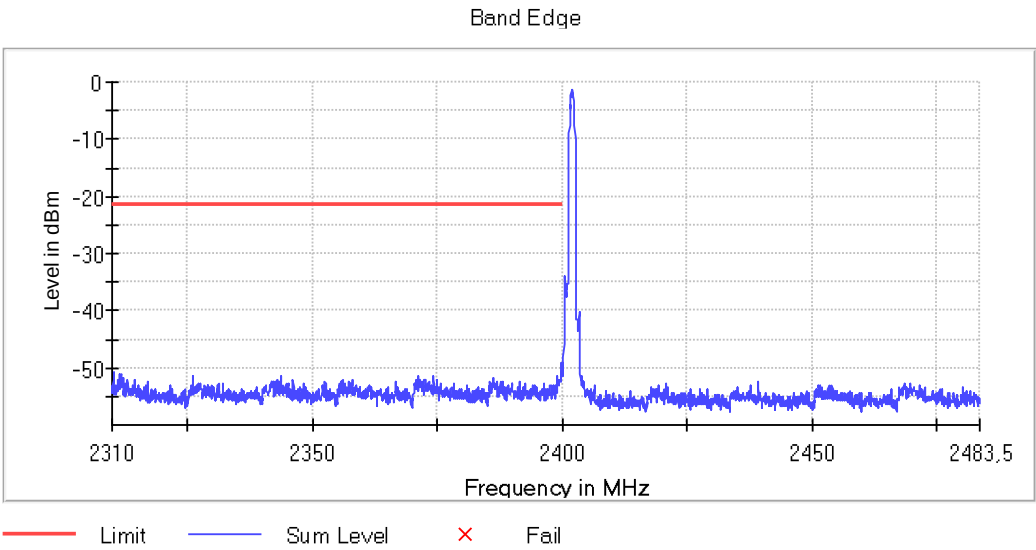


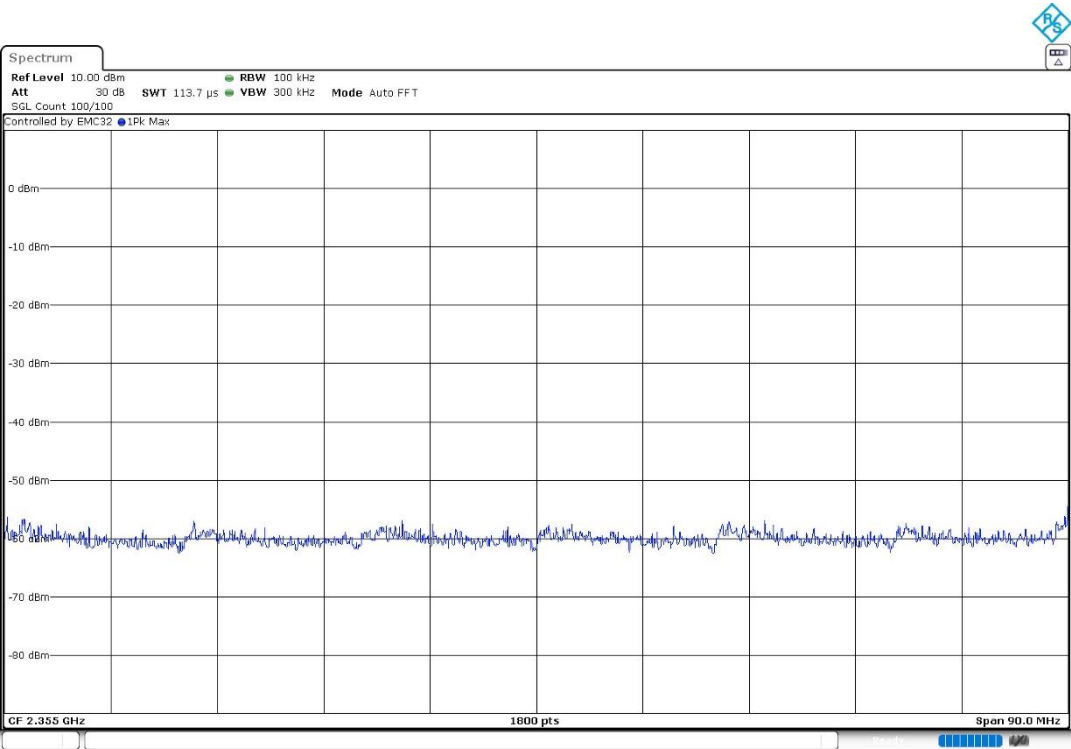
High Band Edge:



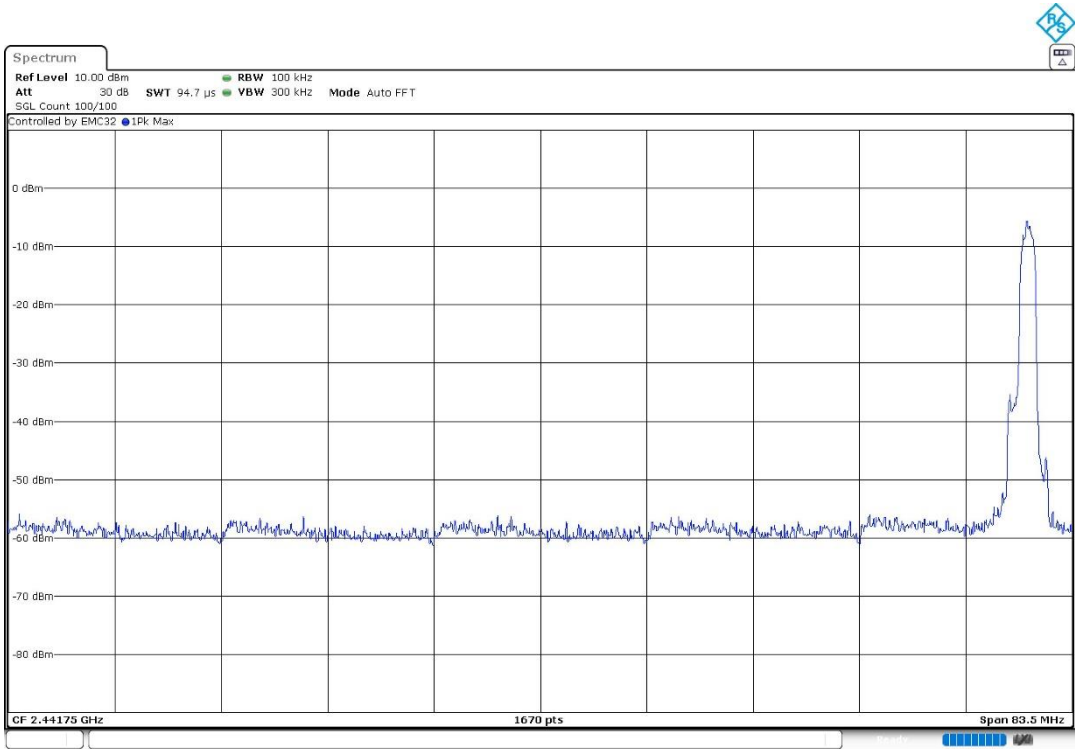
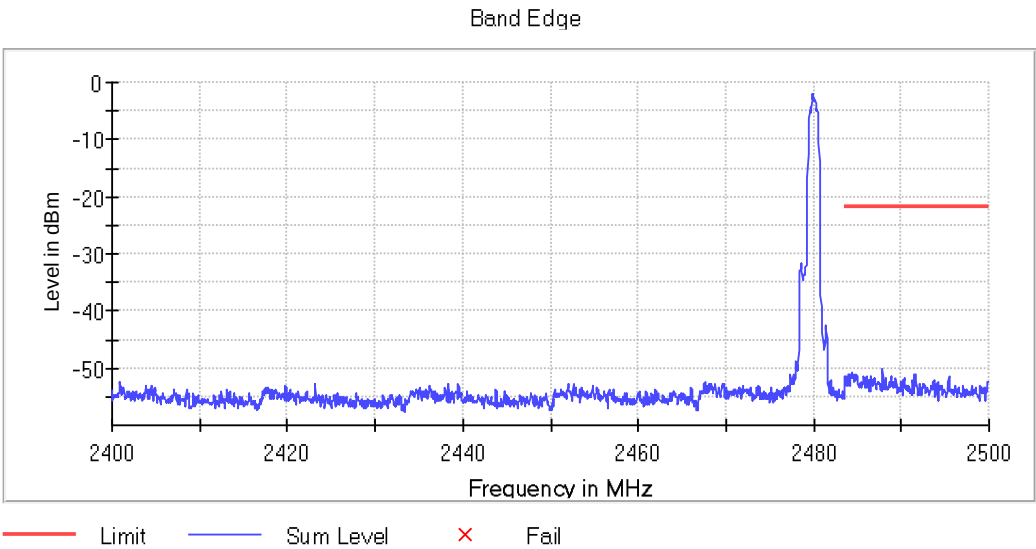


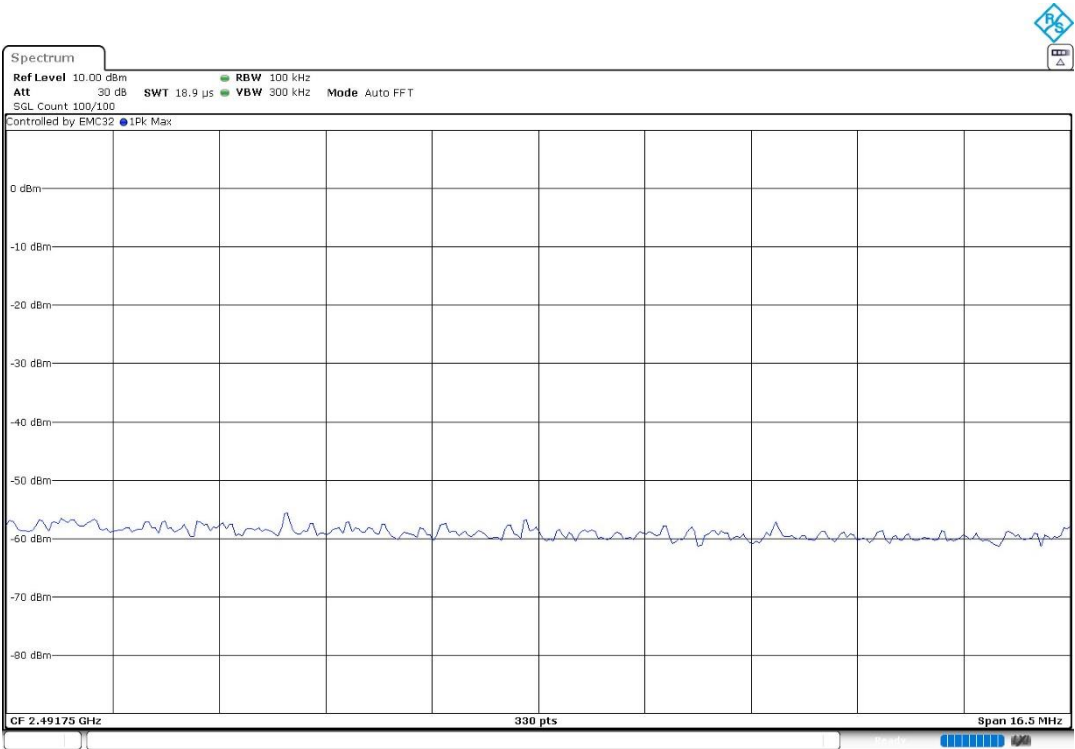
- HOPPING OFF
 - Low Band Edge:





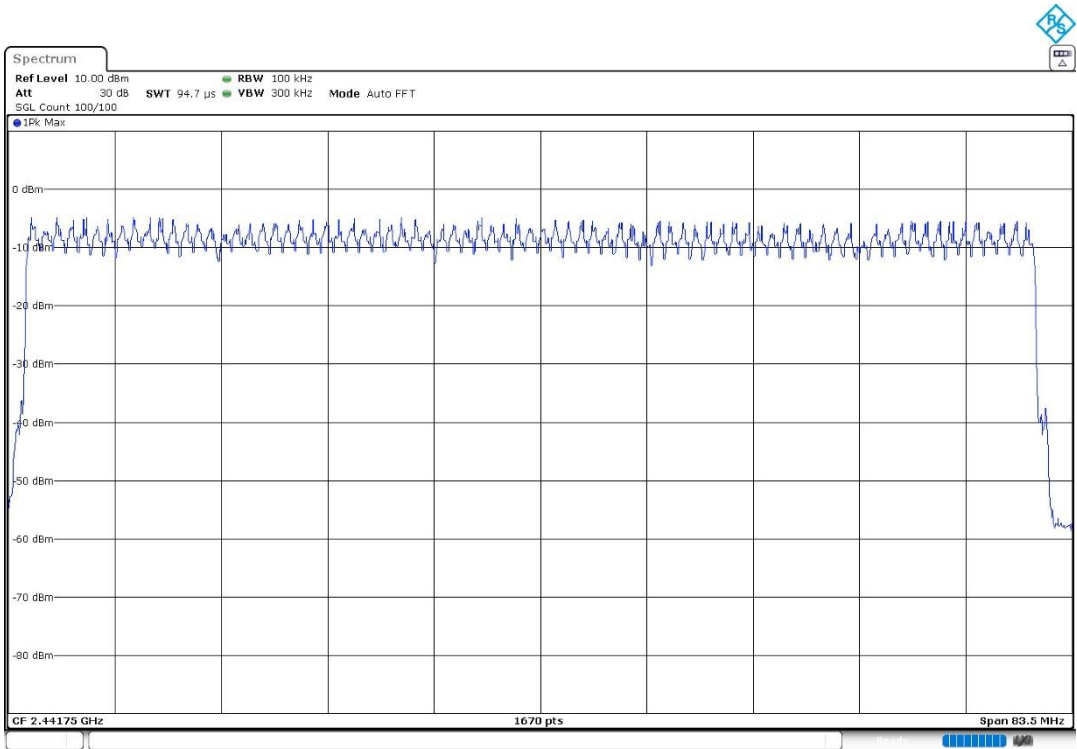
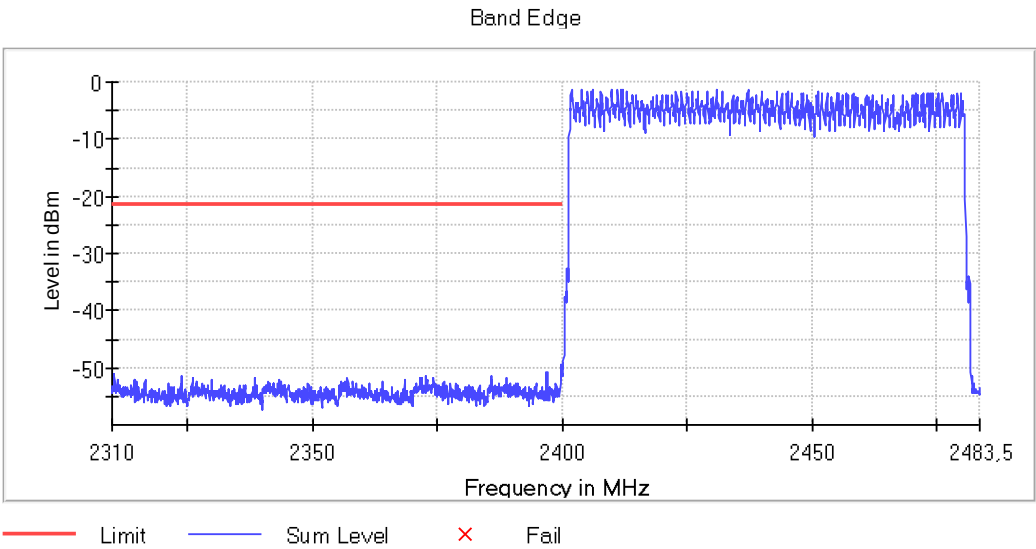
High Band Edge:

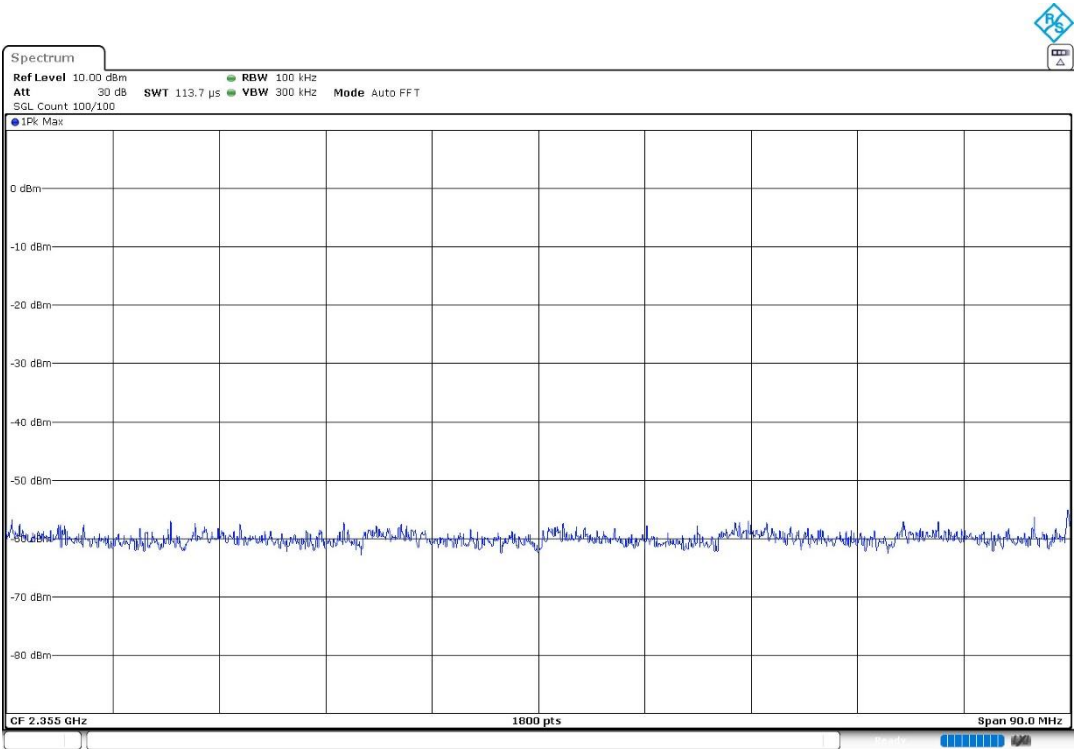




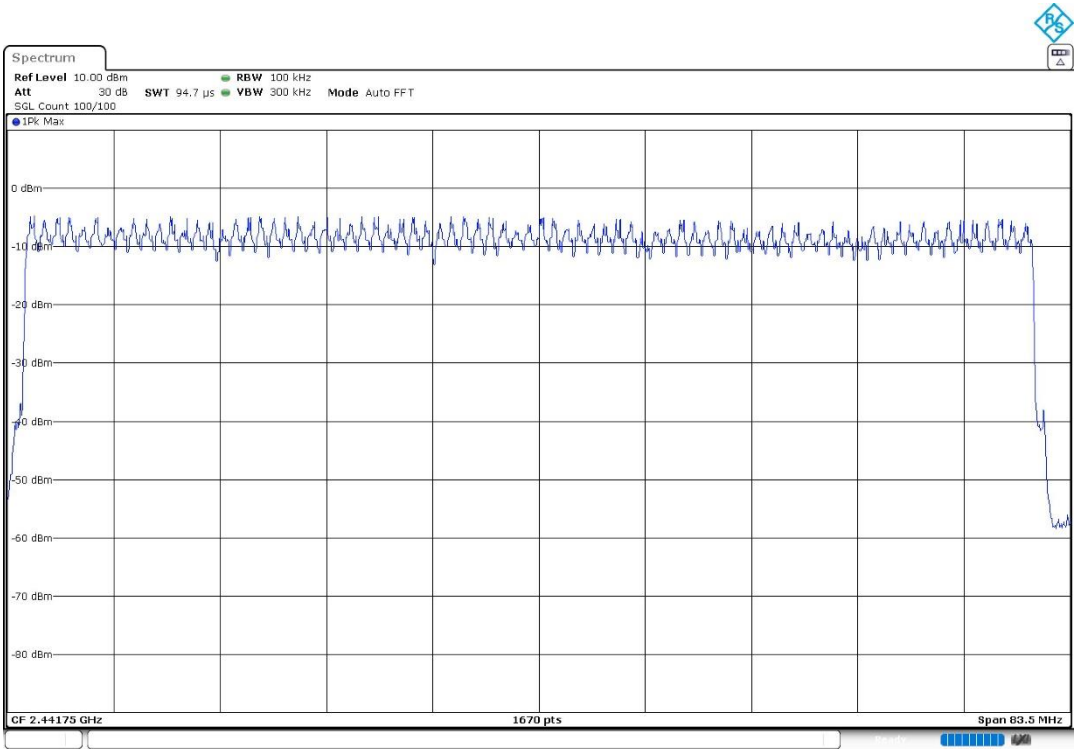
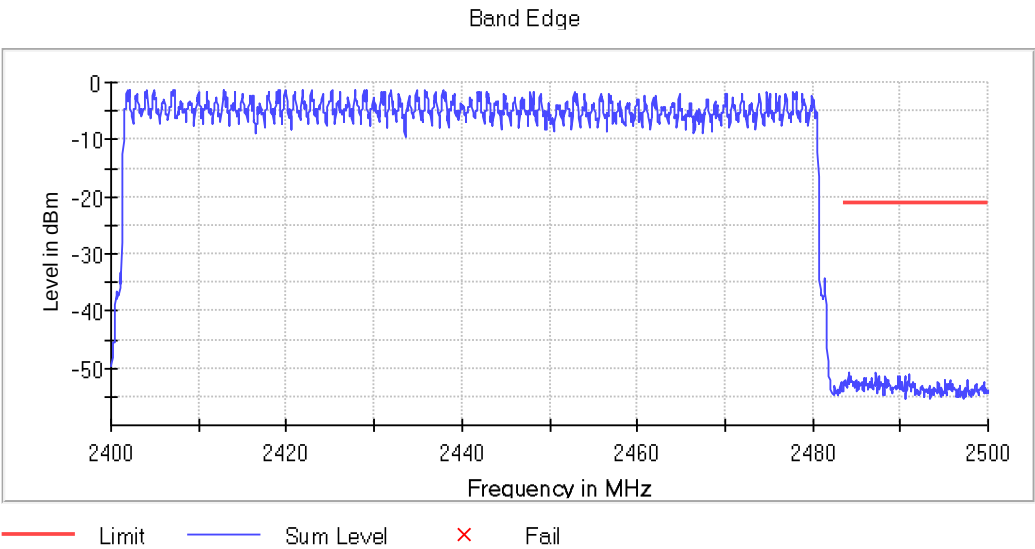
8DPSK – Band edge emissions

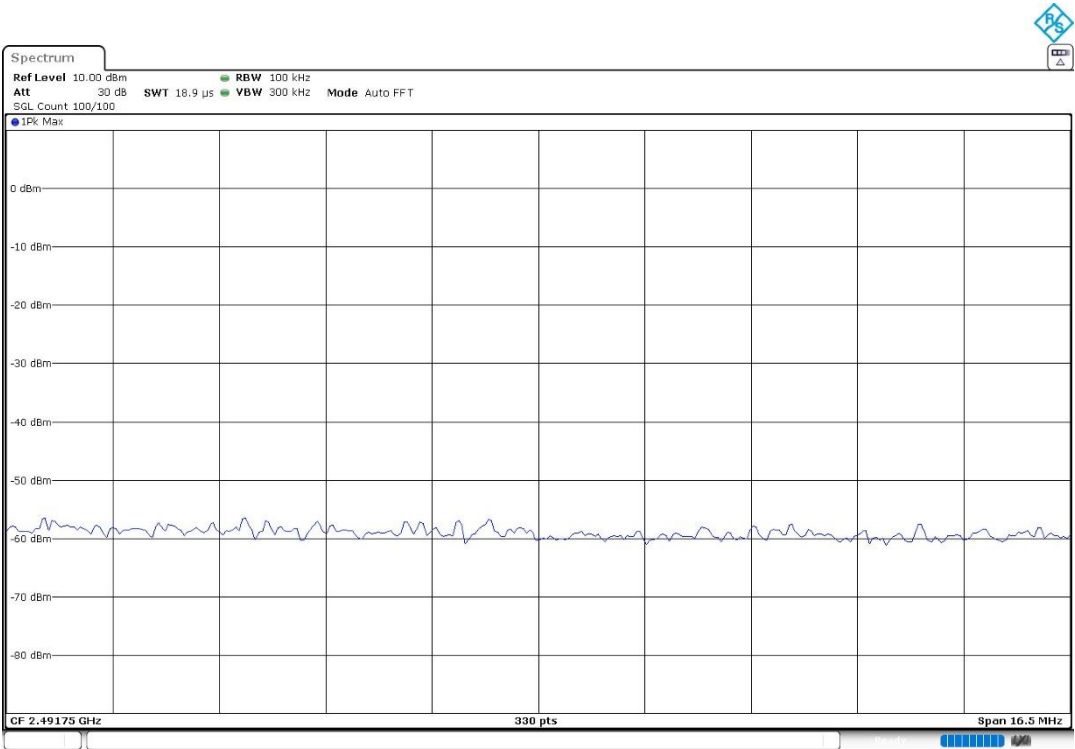
- HOPPING ON
 - Low Band Edge:



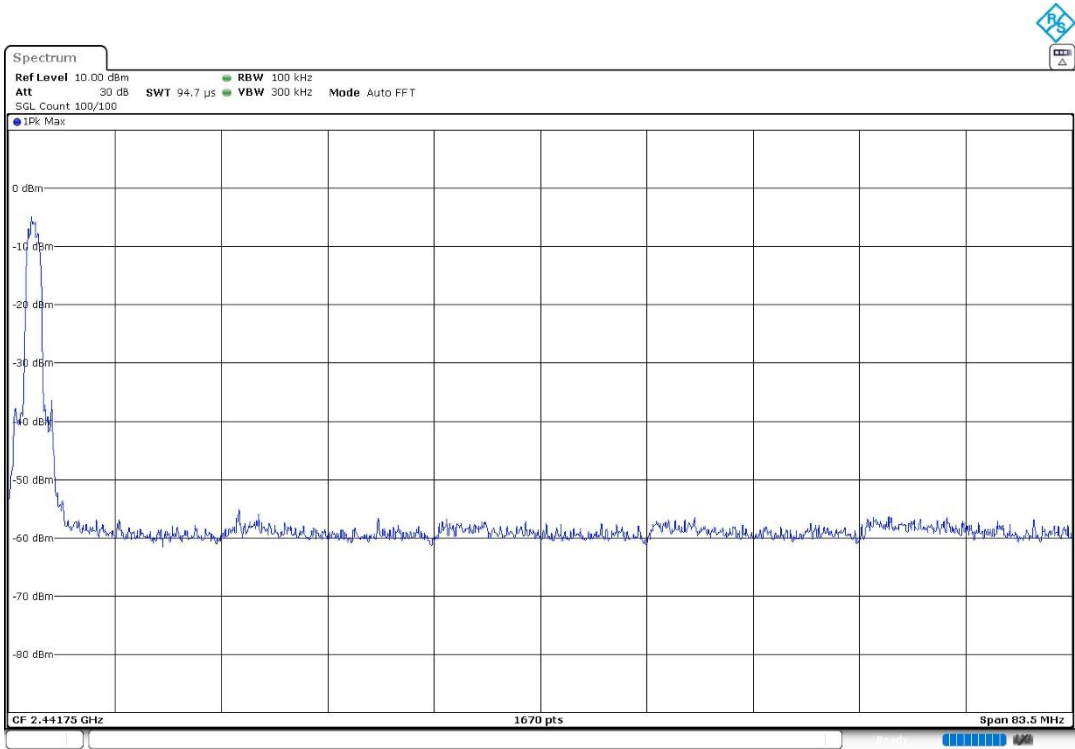
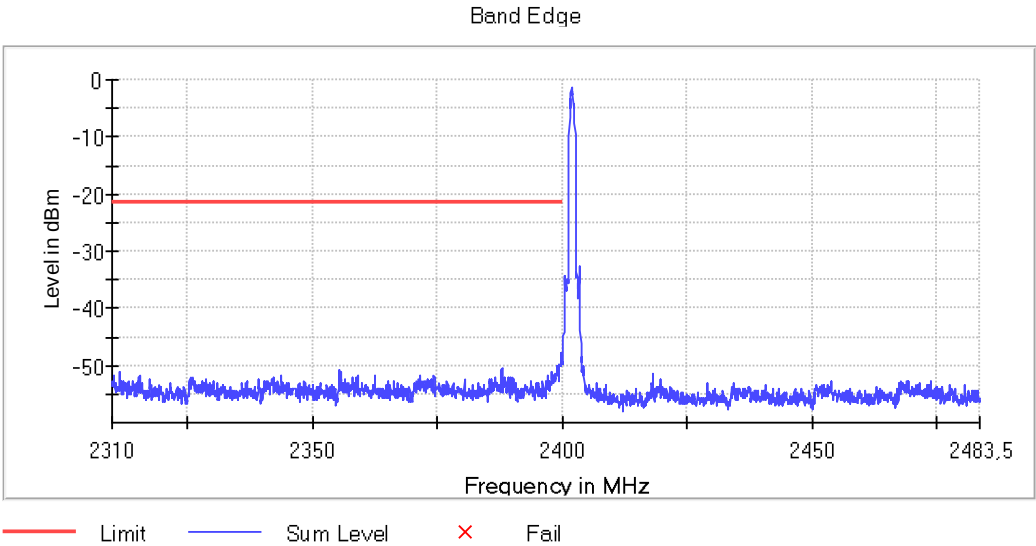


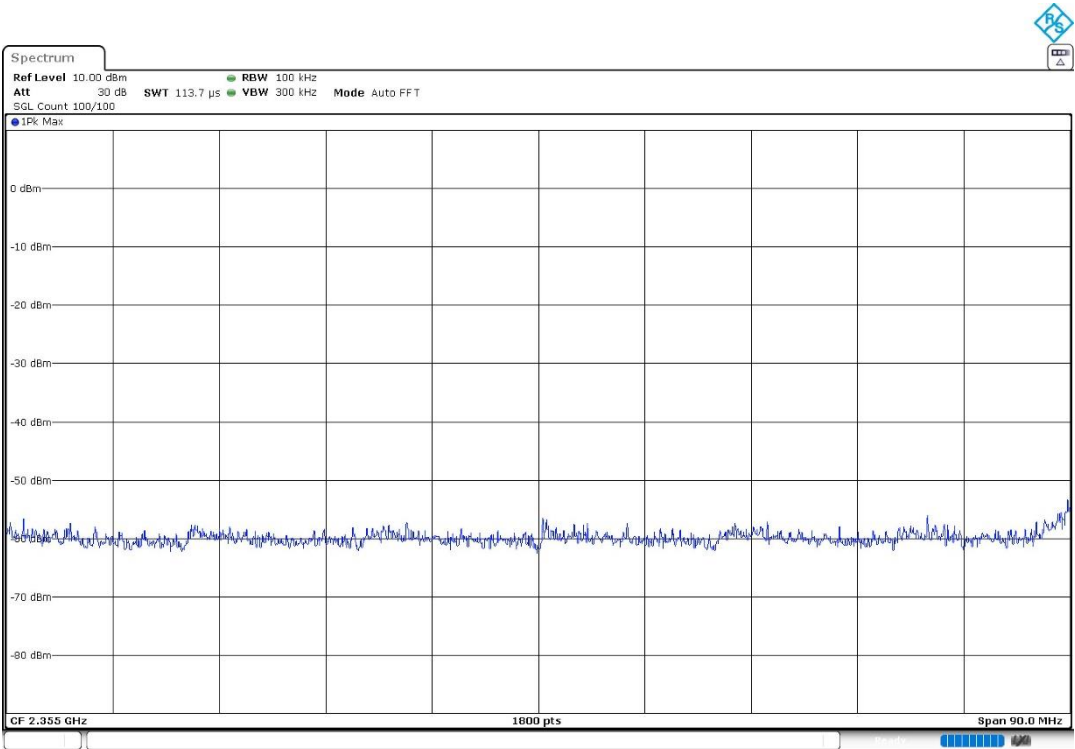
High Band Edge:



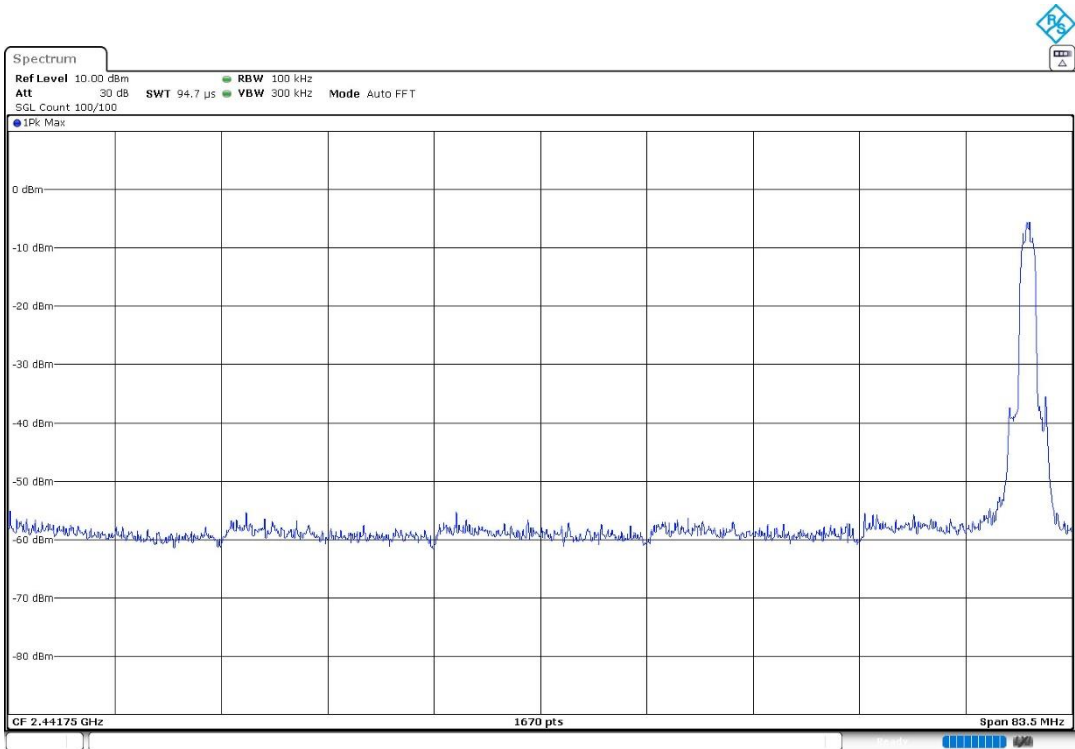
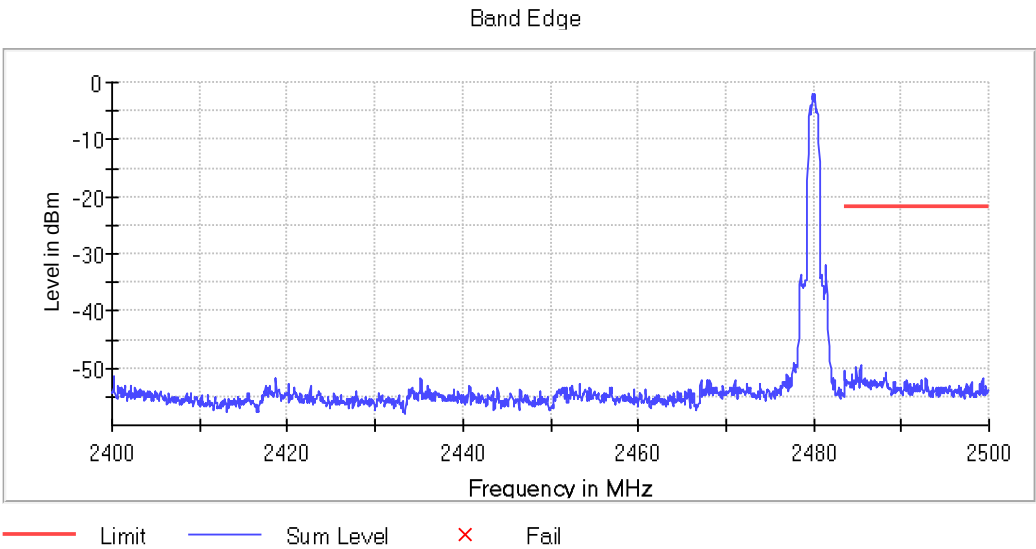


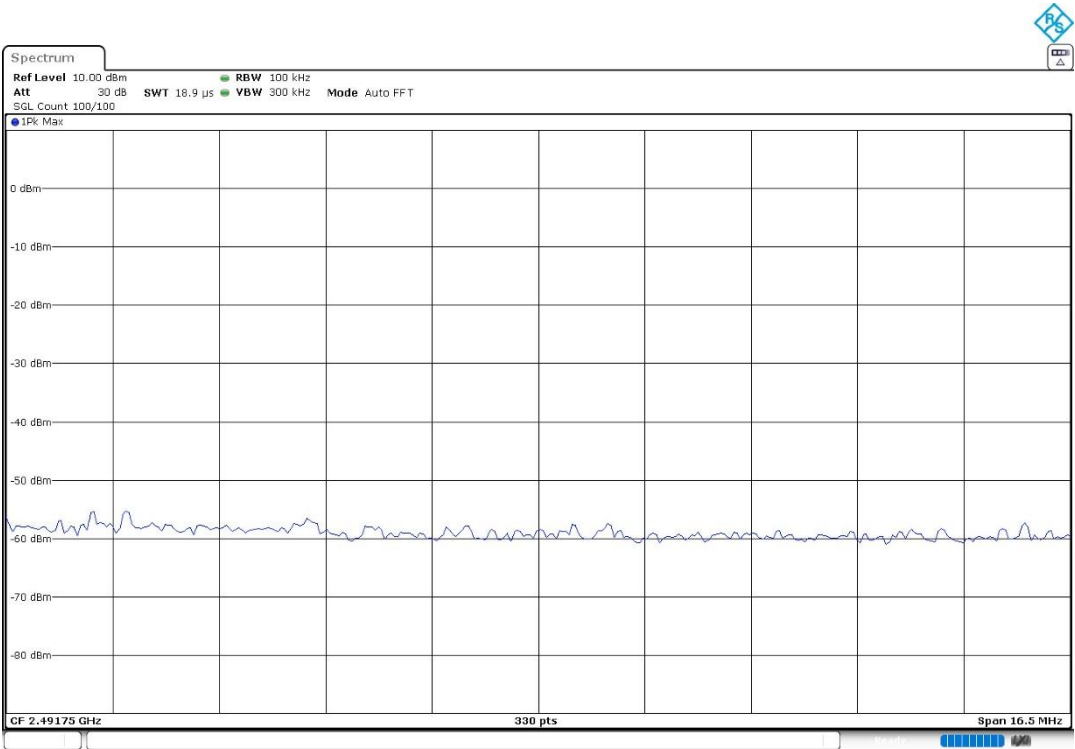
- HOPPING OFF
 - Low Band Edge:





▪ High Band Edge:





FCC 15.247 (d) / RSS-247 5.5 Emission limitations radiated (Transmitter)

Limits

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) / RSS-Gen):

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

The field strength is calculated by adding a correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss, pre-amplifiers gain and the distance correction factor for measurements above 17 GHz performed at 1.5-meter distance.

Frequency range 30 MHz - 1 GHz:

The spurious frequencies detected below 1 GHz do not depend on either the operating channel or the modulation mode selected in the EUT.

Spurious frequencies at less than 20 dB below the limit:

Spurious frequency (MHz)	Emission Level (dBµV/m)	Polarization	Detector
124.969063	30.19	V	Quasi-peak
150.007188	25.92	V	Quasi-peak
174.984688	23.68	V	Quasi-peak
274.985625	28.13	H	Quasi-peak
299.993438	28.47	V	Quasi-peak
349.978750	31.34	H	Quasi-peak
374.986563	27.29	H	Quasi-peak
424.971875	26.66	H	Quasi-peak

Frequency range 1 - 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 dB μ V/m at 3 m) are measured with average detector for checking compliance with the average limit.

- **GFSK modulation (DH5):**

- Low channel. Spurious frequencies closest to the limit:

Spurious frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector
4979.180000	42.17	V	Peak

- Middle Channel. Spurious frequencies closest to the limit:

Spurious frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector
4881.600000	40.85	V	Peak

- High Channel. Spurious frequencies closest to the limit:

Spurious frequency (MHz)	Emission Level (dB μ V/m)	Polarization	Detector
4987.020000	42.51	V	Peak

Verdict

Pass

- **Pi/4-DQPSK modulation (2-DH5):**

- Low Channel. Spurious frequencies closest to the limit:

Spurious frequency (MHz)	Emission Level (dBμV/m)	Polarization	Detector
4803.620000	41.05	V	Peak

- Middle Channel. Spurious frequencies closest to the limit:

Spurious frequency (MHz)	Emission Level (dBμV/m)	Polarization	Detector
4882.720000	40.71	V	Peak
4990.100000	42.04	V	Peak

- High Channel. Spurious frequencies closest to the limit:

Spurious frequency (MHz)	Emission Level (dBμV/m)	Polarization	Detector
4960.000000	41.33	H	Peak
7489.940000	48.35	V	Peak

Verdict

Pass

• **8-DPSK modulation (3-DH5):**

- Low Channel. No spurious frequencies found close to the limit.
- Middle Channel. No spurious frequencies found close to the limit.
- High Channel. Spurious frequencies closest to the limit:

Spurious frequency (MHz)	Emission Level (dBµV/m)	Polarization	Detector
4959.580000	42.42	H	Peak

Verdict

Pass

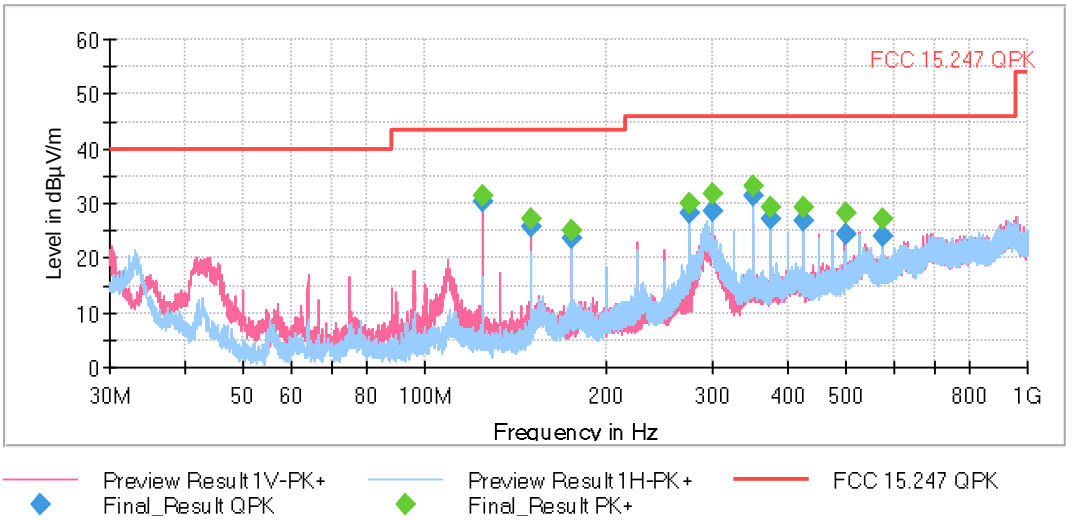
Attachments

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
Receiver: [FSW 50] 1 GHz - 3 GHz	30,769 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
Receiver: [FSW 50] 3 GHz - 17 GHz	140 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
Receiver: [FSW 50] 17 GHz - 26 GHz	300 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

FREQUENCY RANGE 30 MHz - 1 GHz

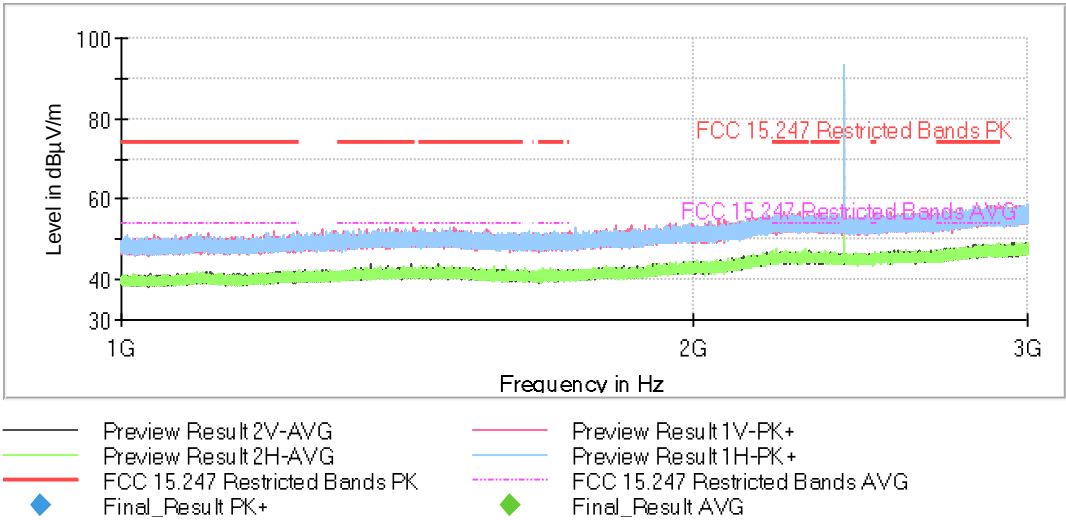
This plot is valid for Low, Middle and High Channels and all modulations.



FREQUENCY RANGE 1 - 3 GHz

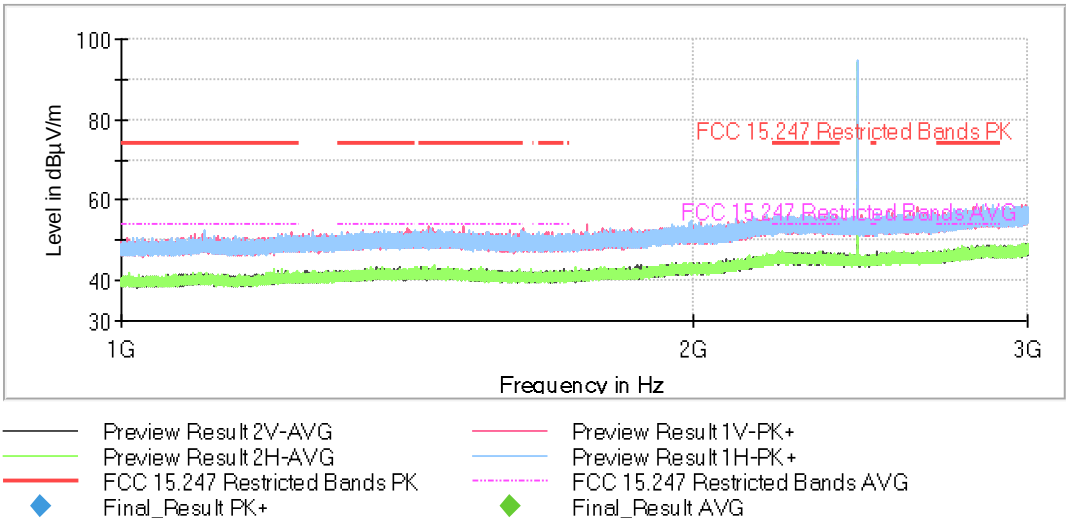
GFSK modulation (DH5)

- Low Channel:



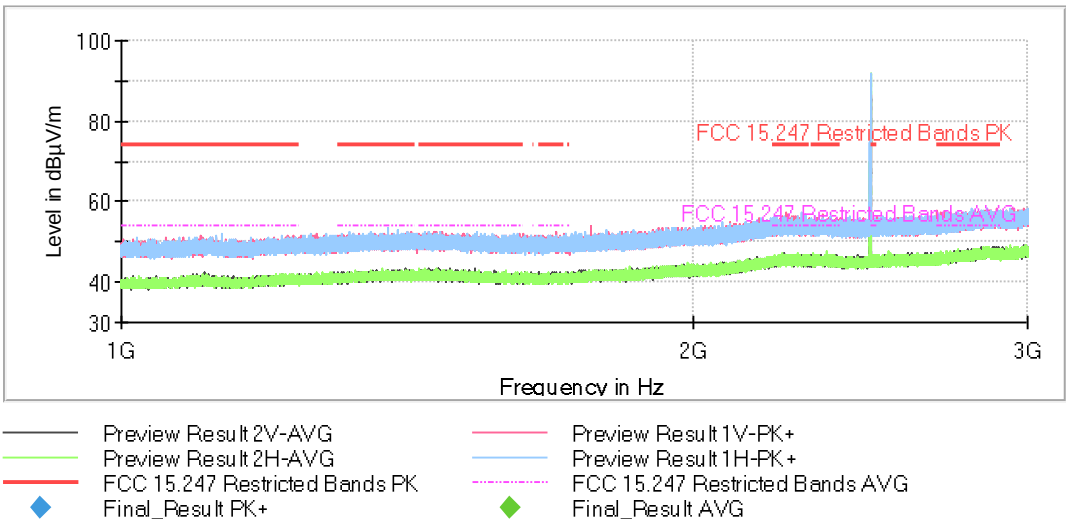
The peak above the limit is the carrier frequency.

- Middle Channel:



The peak above the limit is the carrier frequency.

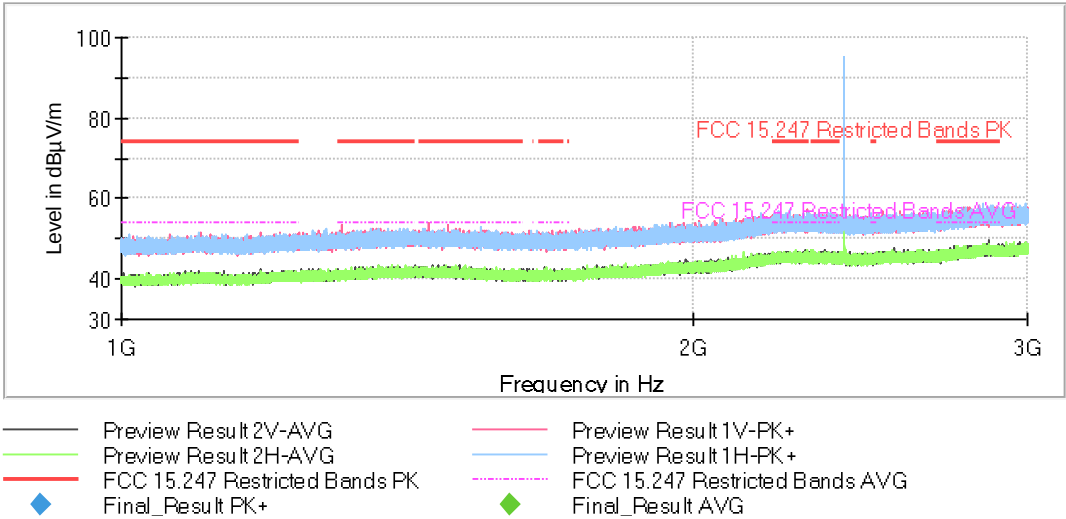
- High Channel:



The peak above the limit is the carrier frequency.

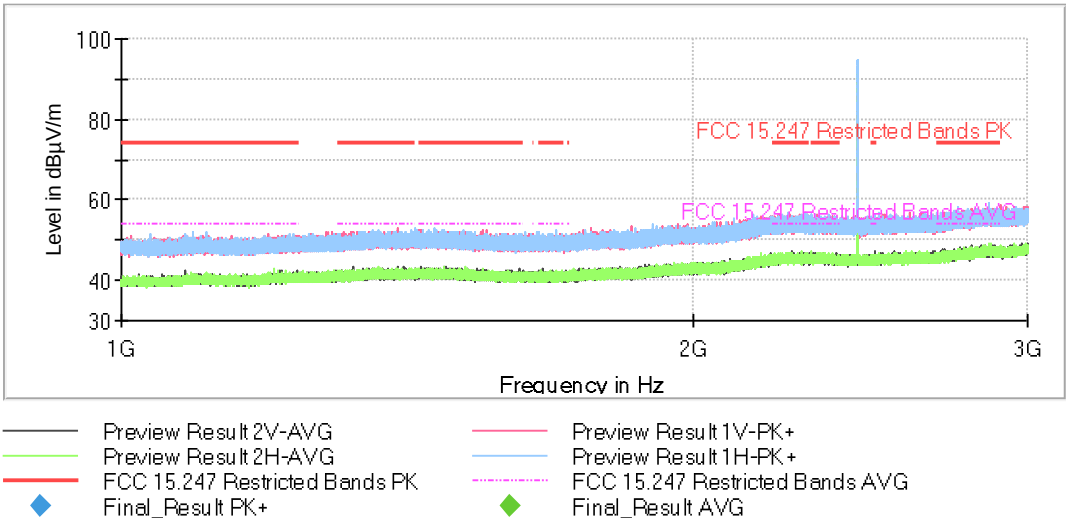
• **Pi/4-DQPSK modulation (2DH5)**

- Low Channel:



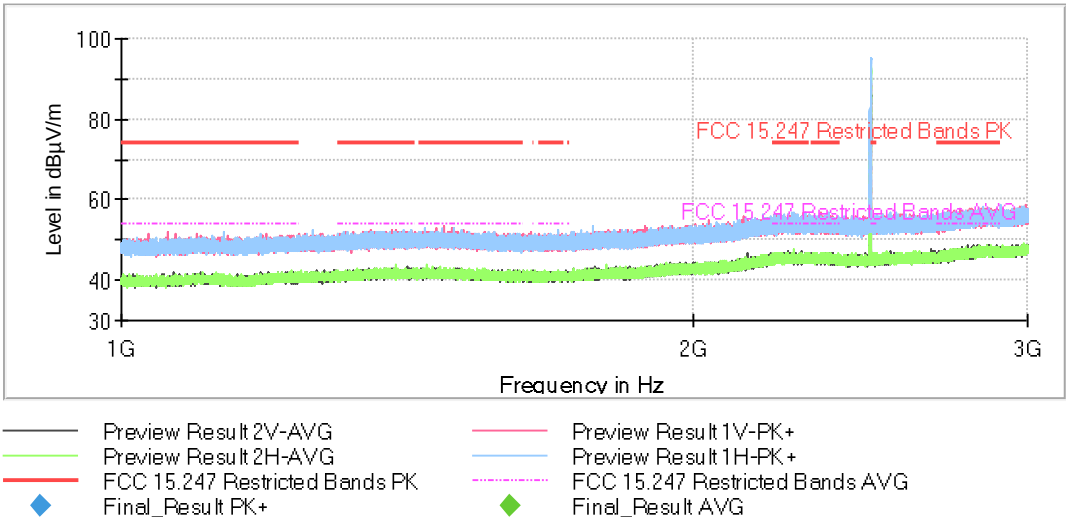
The peak above the limit is the carrier frequency.

- Middle Channel:



The peak above the limit is the carrier frequency.

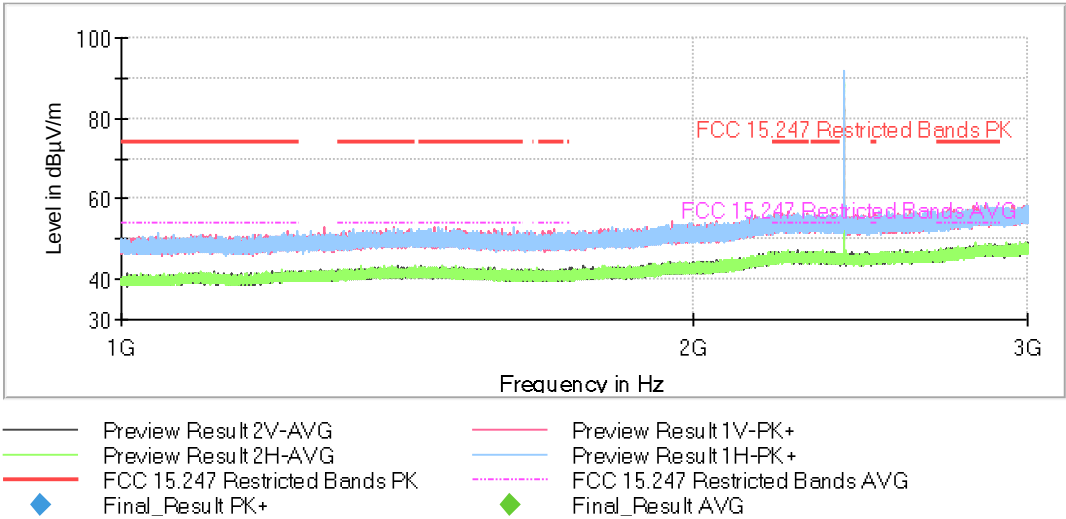
- High Channel:



The peak above the limit is the carrier frequency.

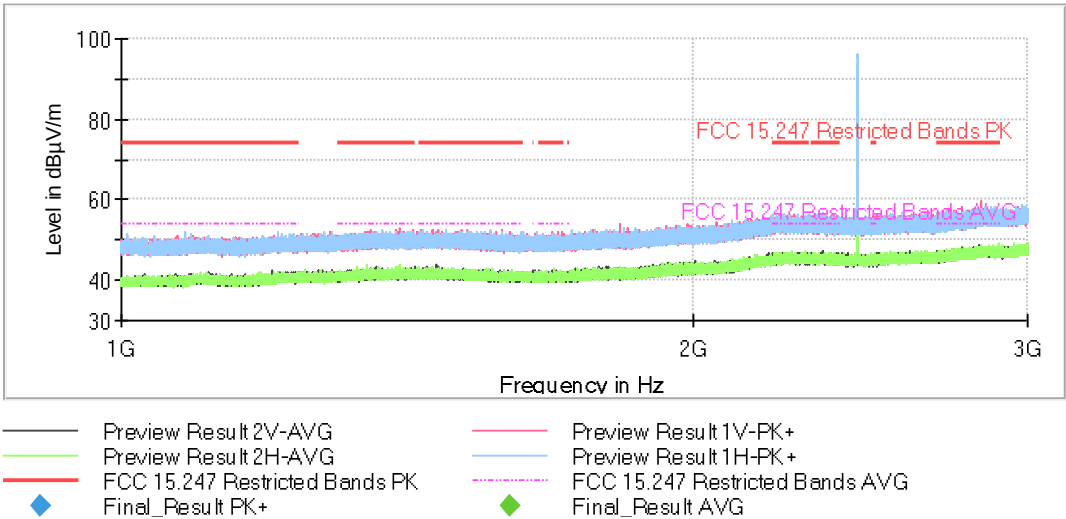
8-DPSK modulation (3DH5)

- Low Channel:



The peak above the limit is the carrier frequency.

- Middle Channel:



The peak above the limit is the carrier frequency.