

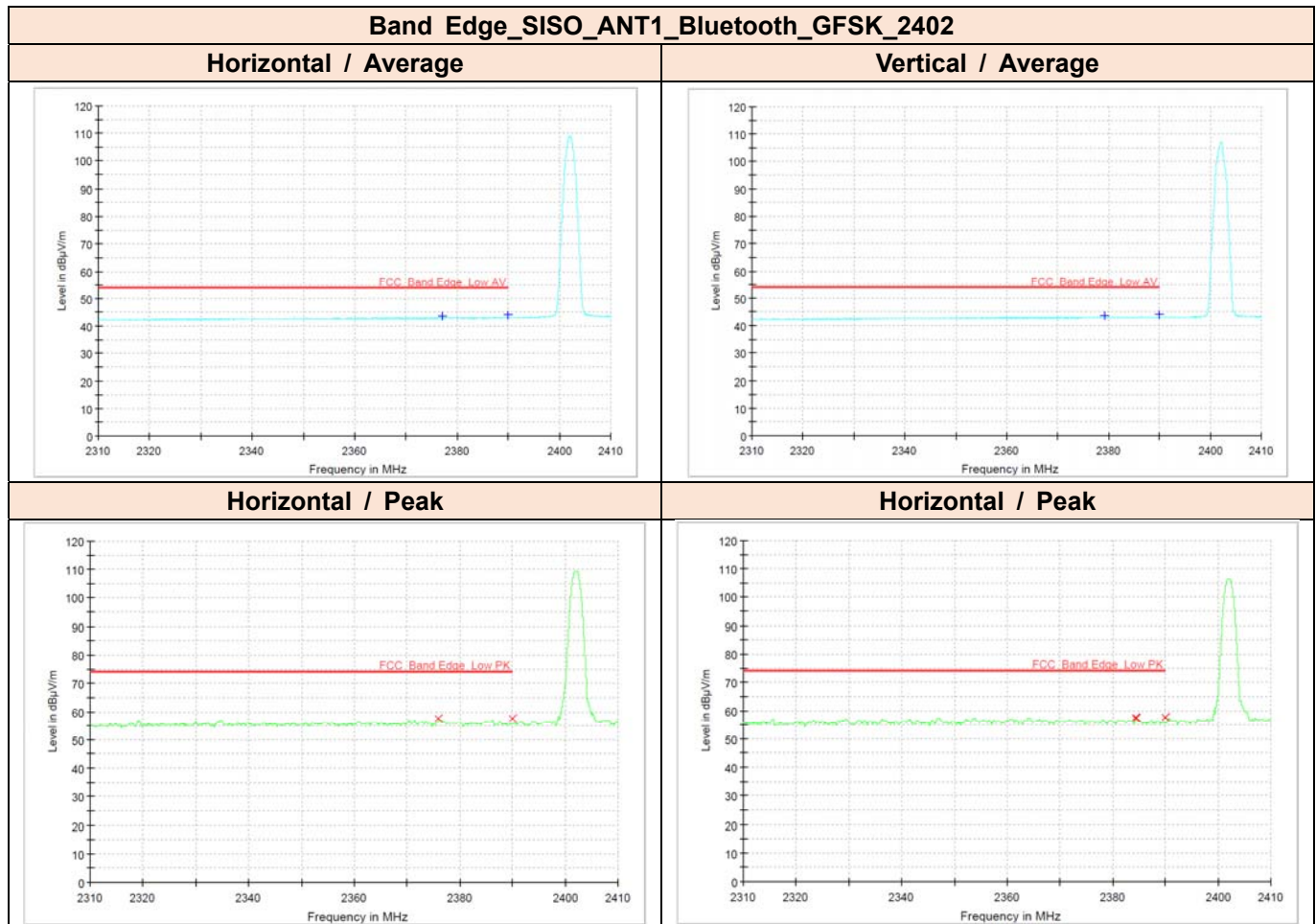
Frequency [MHz]	Peak Reading Value [dBµV/m]	Peak Result [dBµV/m]	AVG Reading Value [dBµV/m]	AVG Result [dBµV/m]	DCCF [dB]	Bandwidth [kHz]	Height [cm]	Pol [H/V]	Azimuth [deg]	Correction Factor [dB/m]	Margin [dB]	Limit [dBµV/m]
4 960.15	58.51	36.21	---	---	---	1 000	100	H	294	-22.30	37.79	74.00
7 400.02	56.44	37.14	---	---	---	1 000	100	H	0	-19.30	36.86	74.00
9 920.60	54.85	39.55	---	---	---	1 000	100	V	227	-15.30	34.45	74.00
12 400.10	54.59	40.19	---	---	---	1 000	100	V	14	-14.40	33.81	74.00
14 880.08	54.64	44.04	---	---	---	1 000	100	H	80	-10.60	29.96	74.00
17 360.55	53.90	45.40	---	---	---	1 000	100	V	221	-8.50	28.60	74.00
19 840.25	40.95	41.05	---	---	---	1 000	100	V	136	0.10	32.95	74.00
22 300.53	39.39	41.69	---	---	---	1 000	100	V	168	2.30	32.31	74.00
24 800.00	40.86	41.76	---	---	---	1 000	100	H	2	0.90	32.24	74.00

**Remarks**

1. Peak Result(dBµV/m) = Peak Reading Value(dBµV/m) + Correction Factor(dB)
2. Average Result(dBµV/m) = Average Reading Value(dBµV/m) + DCCF + Correction Factor(dB)
3. DCCF(Duty Cycle Correction Factor) = 10 x Log(1/Duty Cycle)
4. Correction Factor(dB) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor (dB)
5. Distance Factor(dB) = 20 x Log(3/4.5) [Reference Distance: 3 m, Measurement Distance: 4.5 m]
6. Margin(dB) = (Peak/Average) Result (dBµV/m) – (Peak/Average) Limit (dBµV/m)



### 3.6.5.4 Restricted Band Edge Measurements



Frequency [MHz]	AVG Reading Value [dBuV/m]	AVG Result [dBuV/m]	Peak Reading Value [dBuV/m]	Peak Result [dBuV/m]	DCCF [dB]	Bandwidth [kHz]	Height [cm]	Pol [H/V]	Azimuth [deg]	Correction Factor [dB/m]	AVG Margin [dB]	AVG Limit [dBuV/m]	Peak Margin [dB]	Peak Limit [dBuV/m]
2 377.20	34.80	43.80	-	-	-	1 000	340	H	190	9.00	10.20	54.00	-	-
2 390.00	34.90	44.00	-	-	-	1 000	370	H	220	9.10	10.00	54.00	-	-
2 376.00	-	-	48.80	57.80	-	1 000	332	H	185	9.00	-	-	16.20	74.00
2 390.00	-	-	48.40	57.50	-	1 000	400	H	196	9.10	-	-	16.60	74.00
2 379.20	34.80	43.80	-	-	-	1 000	362	V	158	9.00	10.20	54.00	-	-
2 390.00	34.80	43.90	-	-	-	1 000	350	V	127	9.10	10.10	54.00	-	-
2 384.40	-	-	48.60	57.70	-	1 000	250	V	187	9.10	-	-	16.30	74.00
2 390.00	-	-	48.60	57.70	-	1 000	380	V	190	9.10	-	-	16.30	74.00

#### Remarks

1. Peak Result(dBuV/m) = Peak Reading Value(dBuV/m) + Correction Factor(dB)
2. Average Result(dBuV/m) = Average Reading Value(dBuV/m) + DCCF + Correction Factor(dB)
3. DCCF(Duty Cycle Correction Factor) = 10 x Log(1/Duty Cycle)
4. Correction Factor(dB) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor (dB)
5. Distance Factor(dB) = 20 x Log(3/4.5) [Reference Distance: 3 m, Measurement Distance: 4.5 m]
6. Margin(dB) = (Peak/Average) Result (dBuV/m) – (Peak/Average) Limit (dBuV/m)







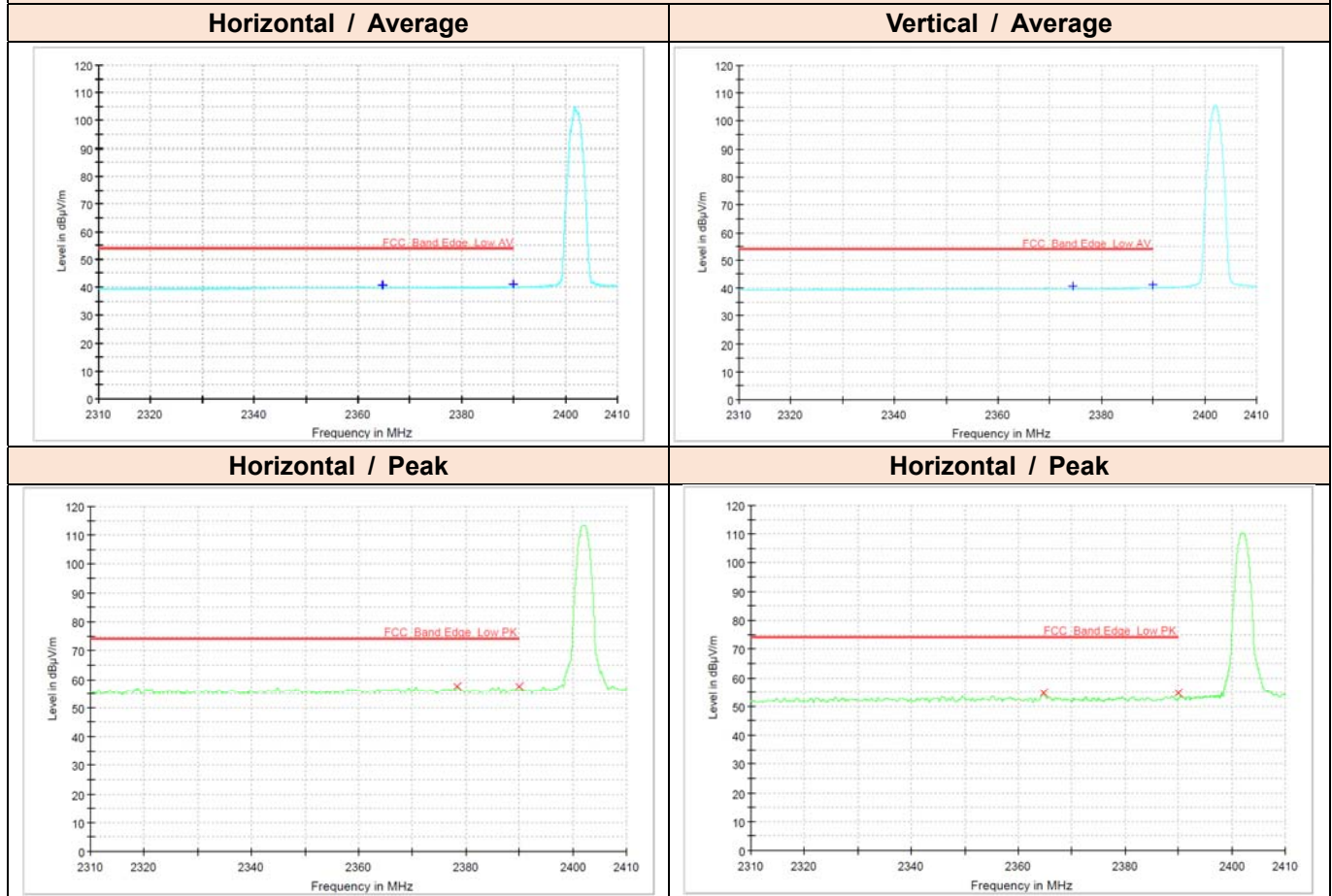








**Band Edge\_SISO\_ANT2\_Bluetooth\_8DPSK\_2402**



Frequency [MHz]	AVG Reading Value [dBµV/m]	AVG Result [dBµV/m]	Peak Reading Value [dBµV/m]	Peak Result [dBµV/m]	DCCF [dB]	Bandwidth [kHz]	Height [cm]	Pol [H/V]	Azimuth [deg]	Correction Factor [dB/m]	AVG Margin [dB]	AVG Limit [dBµV/m]	Peak Margin [dB]	Peak Limit [dBµV/m]
2 364.80	31.80	40.80	-	-	-	1 000	384	H	170	9.00	13.20	54.00	-	-
2 390.00	31.90	41.00	-	-	-	1 000	380	H	192	9.10	13.00	54.00	-	-
2 378.40	-	-	48.60	57.60	-	1 000	311	H	177	9.00	-	-	16.40	74.00
2 390.00	-	-	48.70	57.80	-	1 000	370	H	180	9.10	-	-	16.20	74.00
2 374.40	31.90	40.90	-	-	-	1 000	372	V	175	9.00	13.20	54.00	-	-
2 390.00	32.10	41.20	-	-	-	1 000	400	V	185	9.10	12.90	54.00	-	-
2 364.80	-	-	45.60	54.60	-	1 000	318	V	176	9.00	-	-	19.40	74.00
2 390.00	-	-	45.50	54.60	-	1 000	365	V	194	9.10	-	-	19.40	74.00

**Remarks**

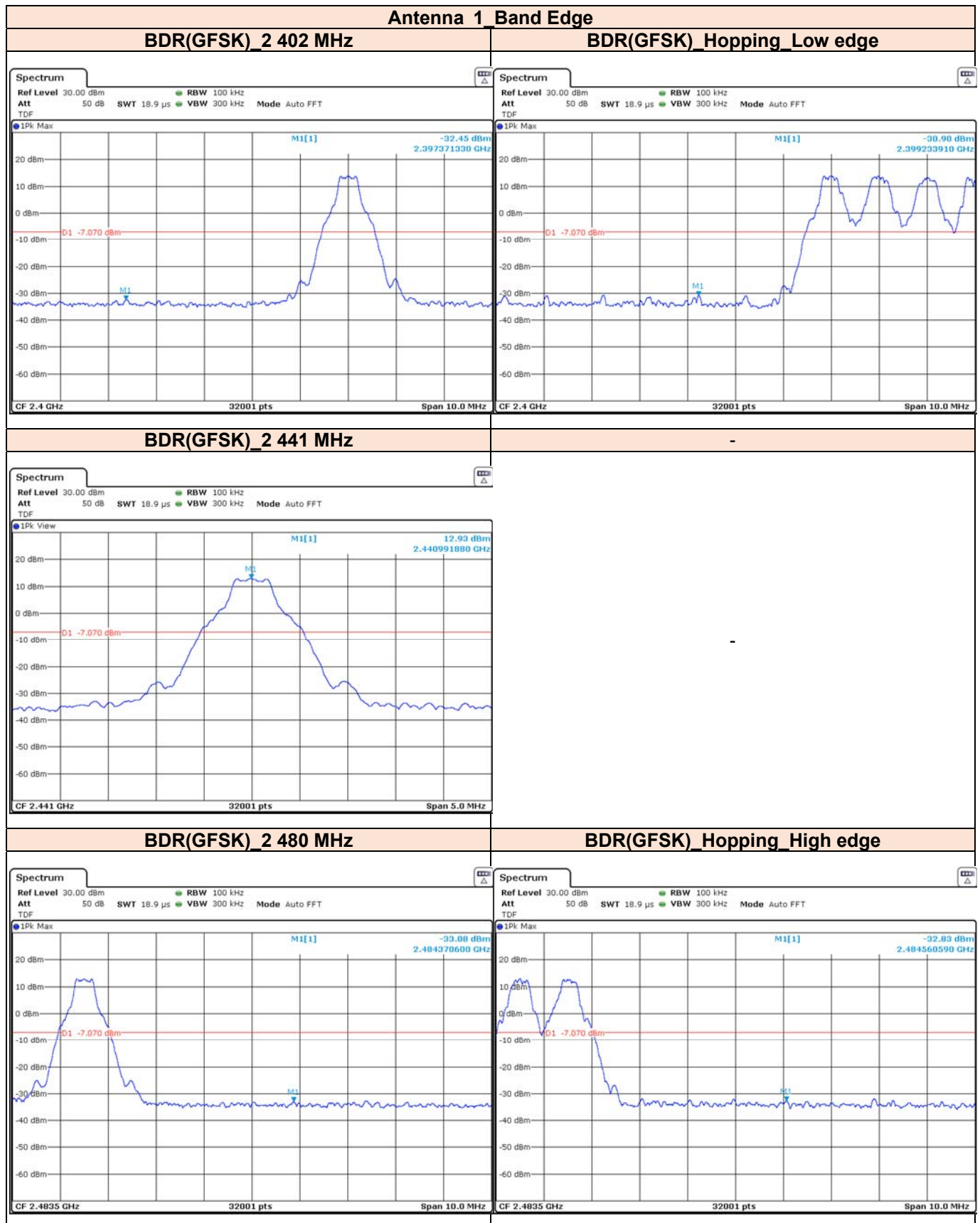
1. Peak Result(dBµV/m) = Peak Reading Value(dBµV/m) + Correction Factor(dB)
2. Average Result(dBµV/m) = Average Reading Value(dBµV/m) + DCCF + Correction Factor(dB)
3. DCCF(Duty Cycle Correction Factor) = 10 x Log(1/Duty Cycle)
4. Correction Factor(dB) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor (dB)
5. Distance Factor(dB) = 20 x Log(3/4.5) [Reference Distance: 3 m, Measurement Distance: 4.5 m]
6. Margin(dB) = (Peak/Average) Result (dBµV/m) – (Peak/Average) Limit (dBµV/m)







### 3.6.6 Test Result of Conducted Spurious Emission

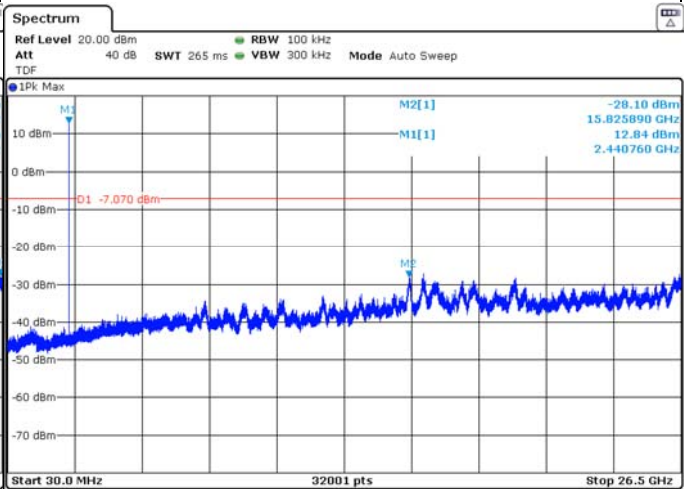
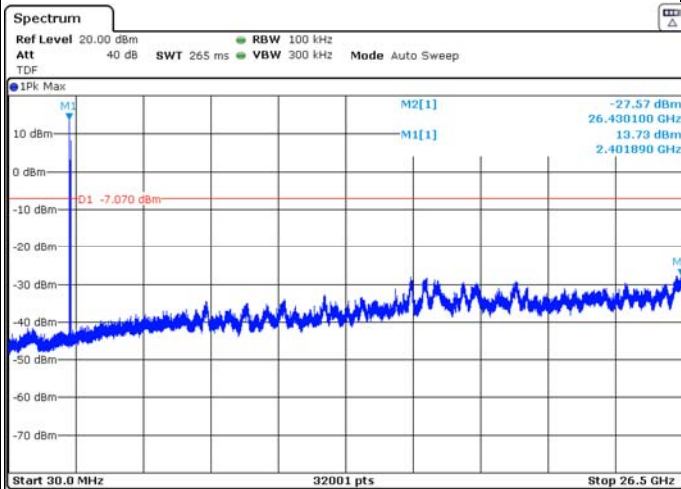




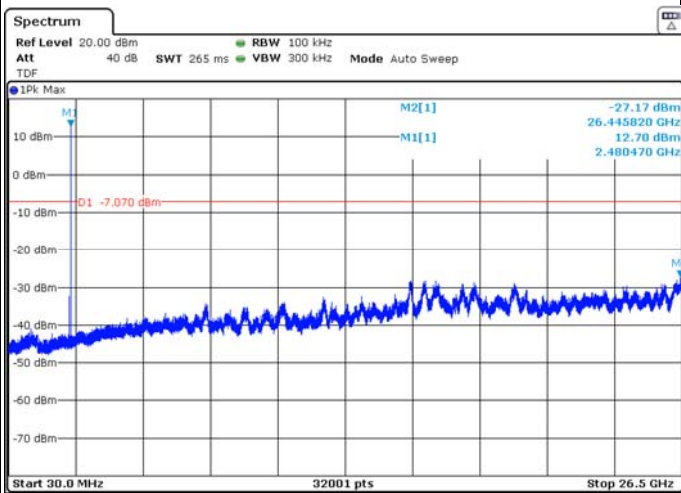
### Antenna 1\_Spurious

#### BDR(GFSK)\_2 402 MHz

#### BDR(GFSK)\_2 441 MHz



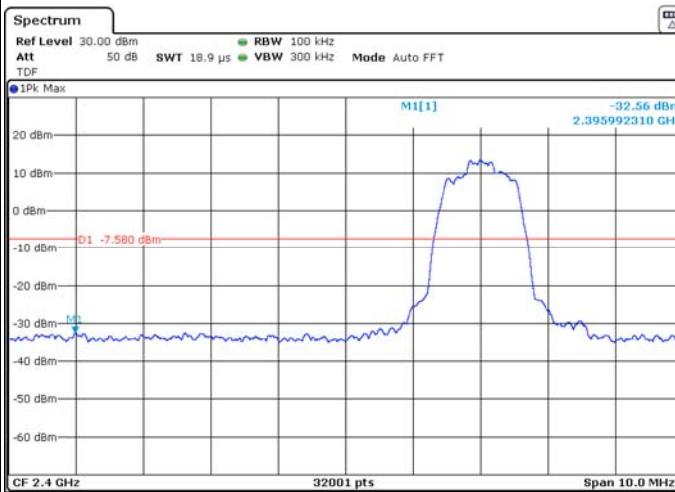
#### BDR(GFSK)\_2 480 MHz



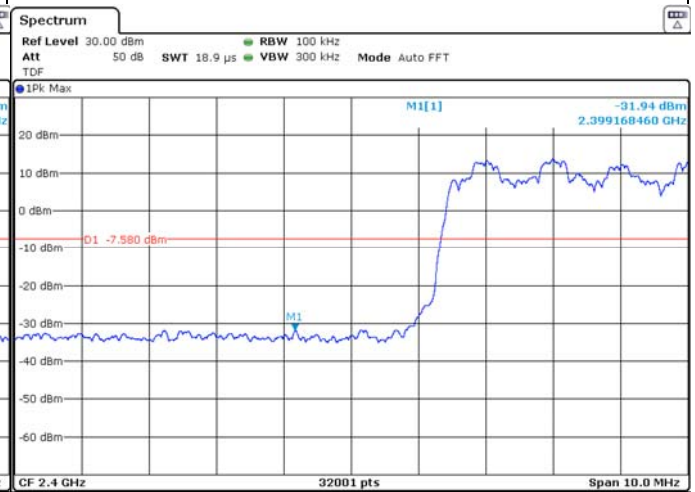


### Antenna 1 Band Edge

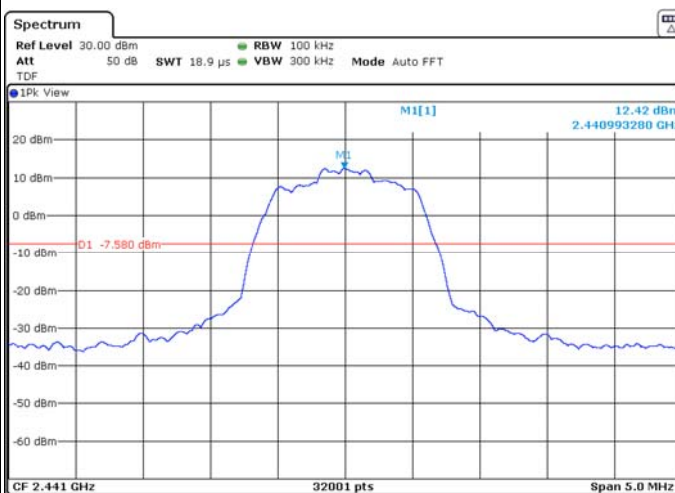
#### EDR( $\pi/4$ DQPSK)\_2 402 MHz



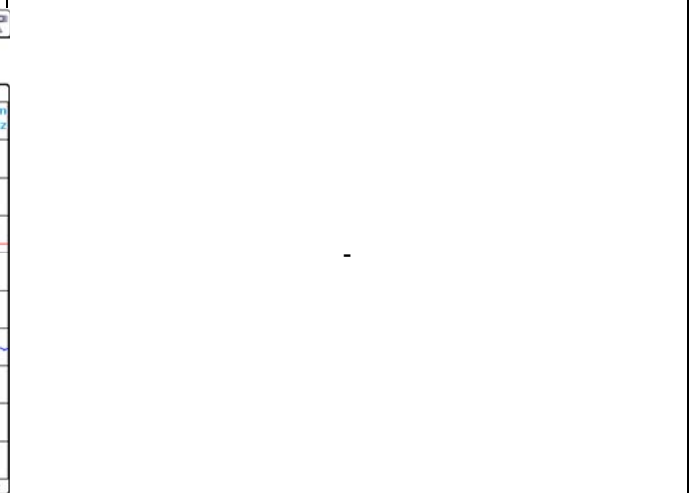
#### EDR( $\pi/4$ DQPSK)\_Hopping\_Low edge



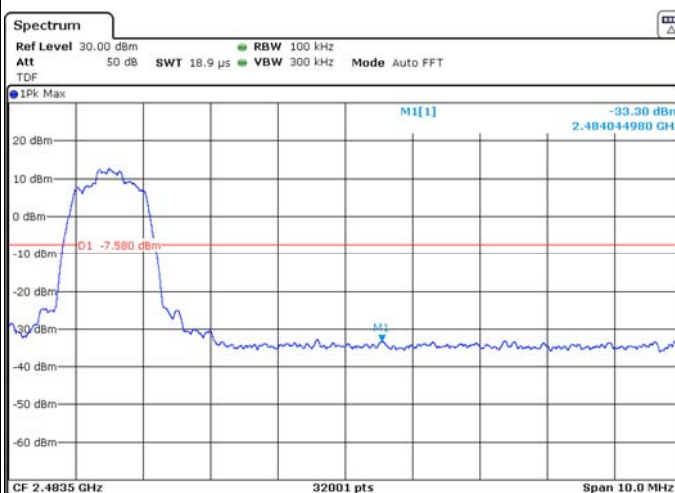
#### EDR( $\pi/4$ DQPSK)\_2 441 MHz



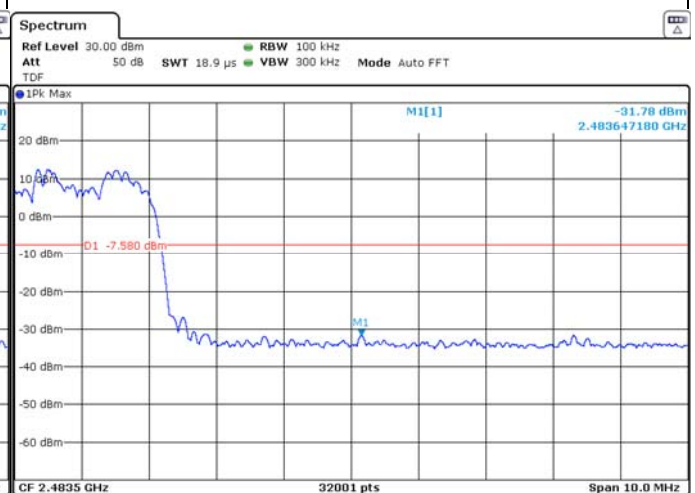
#### -



#### EDR( $\pi/4$ DQPSK)\_2 480 MHz



#### EDR( $\pi/4$ DQPSK)\_Hopping\_High edge



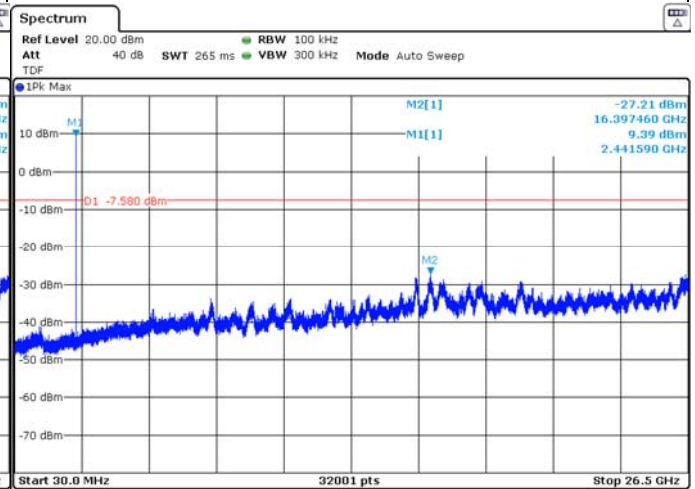
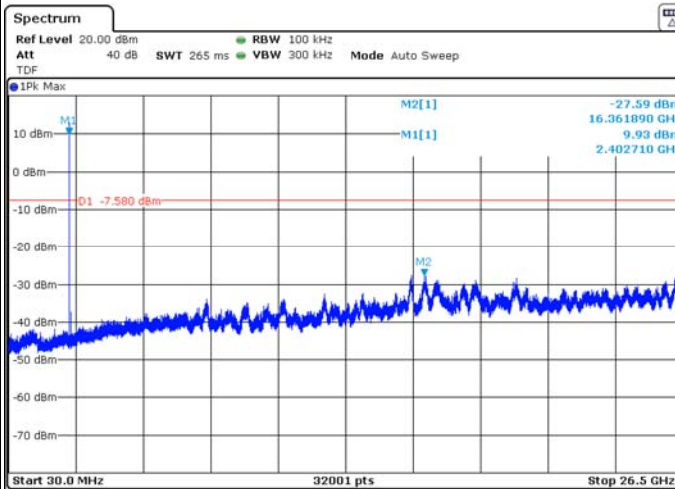




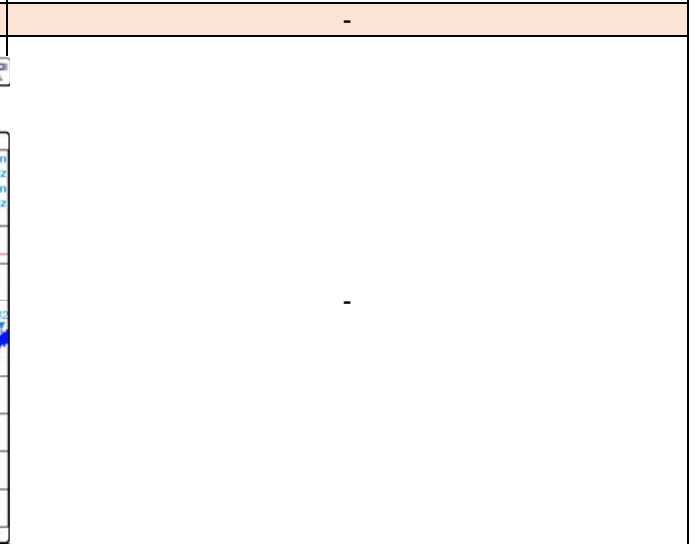
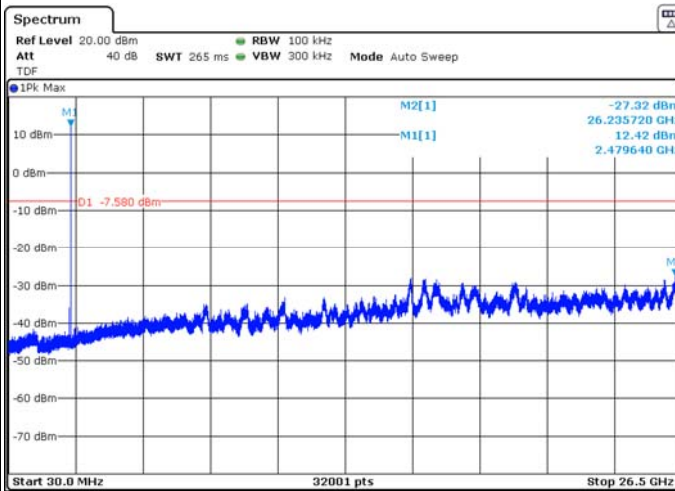
### Antenna 1\_Spurious

#### EDR( $\pi/4$ DQPSK)\_2 402 MHz

#### EDR( $\pi/4$ DQPSK)\_2 441 MHz



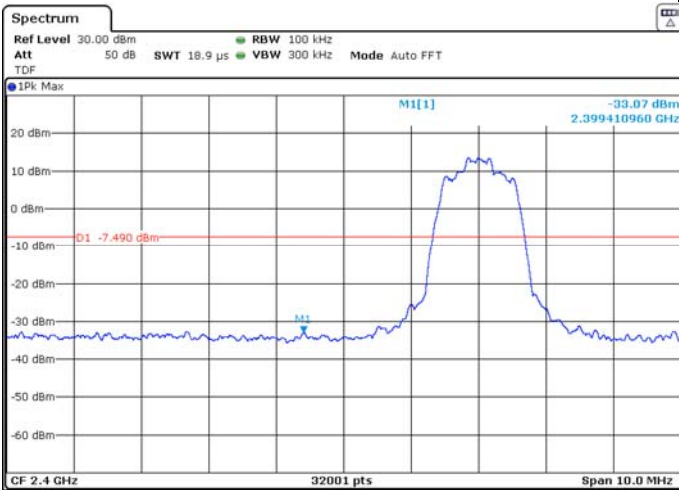
#### EDR( $\pi/4$ DQPSK)\_2 480 MHz



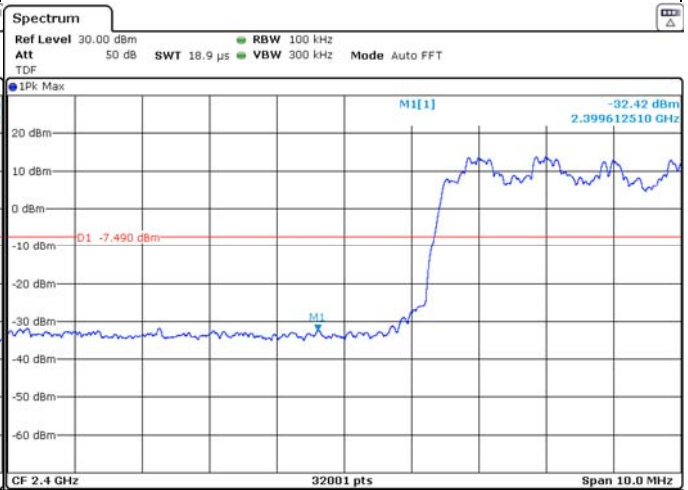


### Antenna 1 Band Edge

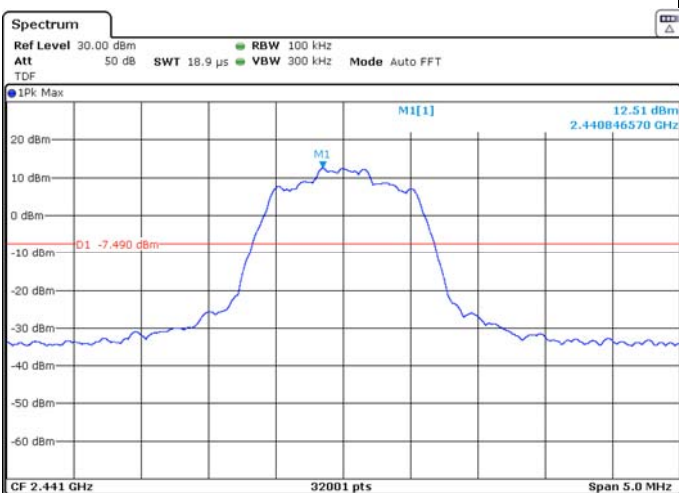
#### EDR(8DPSK)\_2 402 MHz



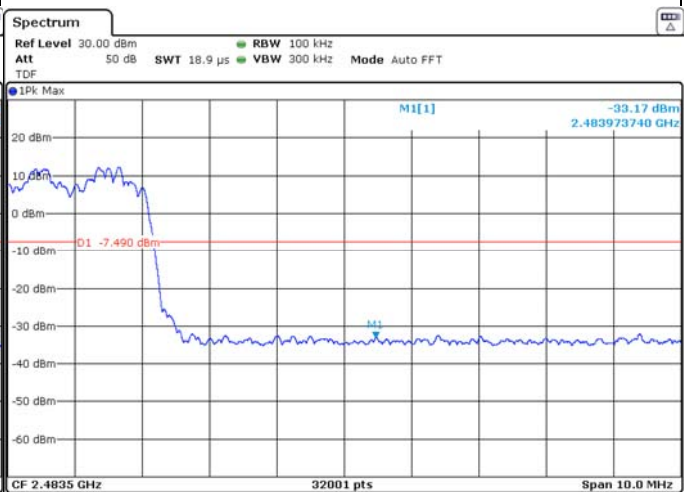
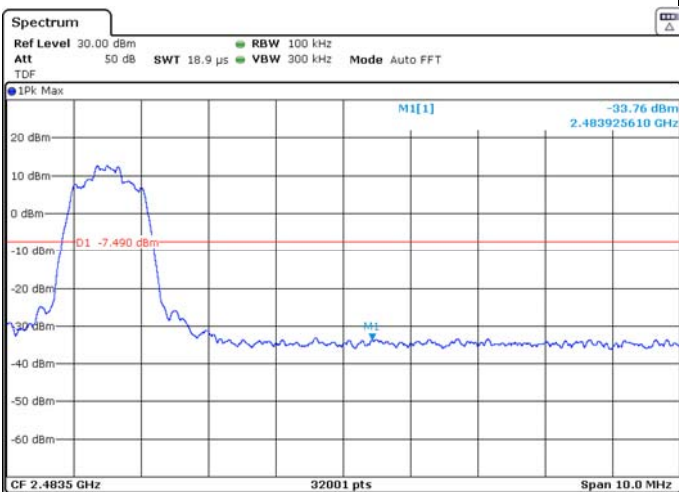
#### EDR(8DPSK)\_Hopping\_Low edge



#### EDR(8DPSK)\_2 441 MHz



#### EDR(8DPSK)\_Hopping\_High edge

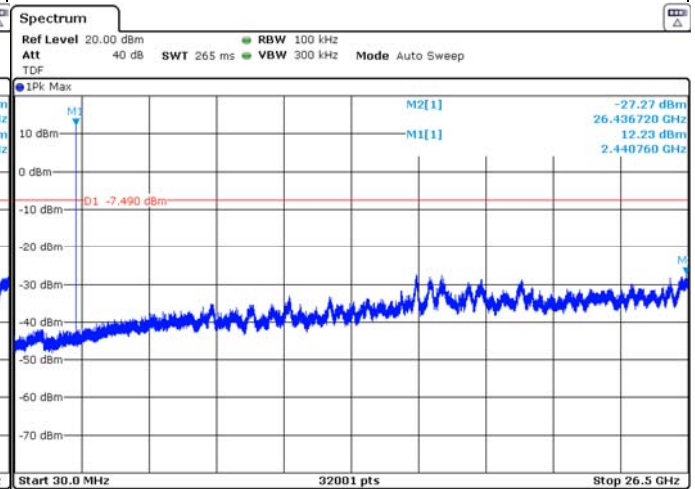
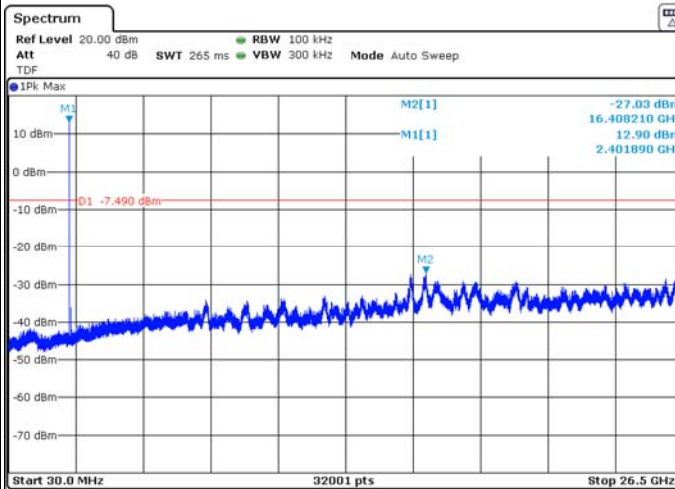




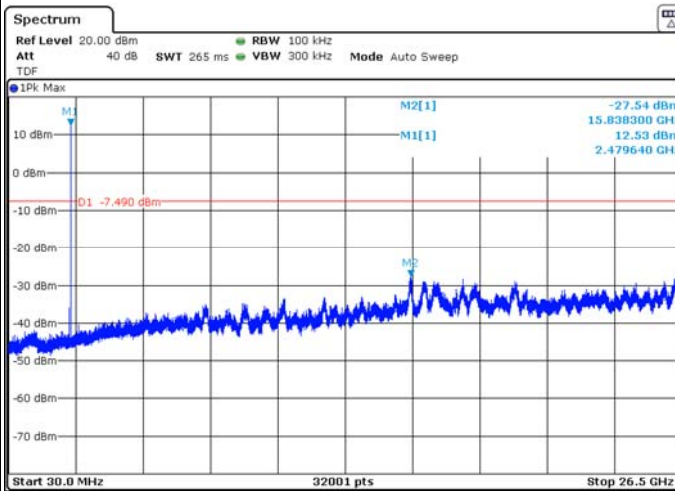
### Antenna 1\_Spurious

#### EDR(8DPSK)\_2 402 MHz

#### EDR(8DPSK)\_2 441 MHz



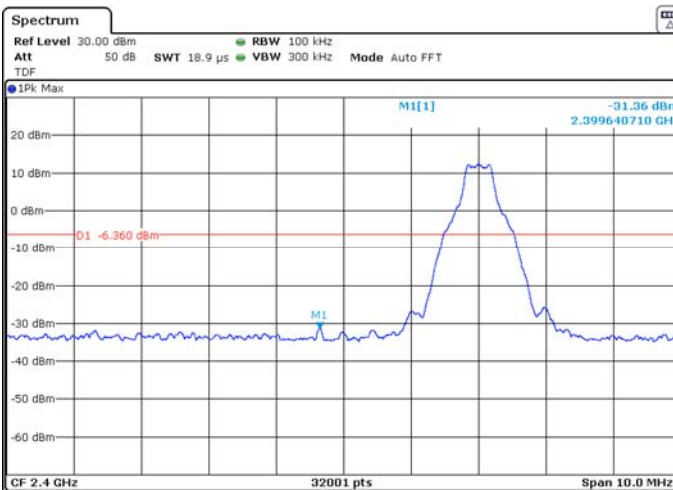
#### EDR(8DPSK)\_2 480 MHz



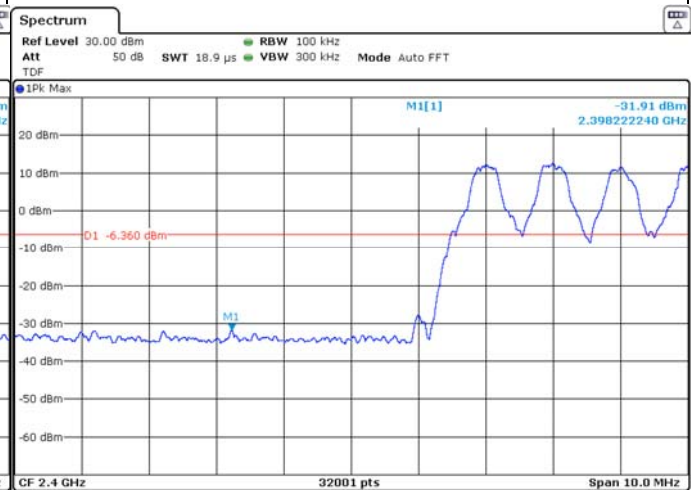


### Antenna 2 Band Edge

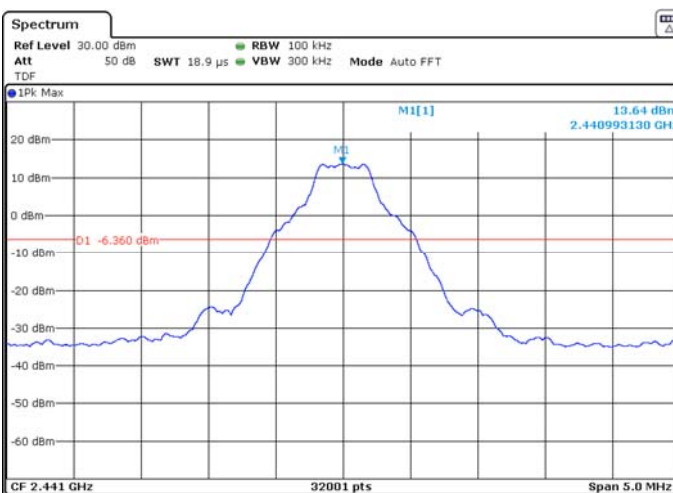
#### BDR(GFSK)\_2 402 MHz



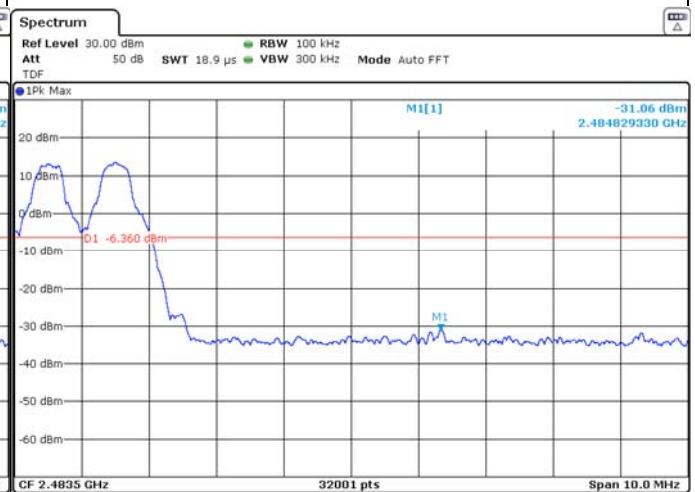
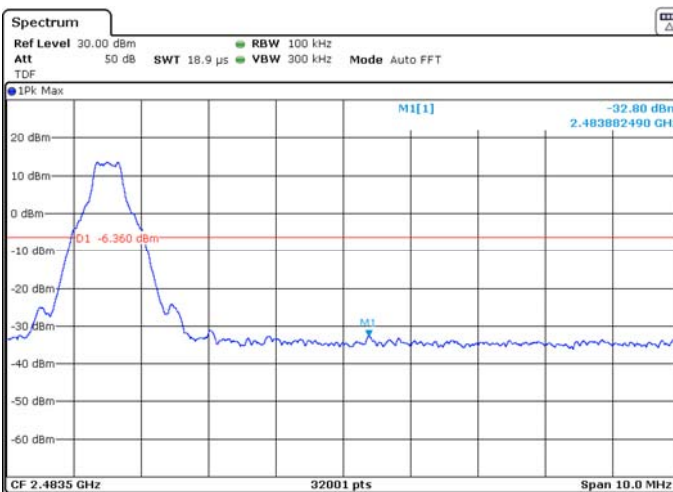
#### BDR(GFSK)\_Hopping\_Low edge



#### BDR(GFSK)\_2 441 MHz



#### BDR(GFSK)\_Hopping\_High edge



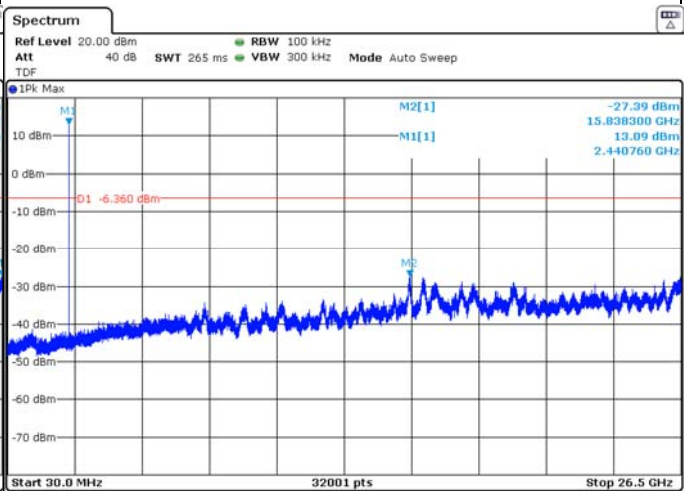
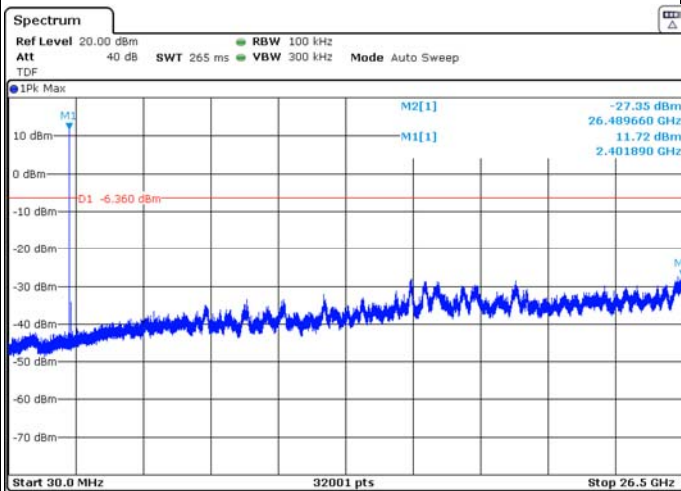




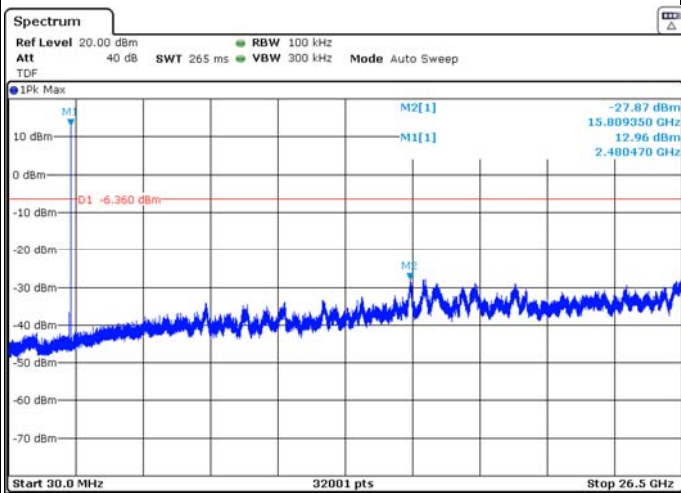
### Antenna 2\_Spurious

#### BDR(GFSK)\_2 402 MHz

#### BDR(GFSK)\_2 441 MHz



#### BDR(GFSK)\_2 480 MHz

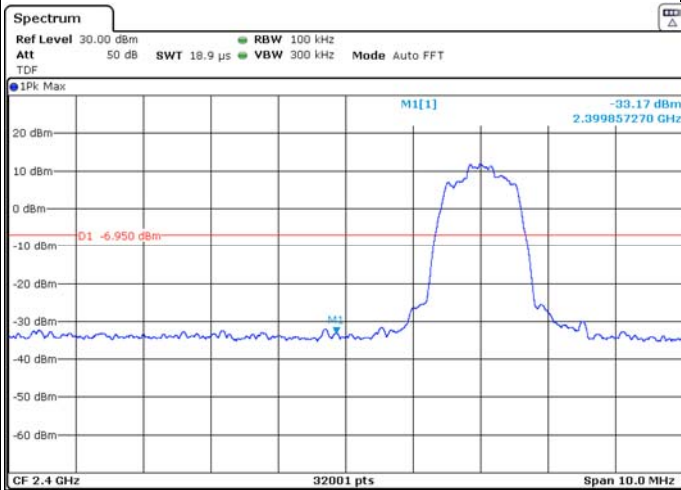




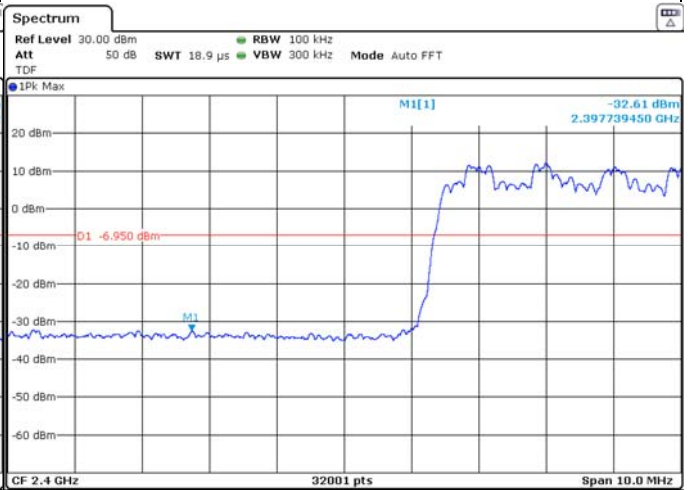
BUREAU  
VERITAS

### Antenna 2 Band Edge

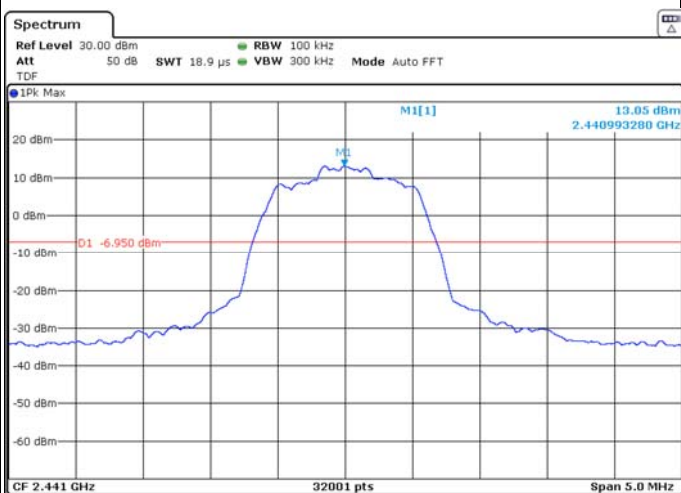
#### EDR( $\pi/4$ DQPSK)\_2 402 MHz



#### EDR( $\pi/4$ DQPSK)\_Hopping\_Low edge



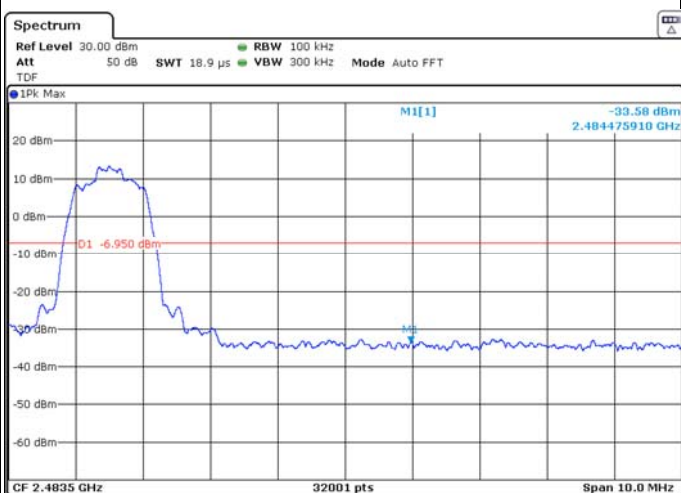
#### EDR( $\pi/4$ DQPSK)\_2 441 MHz



#### -



#### EDR( $\pi/4$ DQPSK)\_2 480 MHz



#### EDR( $\pi/4$ DQPSK)\_Hopping\_High edge

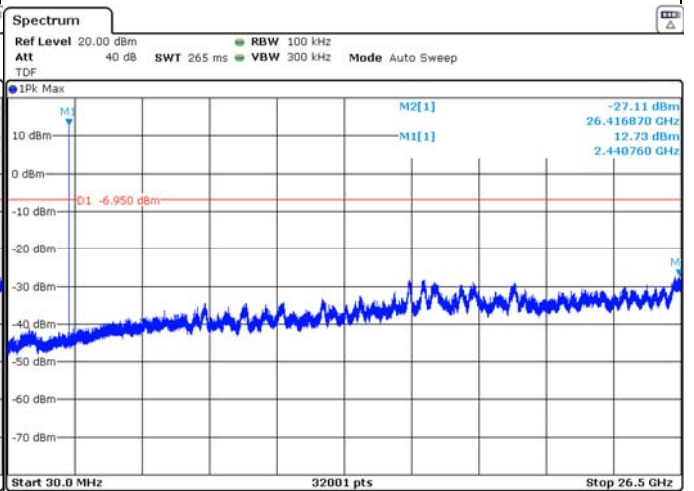
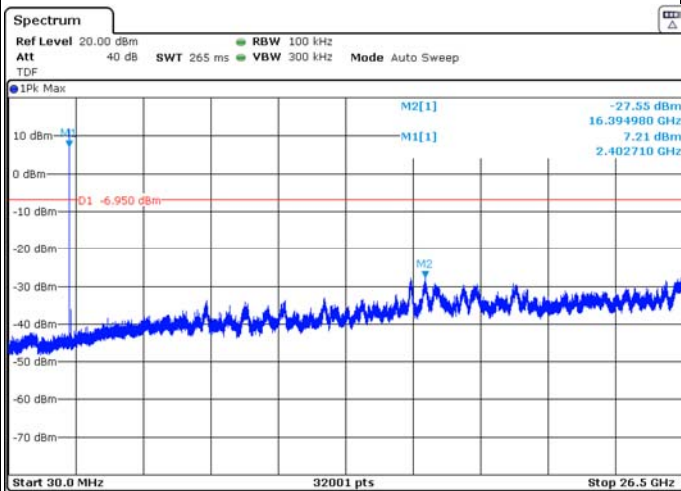




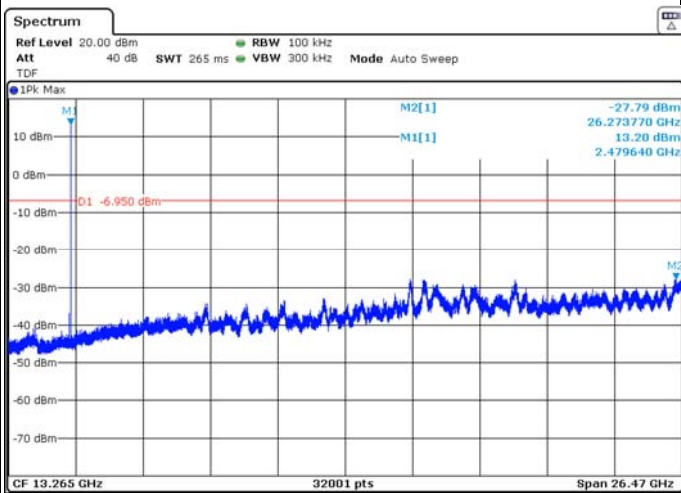
### Antenna 2\_Spurious

#### EDR( $\pi/4$ DQPSK)\_2 402 MHz

#### EDR( $\pi/4$ DQPSK)\_2 441 MHz



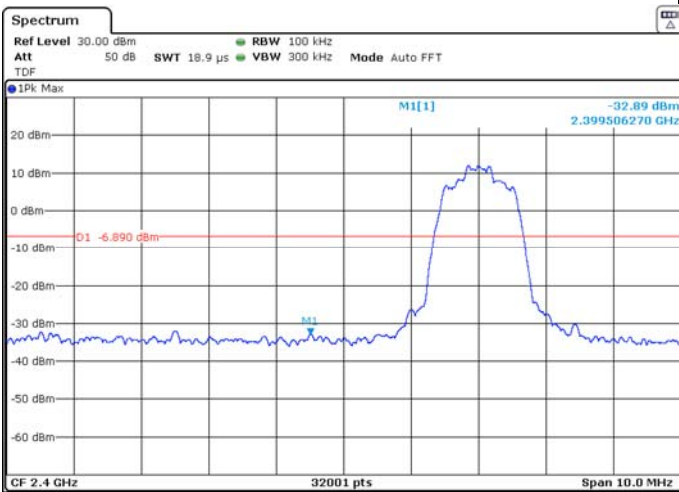
#### EDR( $\pi/4$ DQPSK)\_2 480 MHz



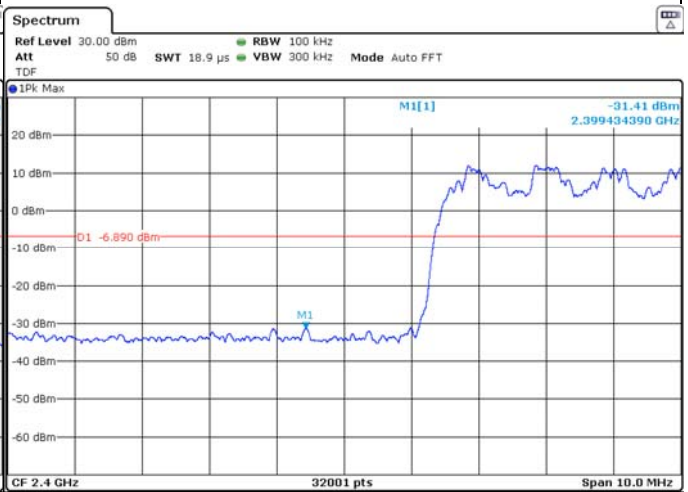


### Antenna 2 Band Edge

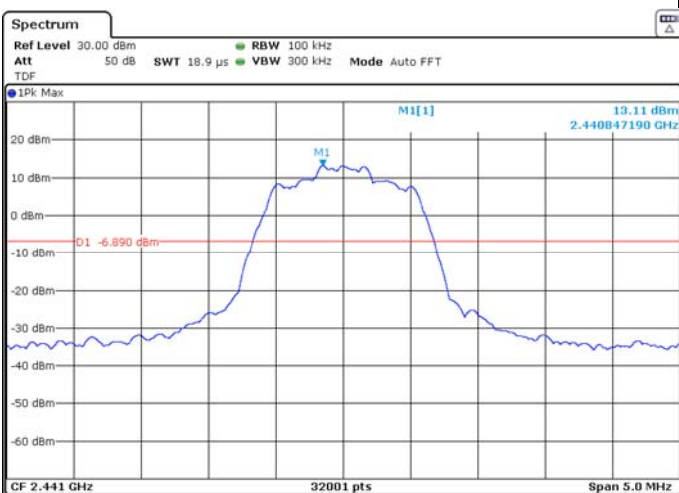
#### EDR(8DPSK)\_2 402 MHz



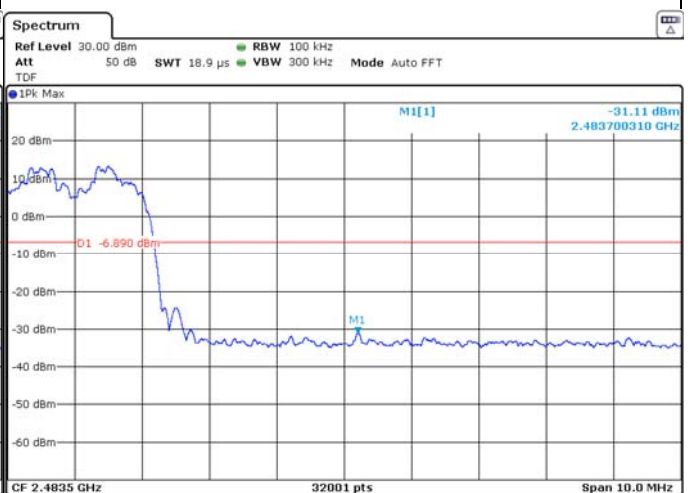
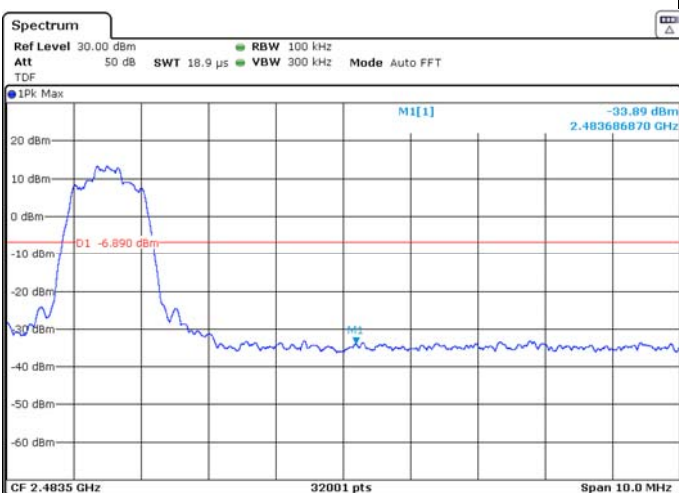
#### EDR(8DPSK)\_Hopping\_Low edge



#### EDR(8DPSK)\_2 441 MHz



#### EDR(8DPSK)\_Hopping\_High edge



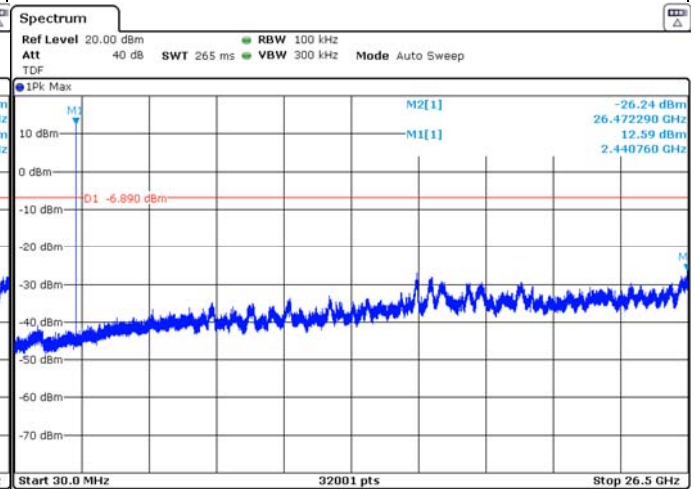
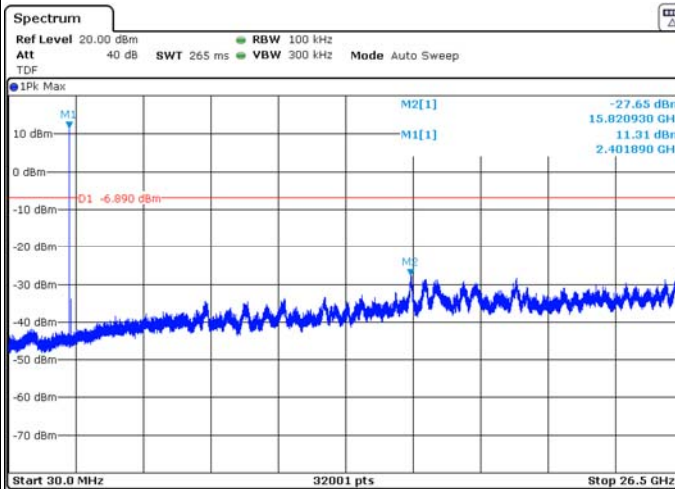




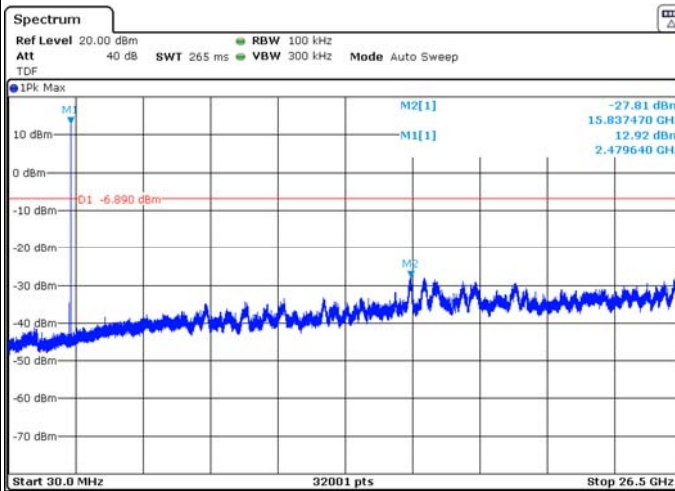
### Antenna 2\_Spurious

#### EDR(8DPSK)\_2 402 MHz

#### EDR(8DPSK)\_2 441 MHz



#### EDR(8DPSK)\_2 480 MHz



## 3.7 AC Conducted Emissions (150 kHz to 30 MHz)

### 3.7.1 Regulation

§15.207(a) : Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50  $\mu$ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\* Decreases with the logarithm of the frequency.

### 3.7.2 Test Procedure

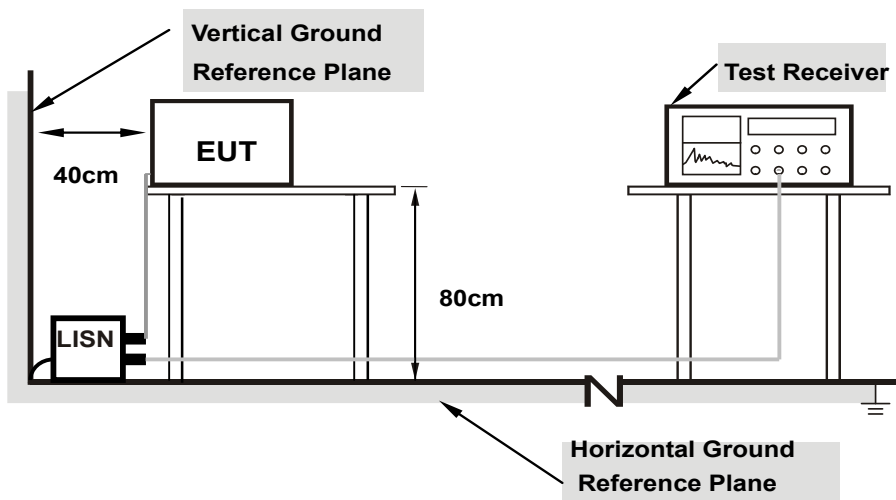
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm / 50  $\mu$ H of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

**Remark :** The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz – 30 MHz.

### 3.7.3 Deviation from Test Standard

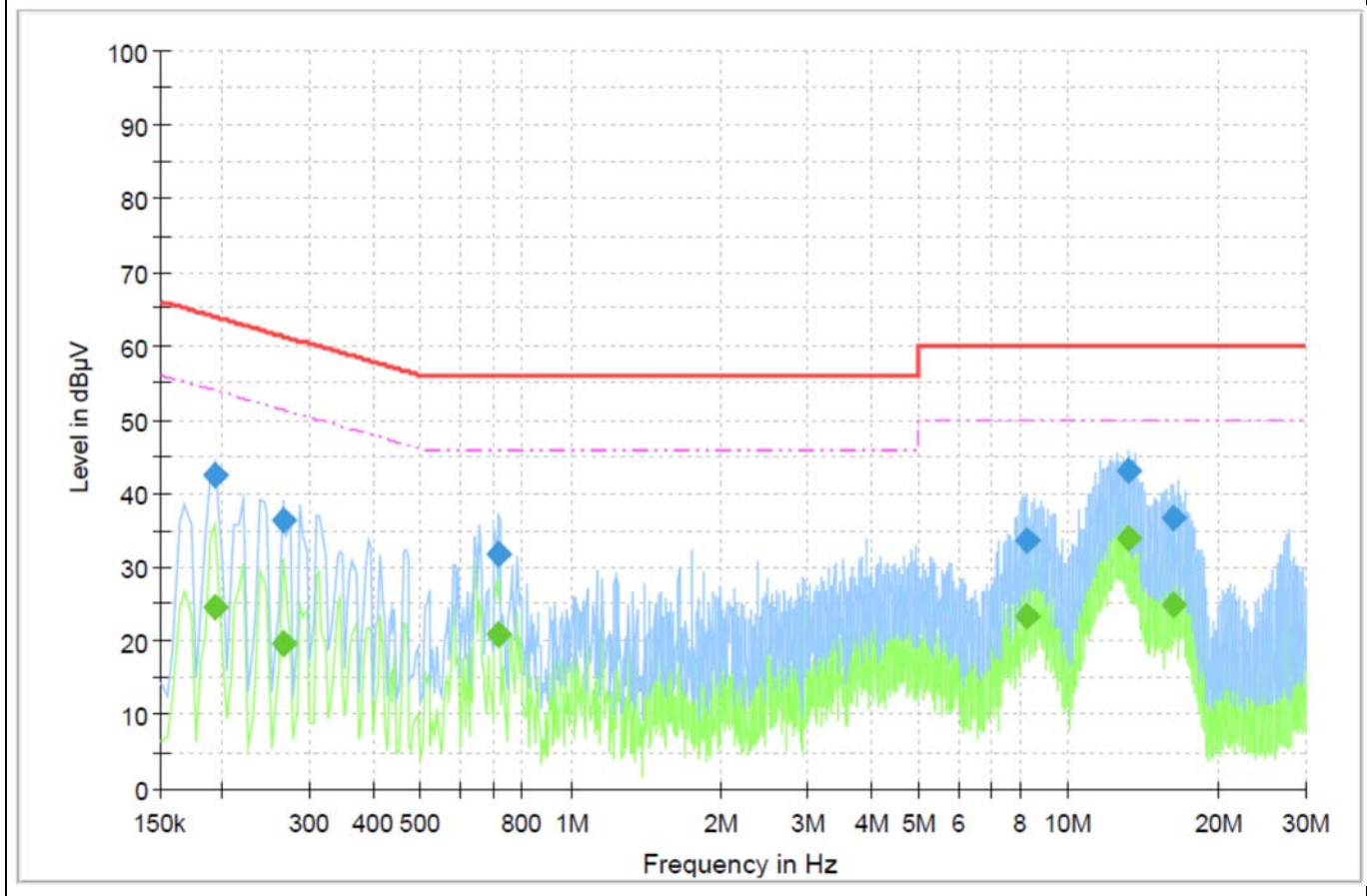
No deviation.

### 3.7.4 Test Setup



### 3.7.5 Test Result

**SISO\_ANT1\_Bluetooth\_GFSK\_2402**



Frequency [MHz]	Quasi Peak Reading Value [dBuV]	Quasi Peak Result [dBuV]	CAV Reading Value [dBuV]	CAV Result [dBuV]	Line	Correction Factor [dB/m]	Quasi Peak Margin [dBuV]	Quasi Peak Limit [dBuV]	CAV Margin [dBuV]	CAV Limit [dBuV]
0.19	32.51	42.51	-	-	N	10.00	21.36	63.87	-	-
0.19	-	-	14.32	24.32	N	10.00	-	-	29.55	53.87
0.26	-	-	9.65	19.45	L1	9.80	-	-	31.85	51.30
0.26	26.57	36.37	-	-	L1	9.80	24.93	61.30	-	-
0.72	-	-	10.73	20.73	N	10.00	-	-	25.27	46.00
0.72	21.89	31.89	-	-	N	10.00	24.11	56.00	-	-
8.27	-	-	13.19	23.29	L1	10.10	-	-	26.71	50.00
8.27	23.66	33.76	-	-	L1	10.10	26.24	60.00	-	-
13.19	-	-	23.61	33.91	L1	10.30	-	-	16.09	50.00
13.19	32.76	43.06	-	-	L1	10.30	16.94	60.00	-	-
16.21	26.35	36.85	-	-	N	10.50	23.15	60.00	-	-
16.21	-	-	14.32	24.82	N	10.50	-	-	25.18	50.00

#### Remarks

- Final Value (QP and/or CAV) = Reading Value (QP and/or CAV) + Corr. (LISN Insertion Loss + Cable Loss)  
Margin (QP and/or CAV) = Limit – Final Value (QP and/or CAV)  
QP = Quasi-Peak, CAV = CISPR-Average, Corr. = Correction Factor
- Two graphs measured for both Live (L1) and Neutral (N) of the LISN are combined into one graph.



## Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services Korea. Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

**Test Firm Name : BV CPS ADT Korea Ltd.**

**Address : Innoplex No.2 106, Sinwon-ro 306, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675 KOREA**

**FCC**

**Designation Number : KR0158**

**Test Firm Registration Number : 666061**

**ISED**

**Designation Number : KR0158**

**Test Firm Registration Number : 25944**

If you have any comments, please feel free to contact us at the following:

**Email:** [Meyer.Shin@bureauveritas.com](mailto:Meyer.Shin@bureauveritas.com)

**Web Site:** [www.bureauveritas.co.kr/cps/eaw](http://www.bureauveritas.co.kr/cps/eaw)

The address and road map of all our labs can be found in our web site also.

**- End of report -**