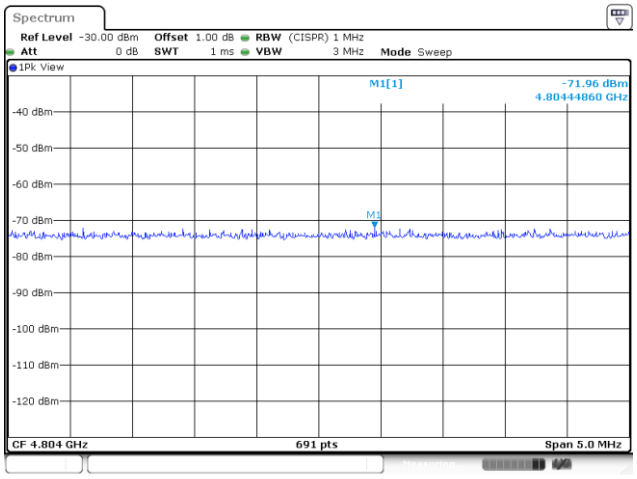
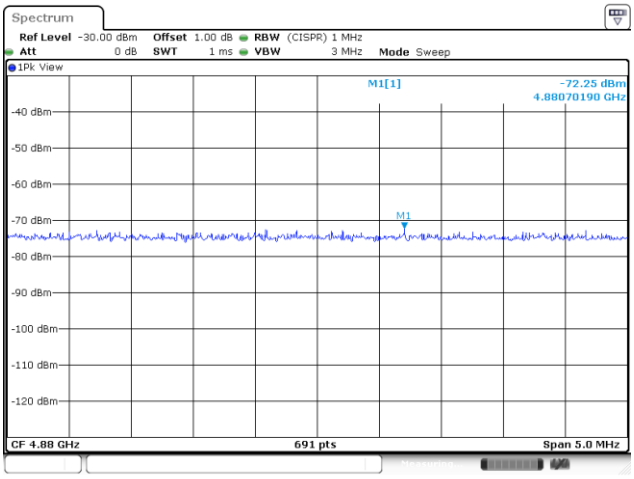
BT LE-1Mbps - Test Plots

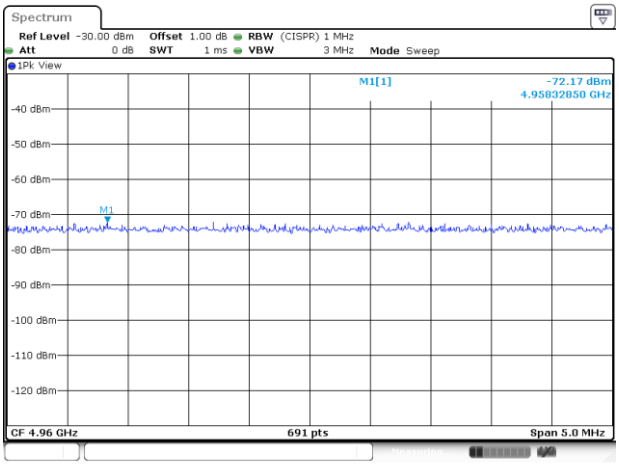
2402MHz - 4804MHz - PK



2440MHz 4880MHz - PK



2480 MHz - 4960MHz - PK



Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band							
Modulation Mode		BT LE-2Mbps		**Frequency**	2402MHz		
Freq. (MHz)	**Remark**	**Max Value (dBm)**	**DG (dBi)**	**EIRP (dBm)**	**E-Field* (dBuV/m)**	**E-Field Limit (dBuV/m)**	**E-Field Margin (dB)**
4804.00	PK	-71.82	2.00	-69.82	25.44	74.00	-48.56
4804.00	AV	-	2.00	-	-	54.00	-

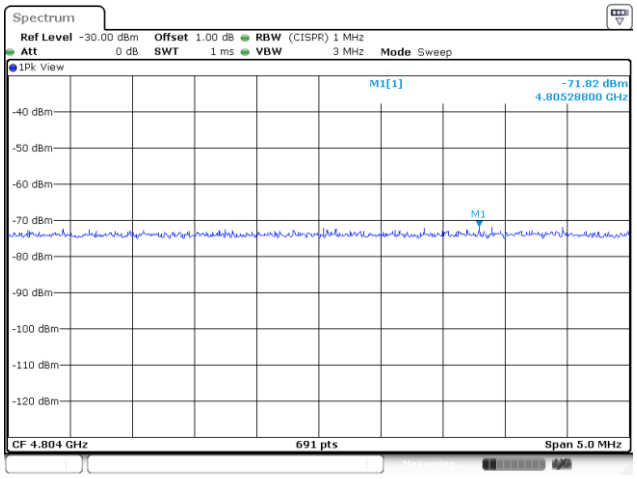
Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band							
Modulation Mode		BT LE-2Mbps		**Frequency**	2440MHz		
Freq. (MHz)	**Remark**	**Max Value (dBm)**	**DG (dBi)**	**EIRP (dBm)**	**E-Field* (dBuV/m)**	**E-Field Limit (dBuV/m)**	**E-Field Margin (dB)**
4880.00	PK	-72.32	2.00	-70.32	24.94	74.00	-49.06
4880.00	AV	-	2.00	-	-	54.00	-

Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band							
Modulation Mode		BT LE-2Mbps		**Frequency**	2480MHz		
Freq. (MHz)	**Remark**	**Max Value (dBm)**	**DG (dBi)**	**EIRP (dBm)**	**E-Field* (dBuV/m)**	**E-Field Limit (dBuV/m)**	**E-Field Margin (dB)**
4960.00	PK	-72.22	2.00	-70.22	25.04	74.00	-48.96
4960.00	AV	-	2.00	-	-	54.00	-

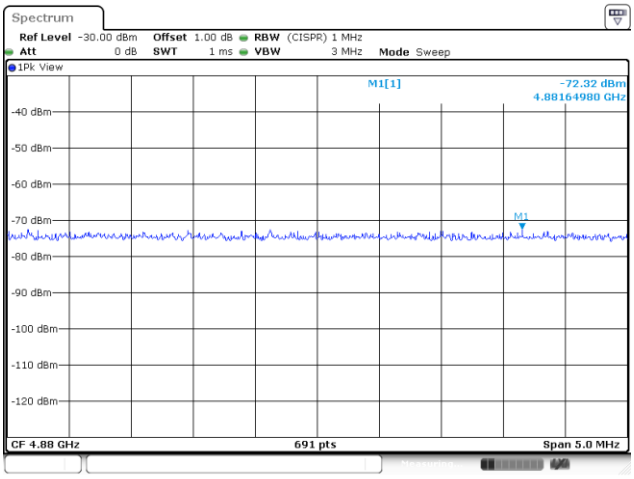
Note:
1. If the PK margin greater than 20 dB, there is no need to get AVG reading.
2. DG = Directional Gain
3. E-Field = EIRP – 20log(3) + 104.8

BT LE-2Mbps - Test Plots

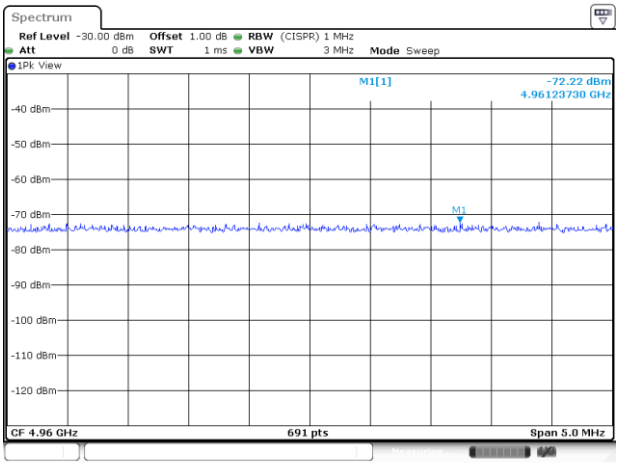
2402MHz - 4804MHz - PK



2440MHz 4880MHz - PK



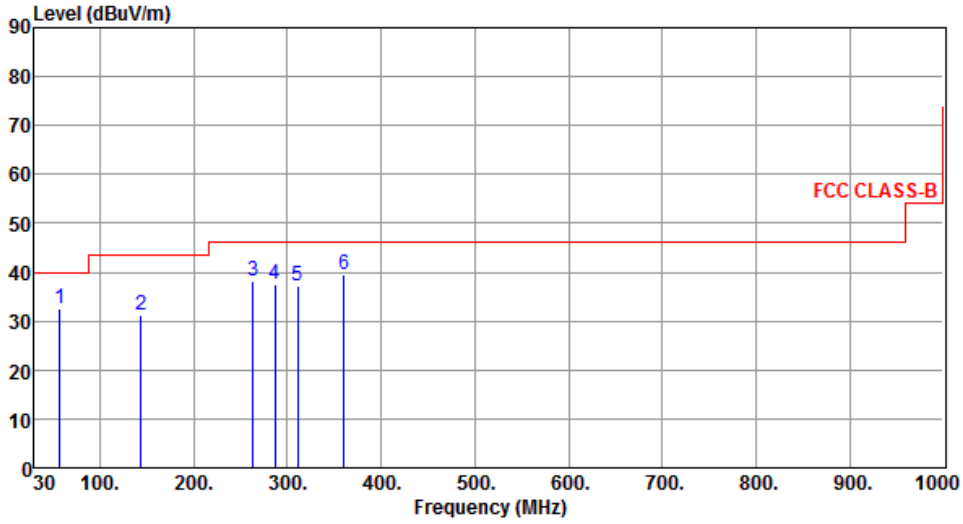
2480 MHz - 4960MHz - PK



Highest power level - Configuration 7: Laird NFC + 50Ω terminator

3.5.8 Transmitter Radiated Unwanted Emissions (Below 1GHz)

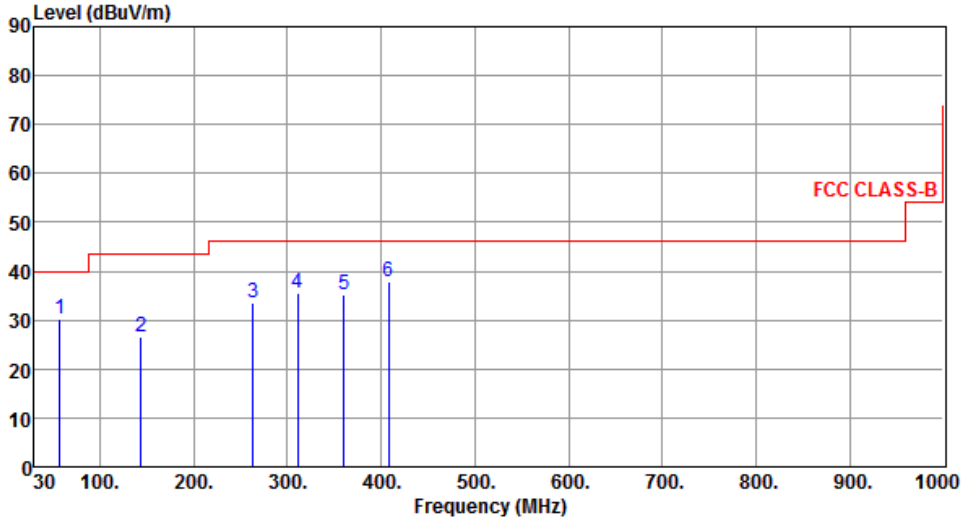
Modulation	GFSK/125kbps	**Test Freq. (MHz)**	2480
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	57.21	32.47	40.00	-7.53	41.53	-9.06	Peak	---	---
2	143.49	31.35	43.50	-12.15	40.34	-8.99	Peak	---	---
3	263.66	38.26	46.00	-7.74	48.03	-9.77	Peak	---	---
4	287.12	37.54	46.00	-8.46	46.32	-8.78	Peak	---	---
5	311.10	37.35	46.00	-8.65	45.42	-8.07	Peak	---	---
6	360.68	39.58	46.00	-6.42	46.53	-6.95	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation	GFSK/125kbps	Test Freq. (MHz)	2480
Polarization	Vertical		

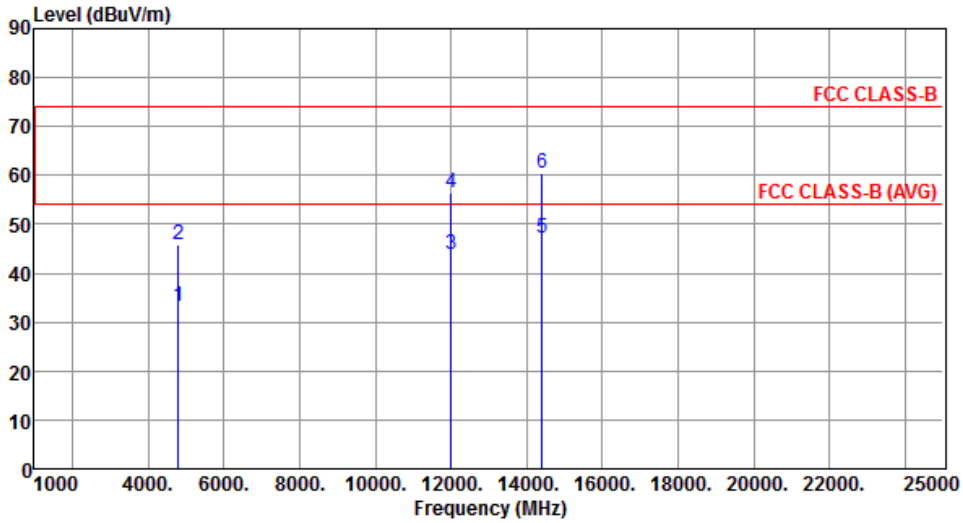


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	57.21	30.26	40.00	-9.74	39.32	-9.06	Peak	---	---
2	143.49	26.43	43.50	-17.07	35.42	-8.99	Peak	---	---
3	263.66	33.41	46.00	-12.59	43.18	-9.77	Peak	---	---
4	311.25	35.57	46.00	-10.43	43.63	-8.06	Peak	---	---
5	360.69	35.16	46.00	-10.84	42.11	-6.95	Peak	---	---
6	408.30	37.88	46.00	-8.12	43.50	-5.62	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

3.5.9 Transmitter Radiated Unwanted Emissions (Above 1GHz) for GFSK

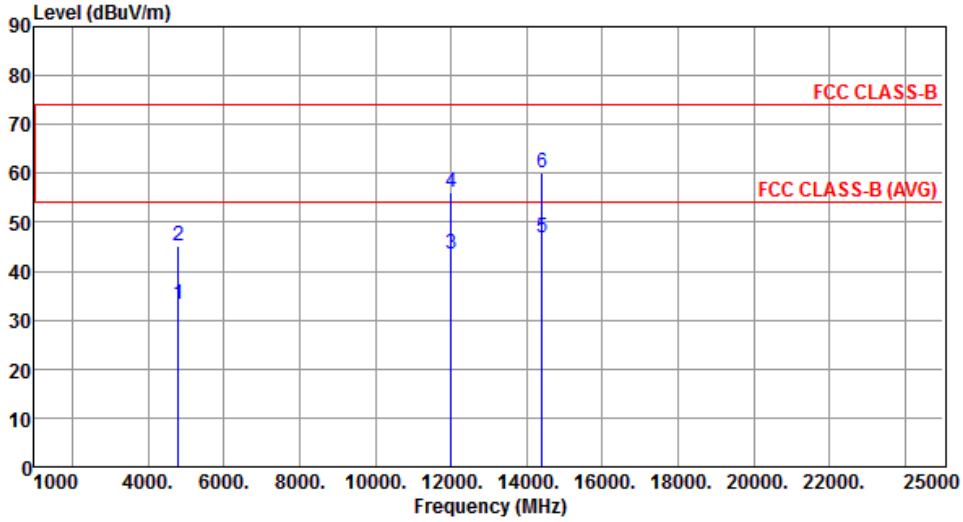
Modulation	GFSK/125kbps	**Test Freq. (MHz)**	2402
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4804.00	33.22	54.00	-20.78	28.42	4.80	Average	100	303
2	4804.00	45.86	74.00	-28.14	41.06	4.80	Peak	100	303
3	12010.00	43.92	54.00	-10.08	29.12	14.80	Average	100	30
4	12010.00	56.39	74.00	-17.61	41.59	14.80	Peak	100	30
5	14412.00	47.11	54.00	-6.89	29.23	17.88	Average	100	50
6	14412.00	60.44	74.00	-13.56	42.56	17.88	Peak	100	50

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

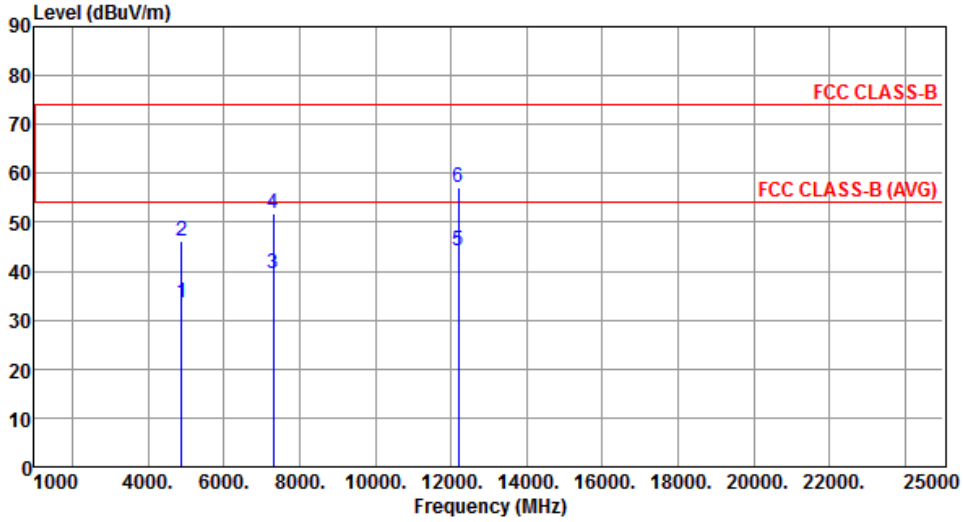
Modulation	GFSK/125kbps	Test Freq. (MHz)	2402
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4804.00	33.05	54.00	-20.95	28.25	4.80	Average	100	70
2	4804.00	45.07	74.00	-28.93	40.27	4.80	Peak	100	70
3	12010.00	43.37	54.00	-10.63	28.57	14.80	Average	100	40
4	12010.00	56.08	74.00	-17.92	41.28	14.80	Peak	100	40
5	14412.00	46.90	54.00	-7.10	29.02	17.88	Average	100	70
6	14412.00	60.19	74.00	-13.81	42.31	17.88	Peak	100	70

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

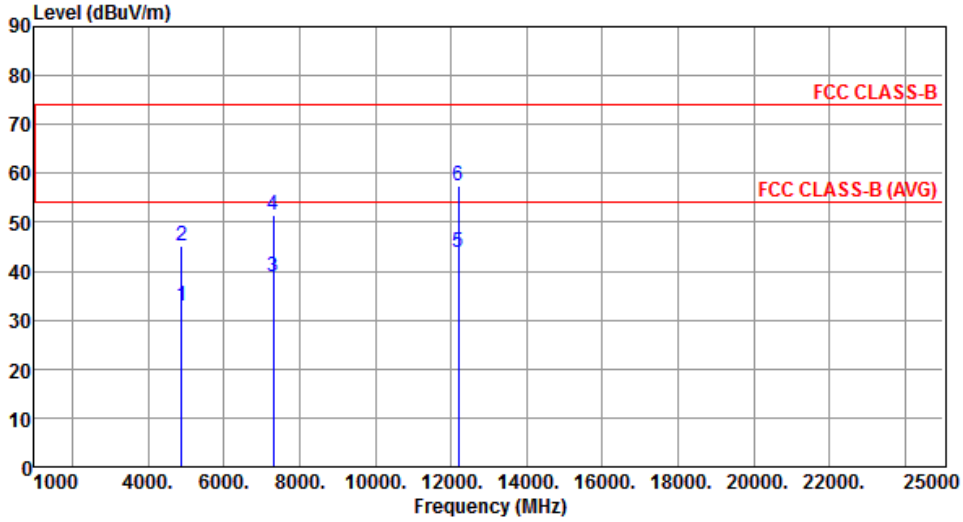
Modulation	GFSK/125kbps	Test Freq. (MHz)	2440
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4880.00	33.44	54.00	-20.56	28.53	4.91	Average	100	309
2	4880.00	46.07	74.00	-27.93	41.16	4.91	Peak	100	309
3	7320.00	39.38	54.00	-14.62	29.06	10.32	Average	100	306
4	7320.00	51.90	74.00	-22.10	41.58	10.32	Peak	100	306
5	12200.00	44.04	54.00	-9.96	29.20	14.84	Average	100	30
6	12200.00	57.12	74.00	-16.88	42.28	14.84	Peak	100	30

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

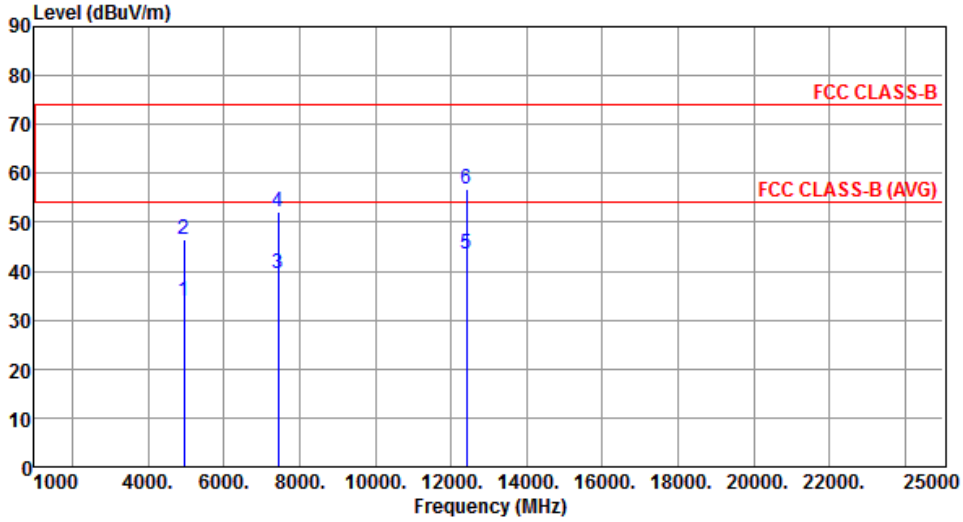
Modulation	GFSK/125kbps	Test Freq. (MHz)	2440
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4880.00	33.03	54.00	-20.97	28.12	4.91	Average	100	40
2	4880.00	45.16	74.00	-28.84	40.25	4.91	Peak	100	40
3	7320.00	38.74	54.00	-15.26	28.42	10.32	Average	100	50
4	7320.00	51.60	74.00	-22.40	41.28	10.32	Peak	100	50
5	12200.00	43.89	54.00	-10.11	29.05	14.84	Average	100	70
6	12200.00	57.38	74.00	-16.62	42.54	14.84	Peak	100	70

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

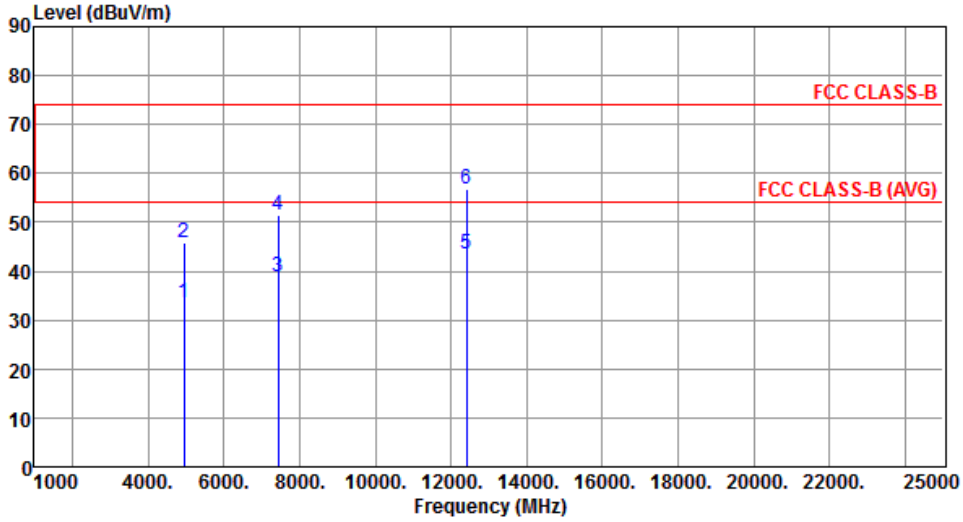
Modulation	GFSK/125kbps	Test Freq. (MHz)	2480
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4960.00	33.94	54.00	-20.06	28.75	5.19	Average	100	305
2	4960.00	46.53	74.00	-27.47	41.34	5.19	Peak	100	305
3	7440.00	39.59	54.00	-14.41	29.24	10.35	Average	100	308
4	7440.00	52.03	74.00	-21.97	41.68	10.35	Peak	100	308
5	12400.00	43.34	54.00	-10.66	29.05	14.29	Average	100	50
6	12400.00	56.65	74.00	-17.35	42.36	14.29	Peak	100	50

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	GFSK/125kbps	Test Freq. (MHz)	2480
Polarization	Vertical		

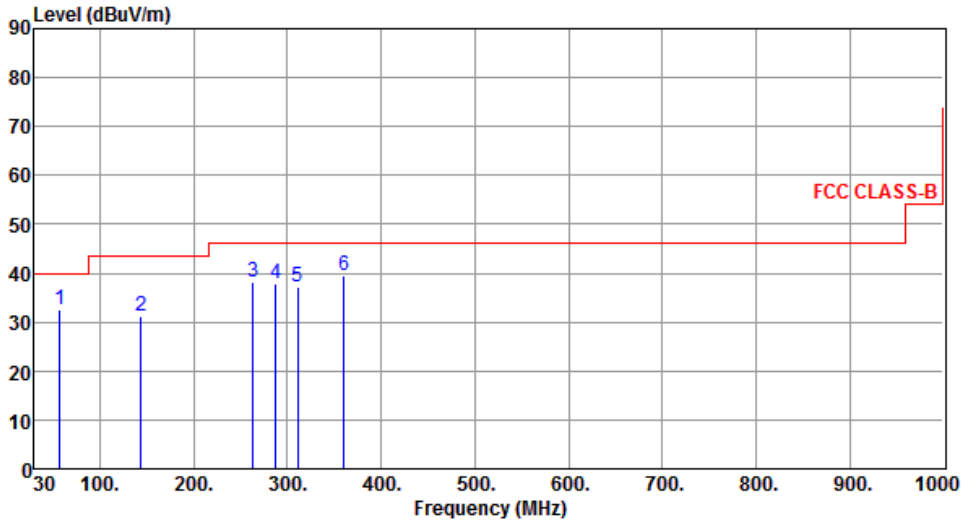


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4960.00	33.45	54.00	-20.55	28.26	5.19	Average	100	30
2	4960.00	45.76	74.00	-28.24	40.57	5.19	Peak	100	30
3	7440.00	38.91	54.00	-15.09	28.56	10.35	Average	100	70
4	7440.00	51.58	74.00	-22.42	41.23	10.35	Peak	100	70
5	12400.00	43.42	54.00	-10.58	29.13	14.29	Average	100	60
6	12400.00	56.73	74.00	-17.27	42.44	14.29	Peak	100	60

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

3.5.10 Transmitter Radiated Unwanted Emissions (Below 1GHz)

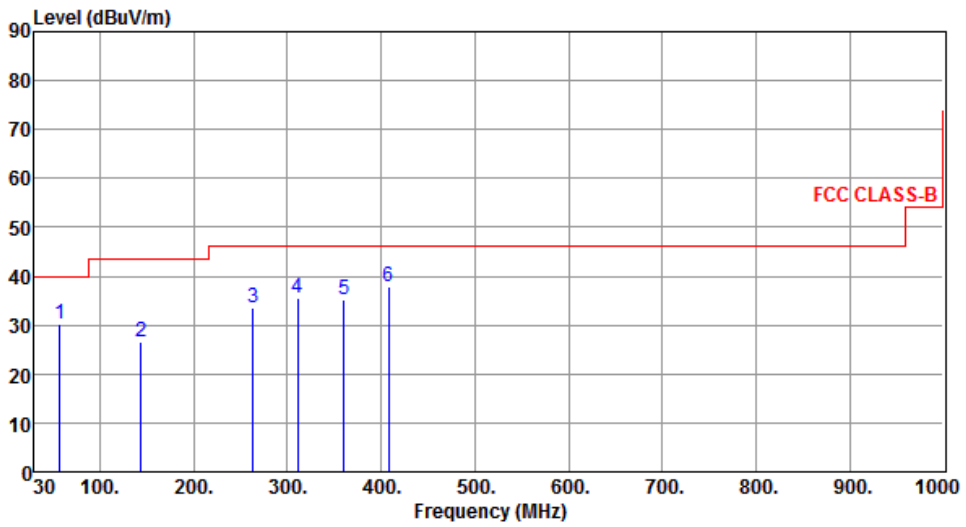
Modulation	GFSK/1Mbps	**Test Freq. (MHz)**	2480
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	57.25	32.48	40.00	-7.52	41.55	-9.07	Peak	---	---
2	143.49	31.36	43.50	-12.14	40.35	-8.99	Peak	---	---
3	263.69	38.18	46.00	-7.82	47.95	-9.77	Peak	---	---
4	287.21	37.85	46.00	-8.15	46.63	-8.78	Peak	---	---
5	311.25	37.34	46.00	-8.66	45.40	-8.06	Peak	---	---
6	360.77	39.58	46.00	-6.42	46.53	-6.95	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation	GFSK/1Mbps	Test Freq. (MHz)	2480
Polarization	Vertical		

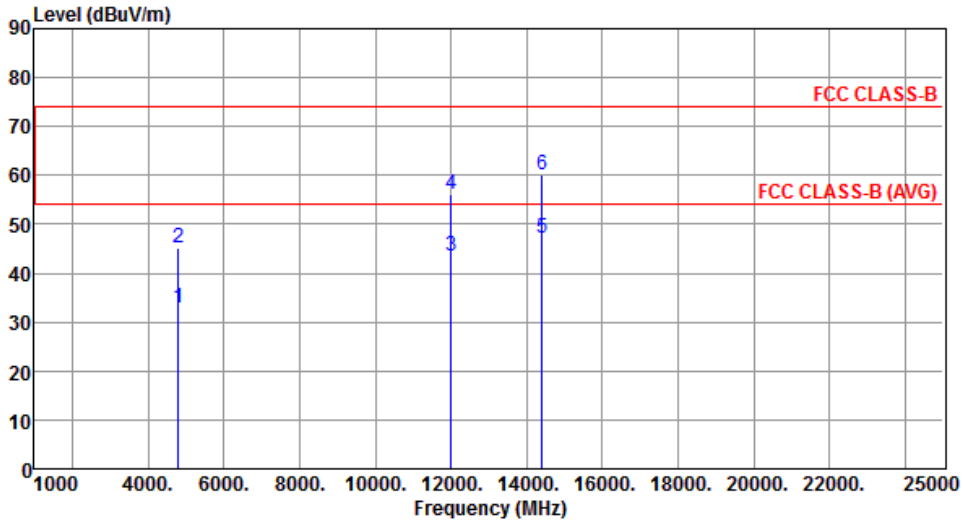


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	57.21	30.28	40.00	-9.72	39.34	-9.06	Peak	---	---
2	143.52	26.49	43.50	-17.01	35.48	-8.99	Peak	---	---
3	263.65	33.68	46.00	-12.32	43.45	-9.77	Peak	---	---
4	311.30	35.58	46.00	-10.42	43.64	-8.06	Peak	---	---
5	360.64	35.12	46.00	-10.88	42.07	-6.95	Peak	---	---
6	408.28	37.87	46.00	-8.13	43.49	-5.62	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

3.5.11 Transmitter Radiated Unwanted Emissions (Above 1GHz) for GFSK

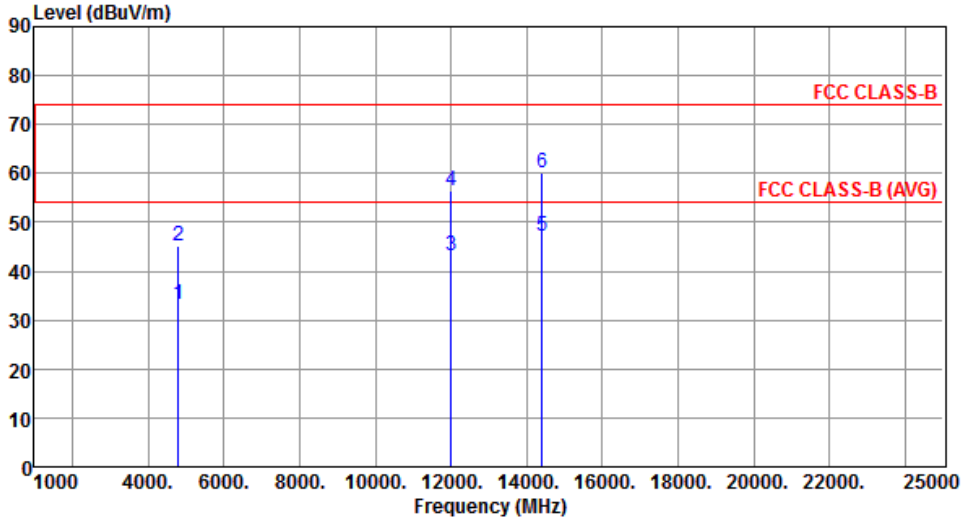
Modulation	GFSK/1Mbps	**Test Freq. (MHz)**	2402
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4804.00	32.93	54.00	-21.07	28.13	4.80	Average	100	50
2	4804.00	45.06	74.00	-28.94	40.26	4.80	Peak	100	50
3	12010.00	43.49	54.00	-10.51	28.69	14.80	Average	100	30
4	12010.00	56.08	74.00	-17.92	41.28	14.80	Peak	100	30
5	14412.00	47.12	54.00	-6.88	29.24	17.88	Average	100	70
6	14412.00	60.26	74.00	-13.74	42.38	17.88	Peak	100	70

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

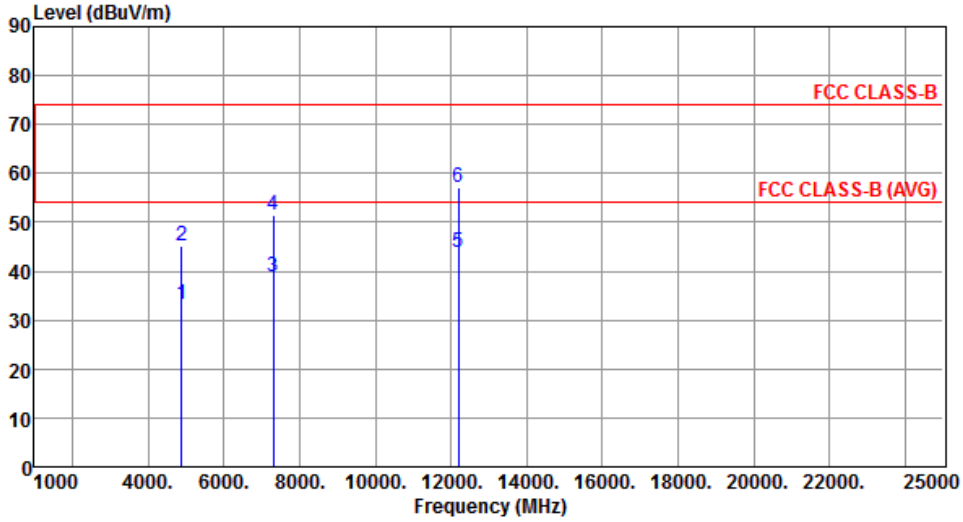
Modulation	GFSK/1Mbps	Test Freq. (MHz)	2402
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4804.00	33.10	54.00	-20.90	28.30	4.80	Average	100	60
2	4804.00	45.19	74.00	-28.81	40.39	4.80	Peak	100	60
3	12010.00	43.33	54.00	-10.67	28.53	14.80	Average	100	70
4	12010.00	56.34	74.00	-17.66	41.54	14.80	Peak	100	70
5	14412.00	47.13	54.00	-6.87	29.25	17.88	Average	100	30
6	14412.00	60.23	74.00	-13.77	42.35	17.88	Peak	100	30

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

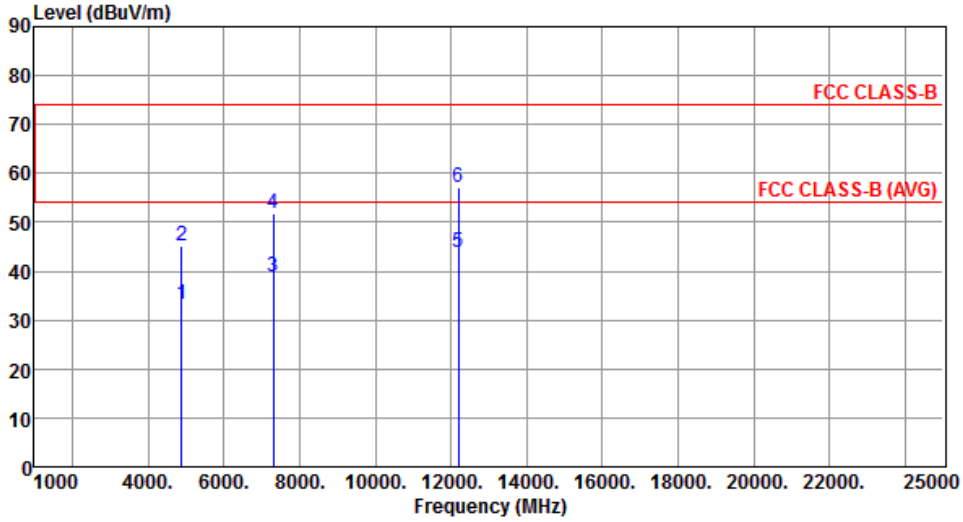
Modulation	GFSK/1Mbps	Test Freq. (MHz)	2440
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4880.00	33.16	54.00	-20.84	28.25	4.91	Average	100	50
2	4880.00	45.30	74.00	-28.70	40.39	4.91	Peak	100	50
3	7320.00	38.97	54.00	-15.03	28.65	10.32	Average	100	80
4	7320.00	51.55	74.00	-22.45	41.23	10.32	Peak	100	80
5	12200.00	43.90	54.00	-10.10	29.06	14.84	Average	100	40
6	12200.00	57.16	74.00	-16.84	42.32	14.84	Peak	100	40

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

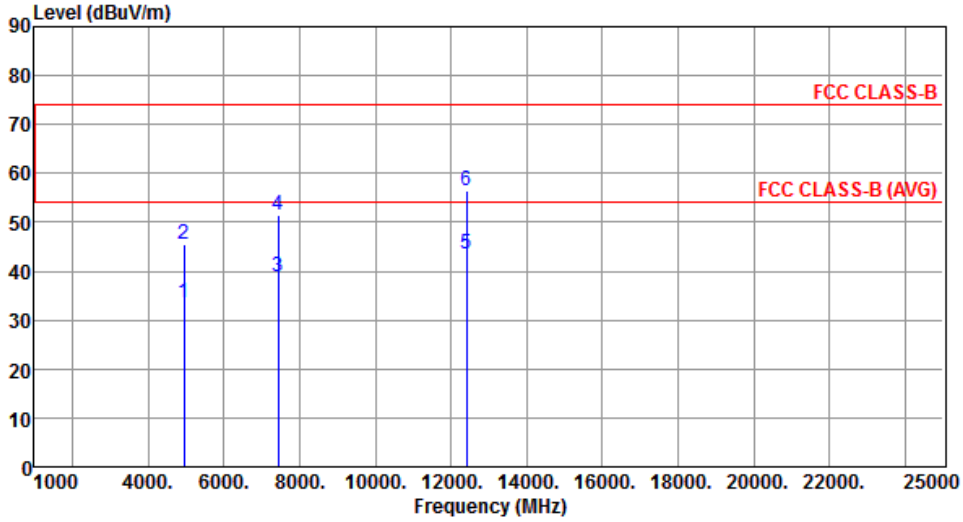
Modulation	GFSK/1Mbps	Test Freq. (MHz)	2440
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4880.00	33.12	54.00	-20.88	28.21	4.91	Average	100	30
2	4880.00	45.27	74.00	-28.73	40.36	4.91	Peak	100	30
3	7320.00	38.77	54.00	-15.23	28.45	10.32	Average	100	50
4	7320.00	51.88	74.00	-22.12	41.56	10.32	Peak	100	50
5	12200.00	43.89	54.00	-10.11	29.05	14.84	Average	100	70
6	12200.00	57.10	74.00	-16.90	42.26	14.84	Peak	100	70

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

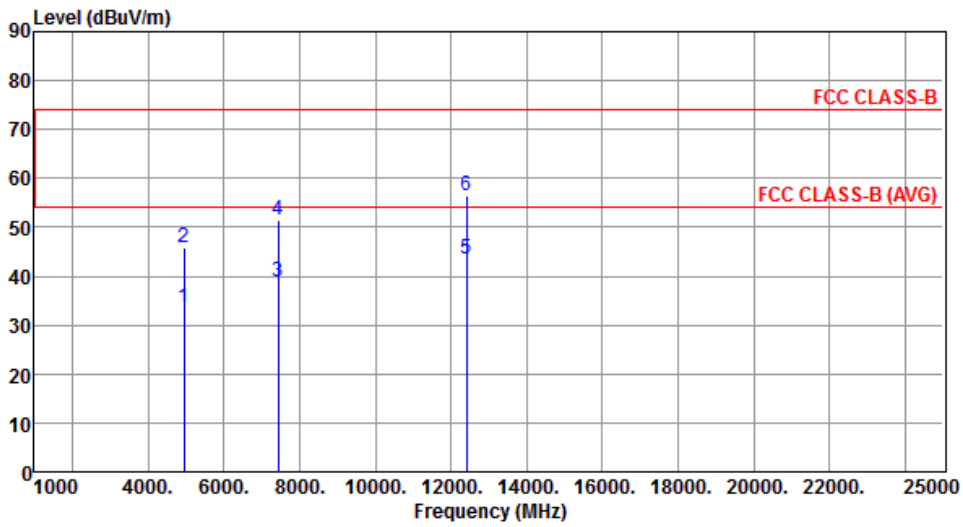
Modulation	GFSK/1Mbps	Test Freq. (MHz)	2480
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4960.00	33.44	54.00	-20.56	28.25	5.19	Average	100	20
2	4960.00	45.56	74.00	-28.44	40.37	5.19	Peak	100	20
3	7440.00	38.87	54.00	-15.13	28.52	10.35	Average	100	100
4	7440.00	51.60	74.00	-22.40	41.25	10.35	Peak	100	100
5	12400.00	43.34	54.00	-10.66	29.05	14.29	Average	100	60
6	12400.00	56.56	74.00	-17.44	42.27	14.29	Peak	100	60

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	GFSK/1Mbps	Test Freq. (MHz)	2480
Polarization	Vertical		

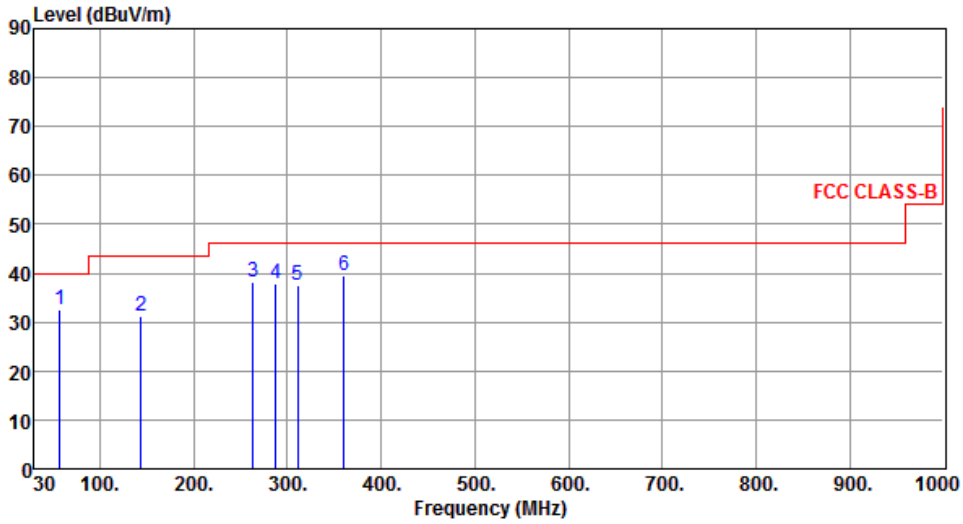


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4960.00	33.42	54.00	-20.58	28.23	5.19	Average	100	30
2	4960.00	45.75	74.00	-28.25	40.56	5.19	Peak	100	30
3	7440.00	39.01	54.00	-14.99	28.66	10.35	Average	100	50
4	7440.00	51.61	74.00	-22.39	41.26	10.35	Peak	100	50
5	12400.00	43.36	54.00	-10.64	29.07	14.29	Average	100	90
6	12400.00	56.49	74.00	-17.51	42.20	14.29	Peak	100	90

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

3.5.12 Transmitter Radiated Unwanted Emissions (Below 1GHz)

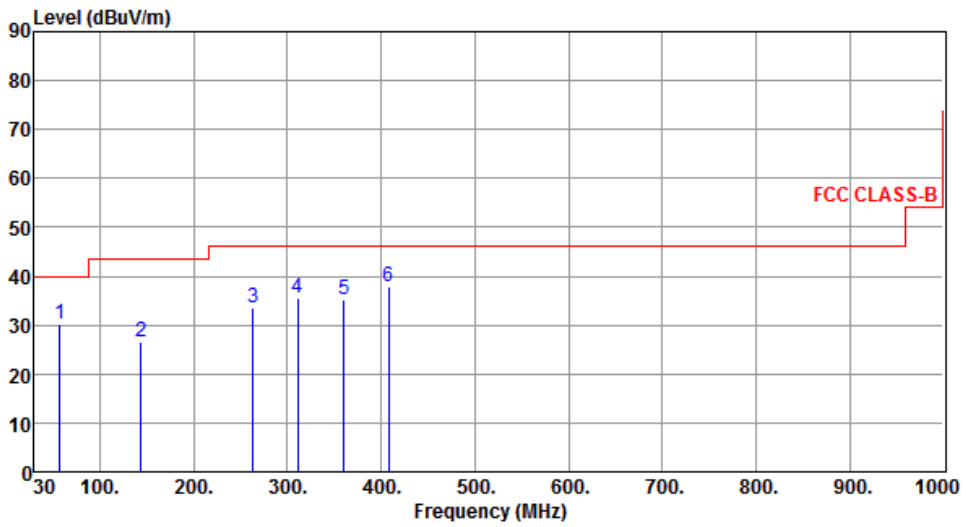
Modulation	GFSK/2Mbps	**Test Freq. (MHz)**	2480
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	57.23	32.68	40.00	-7.32	41.75	-9.07	Peak	---	---
2	143.49	31.36	43.50	-12.14	40.35	-8.99	Peak	---	---
3	263.69	38.25	46.00	-7.75	48.02	-9.77	Peak	---	---
4	287.48	37.86	46.00	-8.14	46.63	-8.77	Peak	---	---
5	311.25	37.38	46.00	-8.62	45.44	-8.06	Peak	---	---
6	360.77	39.57	46.00	-6.43	46.52	-6.95	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation	GFSK/2Mbps	Test Freq. (MHz)	2480
Polarization	Vertical		

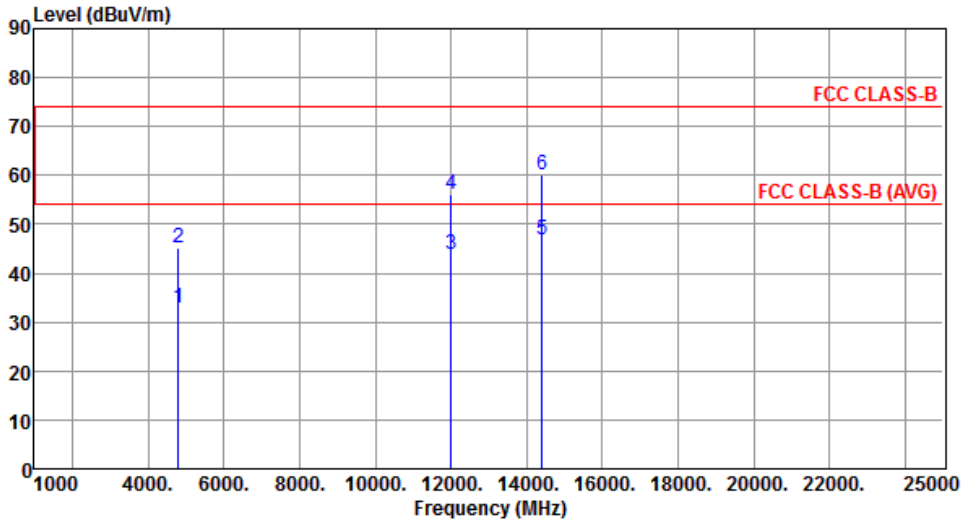


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	57.16	30.28	40.00	-9.72	39.33	-9.05	Peak	---	---
2	143.40	26.48	43.50	-17.02	35.48	-9.00	Peak	---	---
3	263.63	33.48	46.00	-12.52	43.25	-9.77	Peak	---	---
4	311.30	35.49	46.00	-10.51	43.55	-8.06	Peak	---	---
5	360.69	35.12	46.00	-10.88	42.07	-6.95	Peak	---	---
6	408.25	37.85	46.00	-8.15	43.47	-5.62	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

3.5.13 Transmitter Radiated Unwanted Emissions (Above 1GHz) for GFSK

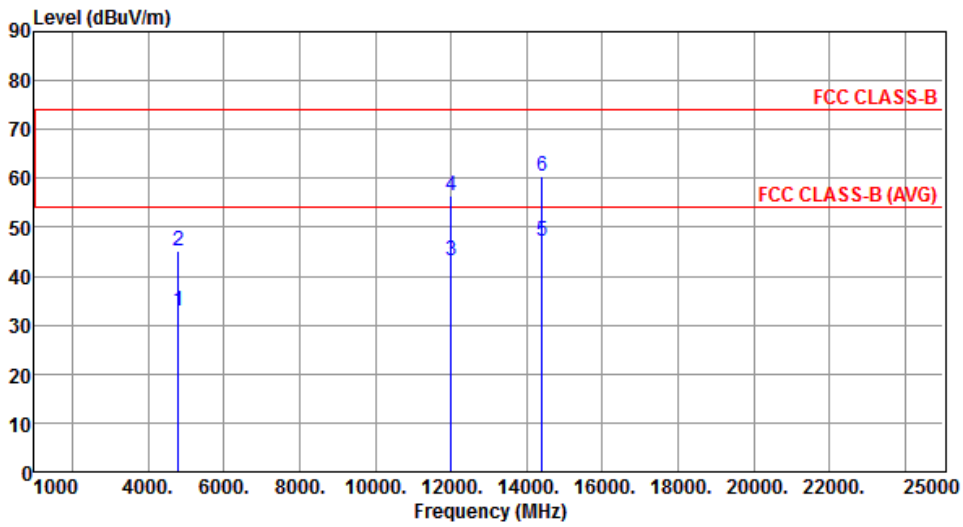
Modulation	GFSK/2Mbps	**Test Freq. (MHz)**	2402
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4804.00	32.95	54.00	-21.05	28.15	4.80	Average	100	30
2	4804.00	45.07	74.00	-28.93	40.27	4.80	Peak	100	30
3	12010.00	43.83	54.00	-10.17	29.03	14.80	Average	100	25
4	12010.00	56.18	74.00	-17.82	41.38	14.80	Peak	100	25
5	14412.00	46.93	54.00	-7.07	29.05	17.88	Average	100	70
6	14412.00	60.26	74.00	-13.74	42.38	17.88	Peak	100	70

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

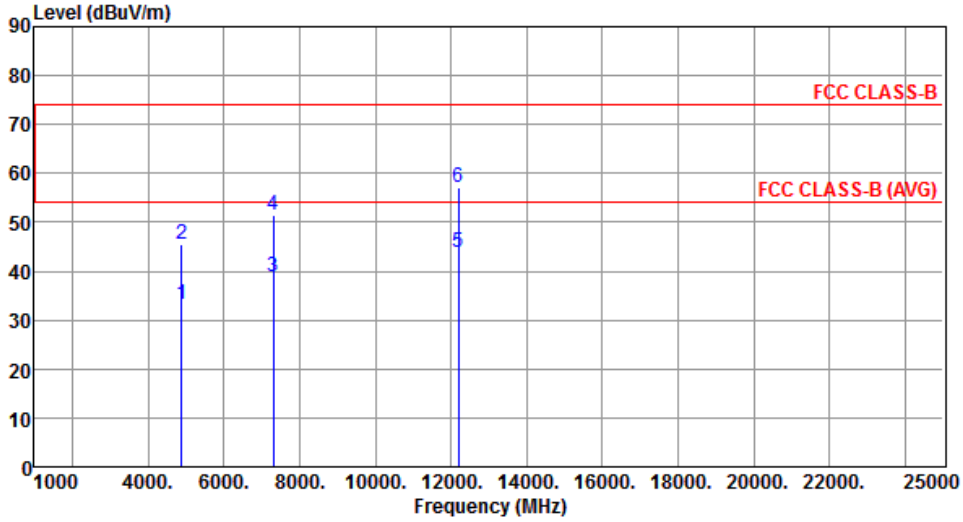
Modulation	GFSK/2Mbps	Test Freq. (MHz)	2402
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4804.00	32.98	54.00	-21.02	28.18	4.80	Average	100	60
2	4804.00	45.16	74.00	-28.84	40.36	4.80	Peak	100	60
3	12010.00	43.23	54.00	-10.77	28.43	14.80	Average	100	20
4	12010.00	56.36	74.00	-17.64	41.56	14.80	Peak	100	20
5	14412.00	47.02	54.00	-6.98	29.14	17.88	Average	100	35
6	14412.00	60.43	74.00	-13.57	42.55	17.88	Peak	100	35

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

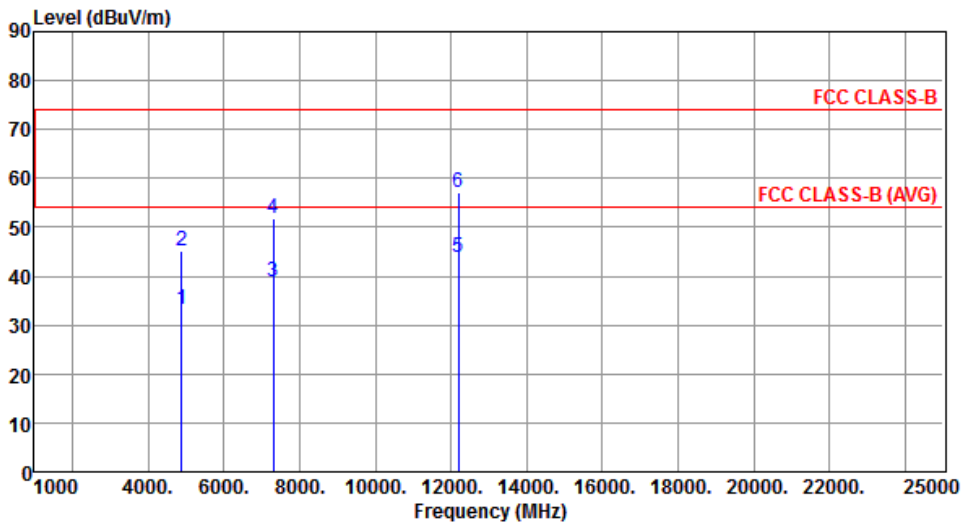
Modulation	GFSK/2Mbps	Test Freq. (MHz)	2440
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4880.00	33.14	54.00	-20.86	28.23	4.91	Average	100	20
2	4880.00	45.47	74.00	-28.53	40.56	4.91	Peak	100	20
3	7320.00	38.95	54.00	-15.05	28.63	10.32	Average	100	35
4	7320.00	51.60	74.00	-22.40	41.28	10.32	Peak	100	35
5	12200.00	43.92	54.00	-10.08	29.08	14.84	Average	100	40
6	12200.00	57.16	74.00	-16.84	42.32	14.84	Peak	100	40

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

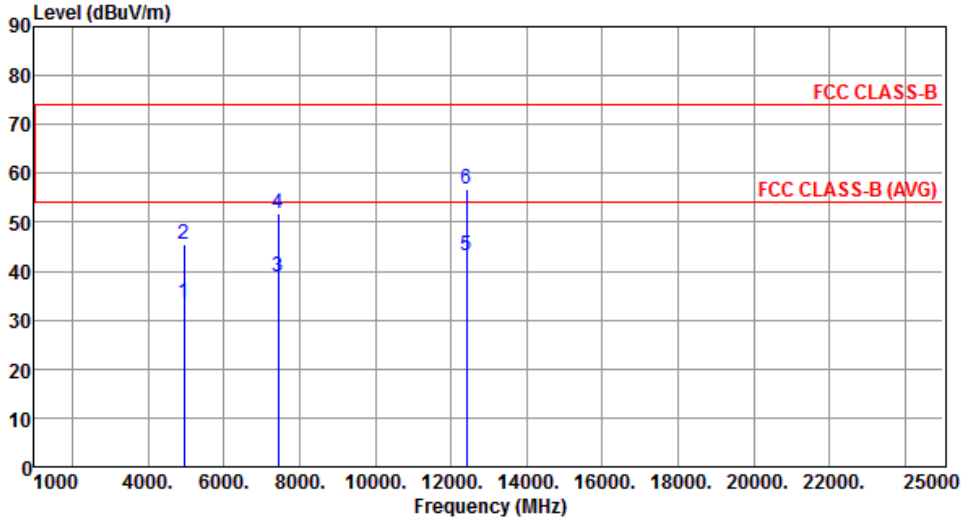
Modulation	GFSK/2Mbps	Test Freq. (MHz)	2440
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4880.00	33.17	54.00	-20.83	28.26	4.91	Average	100	80
2	4880.00	45.29	74.00	-28.71	40.38	4.91	Peak	100	80
3	7320.00	38.87	54.00	-15.13	28.55	10.32	Average	100	25
4	7320.00	51.70	74.00	-22.30	41.38	10.32	Peak	100	25
5	12200.00	43.98	54.00	-10.02	29.14	14.84	Average	100	50
6	12200.00	57.19	74.00	-16.81	42.35	14.84	Peak	100	50

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

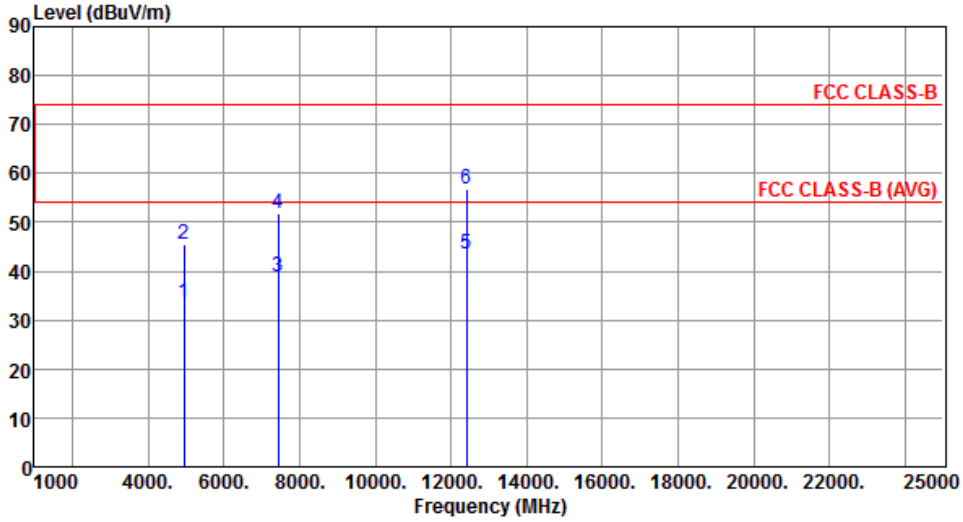
Modulation	GFSK/2Mbps	Test Freq. (MHz)	2480
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4960.00	33.60	54.00	-20.40	28.41	5.19	Average	100	30
2	4960.00	45.54	74.00	-28.46	40.35	5.19	Peak	100	30
3	7440.00	38.89	54.00	-15.11	28.54	10.35	Average	100	70
4	7440.00	51.71	74.00	-22.29	41.36	10.35	Peak	100	70
5	12400.00	43.33	54.00	-10.67	29.04	14.29	Average	100	20
6	12400.00	56.74	74.00	-17.26	42.45	14.29	Peak	100	20

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	GFSK/2Mbps	Test Freq. (MHz)	2480
Polarization	Vertical		



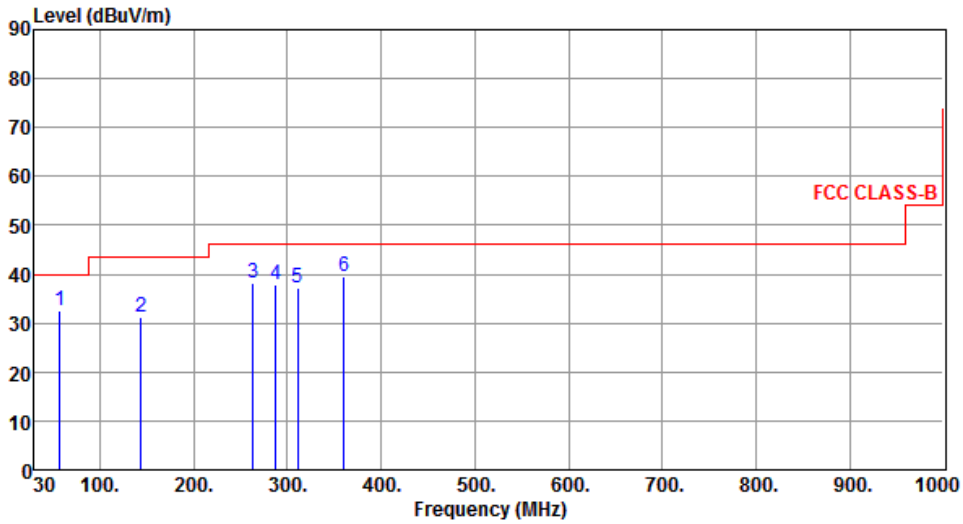
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4960.00	33.39	54.00	-20.61	28.20	5.19	Average	100	20
2	4960.00	45.56	74.00	-28.44	40.37	5.19	Peak	100	20
3	7440.00	38.77	54.00	-15.23	28.42	10.35	Average	100	30
4	7440.00	51.72	74.00	-22.28	41.37	10.35	Peak	100	30
5	12400.00	43.45	54.00	-10.55	29.16	14.29	Average	100	50
6	12400.00	56.66	74.00	-17.34	42.37	14.29	Peak	100	50

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Lowest power level- Configuration 7: Laird NFC + 50Ω terminator

3.5.14 Transmitter Radiated Unwanted Emissions (Below 1GHz)

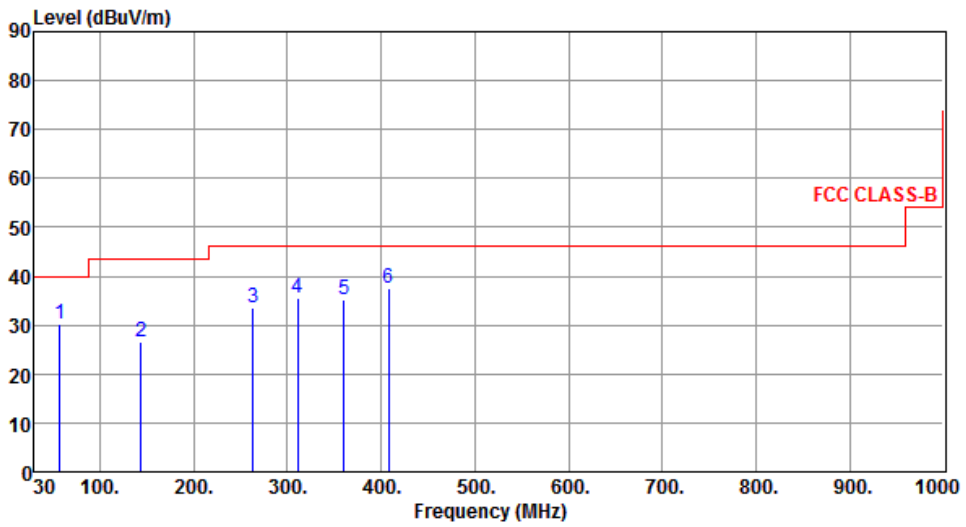
Modulation	GFSK/125kbps	**Test Freq. (MHz)**	2480
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	57.16	32.41	40.00	-7.59	41.46	-9.05	Peak	---	---
2	143.51	31.36	43.50	-12.14	40.35	-8.99	Peak	---	---
3	263.69	38.15	46.00	-7.85	47.92	-9.77	Peak	---	---
4	287.18	37.85	46.00	-8.15	46.63	-8.78	Peak	---	---
5	311.30	37.31	46.00	-8.69	45.37	-8.06	Peak	---	---
6	360.66	39.57	46.00	-6.43	46.52	-6.95	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation	GFSK/125kbps	Test Freq. (MHz)	2480
Polarization	Vertical		

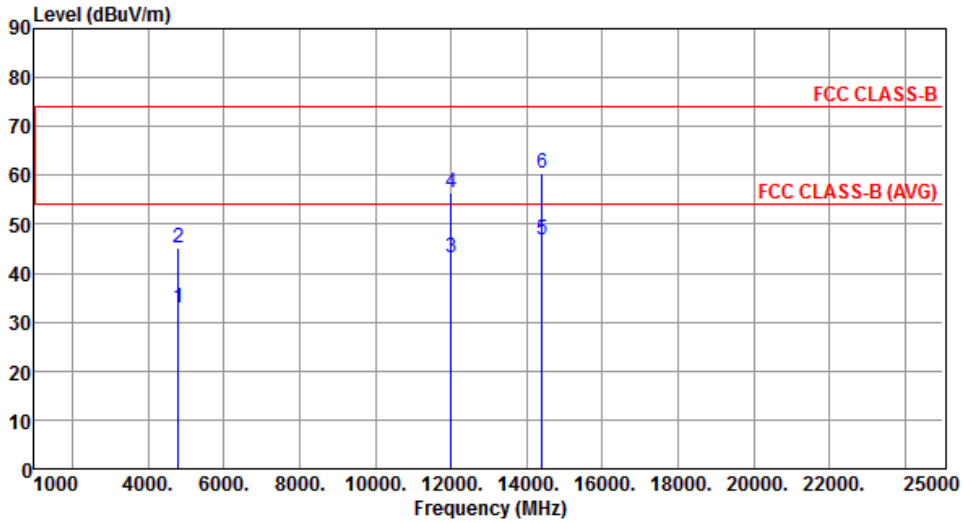


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	57.24	30.21	40.00	-9.79	39.28	-9.07	Peak	---	---
2	143.49	26.48	43.50	-17.02	35.47	-8.99	Peak	---	---
3	263.66	33.47	46.00	-12.53	43.24	-9.77	Peak	---	---
4	311.25	35.47	46.00	-10.53	43.53	-8.06	Peak	---	---
5	360.77	35.32	46.00	-10.68	42.27	-6.95	Peak	---	---
6	408.28	37.64	46.00	-8.36	43.26	-5.62	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

3.5.15 Transmitter Radiated Unwanted Emissions (Above 1GHz) for GFSK

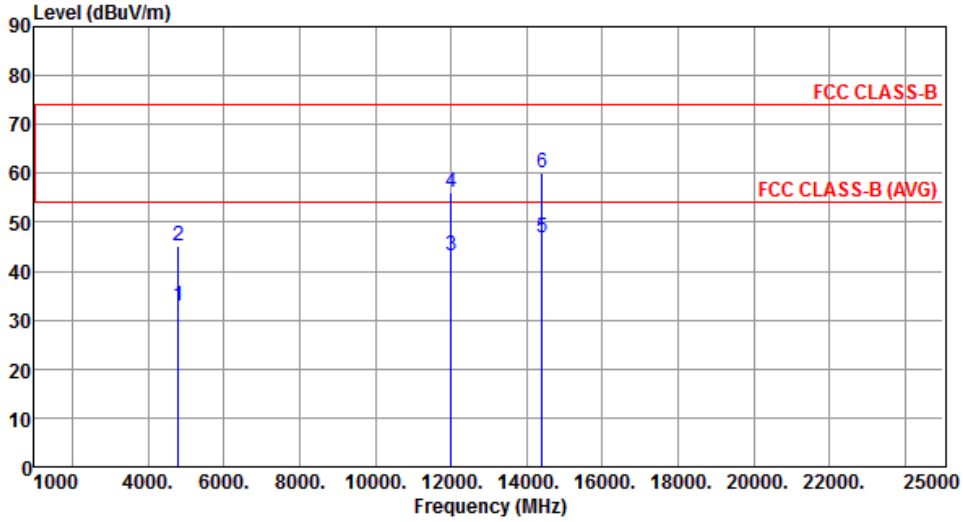
Modulation	GFSK/125kbps	**Test Freq. (MHz)**	2402
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4804.00	32.93	54.00	-21.07	28.13	4.80	Average	100	120
2	4804.00	45.13	74.00	-28.87	40.33	4.80	Peak	100	120
3	12010.00	43.25	54.00	-10.75	28.45	14.80	Average	100	25
4	12010.00	56.43	74.00	-17.57	41.63	14.80	Peak	100	25
5	14412.00	46.99	54.00	-7.01	29.11	17.88	Average	100	50
6	14412.00	60.50	74.00	-13.50	42.62	17.88	Peak	100	50

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

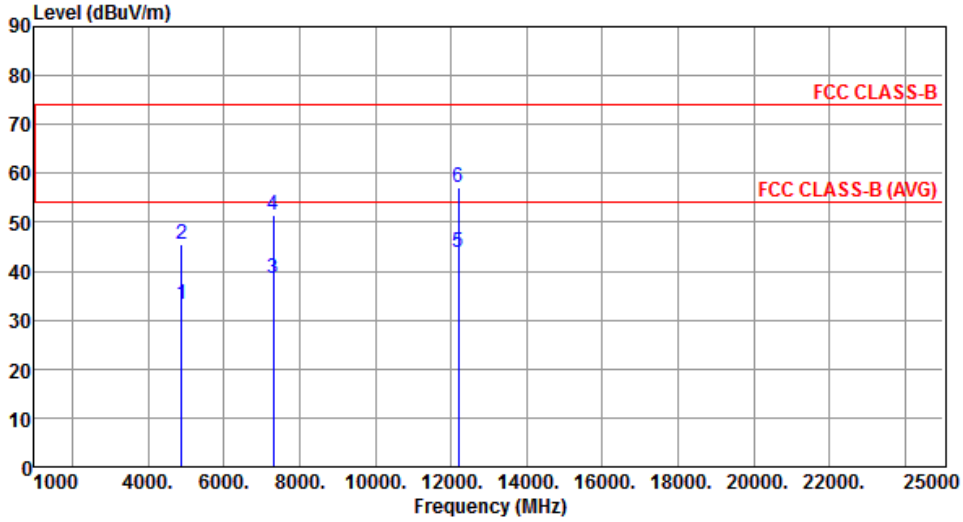
Modulation	GFSK/125kbps	Test Freq. (MHz)	2402
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4804.00	32.98	54.00	-21.02	28.18	4.80	Average	100	70
2	4804.00	45.14	74.00	-28.86	40.34	4.80	Peak	100	70
3	12010.00	43.22	54.00	-10.78	28.42	14.80	Average	100	35
4	12010.00	56.15	74.00	-17.85	41.35	14.80	Peak	100	35
5	14412.00	46.95	54.00	-7.05	29.07	17.88	Average	100	65
6	14412.00	60.13	74.00	-13.87	42.25	17.88	Peak	100	65

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

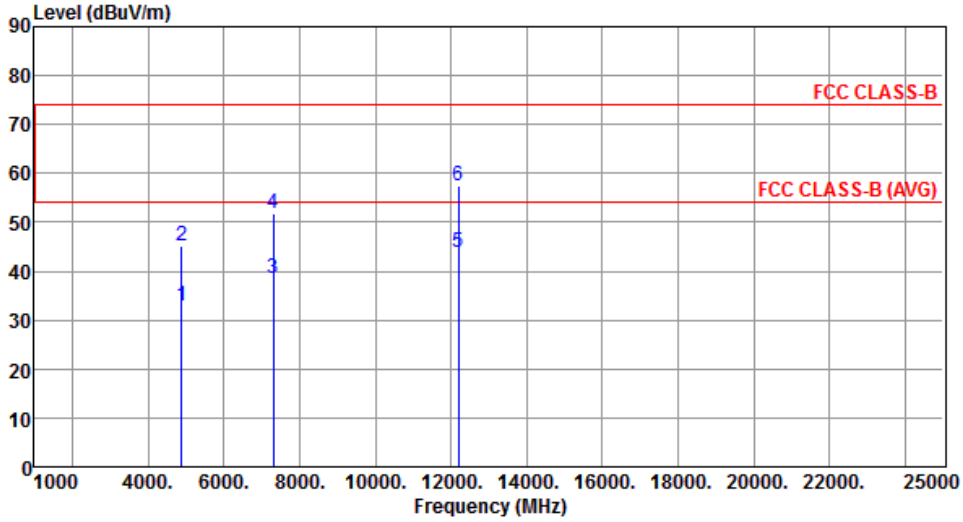
Modulation	GFSK/125kbps	Test Freq. (MHz)	2440
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4880.00	33.05	54.00	-20.95	28.14	4.91	Average	100	100
2	4880.00	45.44	74.00	-28.56	40.53	4.91	Peak	100	100
3	7320.00	38.66	54.00	-15.34	28.34	10.32	Average	100	90
4	7320.00	51.55	74.00	-22.45	41.23	10.32	Peak	100	90
5	12200.00	43.99	54.00	-10.01	29.15	14.84	Average	100	25
6	12200.00	57.20	74.00	-16.80	42.36	14.84	Peak	100	25

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

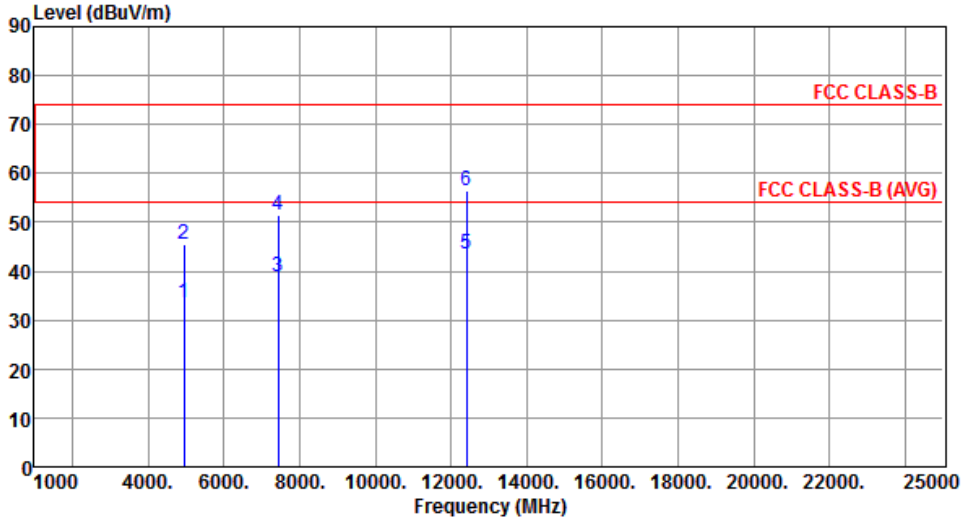
Modulation	GFSK/125kbps	Test Freq. (MHz)	2440
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4880.00	32.97	54.00	-21.03	28.06	4.91	Average	100	40
2	4880.00	45.30	74.00	-28.70	40.39	4.91	Peak	100	40
3	7320.00	38.65	54.00	-15.35	28.33	10.32	Average	100	50
4	7320.00	51.71	74.00	-22.29	41.39	10.32	Peak	100	50
5	12200.00	43.88	54.00	-10.12	29.04	14.84	Average	100	70
6	12200.00	57.47	74.00	-16.53	42.63	14.84	Peak	100	70

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

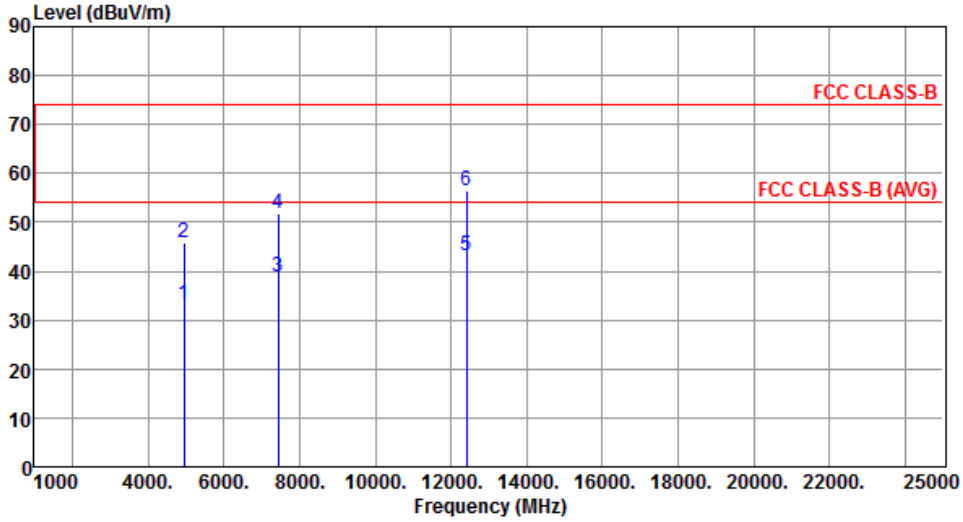
Modulation	GFSK/125kbps	Test Freq. (MHz)	2480
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4960.00	33.41	54.00	-20.59	28.22	5.19	Average	100	20
2	4960.00	45.54	74.00	-28.46	40.35	5.19	Peak	100	20
3	7440.00	38.88	54.00	-15.12	28.53	10.35	Average	100	60
4	7440.00	51.56	74.00	-22.44	41.21	10.35	Peak	100	60
5	12400.00	43.47	54.00	-10.53	29.18	14.29	Average	100	50
6	12400.00	56.54	74.00	-17.46	42.25	14.29	Peak	100	50

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	GFSK/125kbps	Test Freq. (MHz)	2480
Polarization	Vertical		

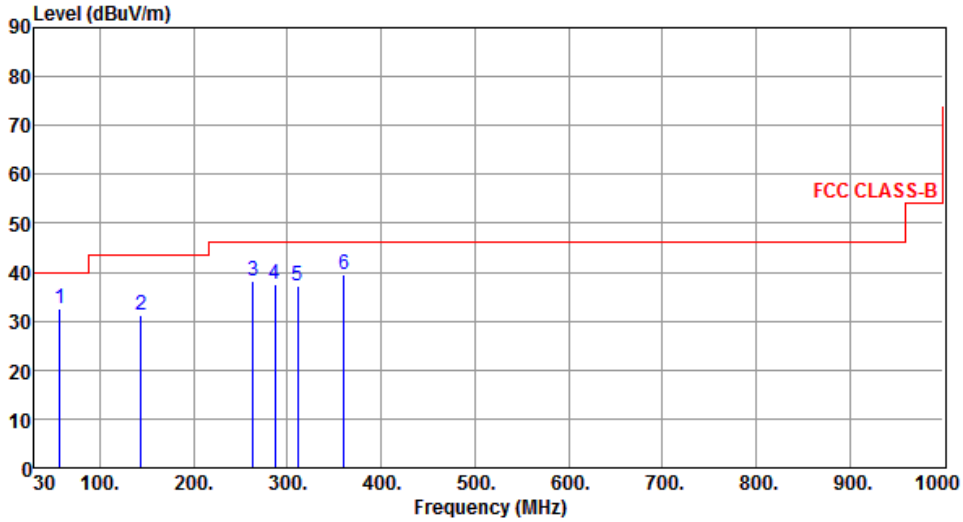


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4960.00	33.33	54.00	-20.67	28.14	5.19	Average	100	20
2	4960.00	45.87	74.00	-28.13	40.68	5.19	Peak	100	20
3	7440.00	38.76	54.00	-15.24	28.41	10.35	Average	100	65
4	7440.00	51.68	74.00	-22.32	41.33	10.35	Peak	100	65
5	12400.00	43.31	54.00	-10.69	29.02	14.29	Average	100	60
6	12400.00	56.60	74.00	-17.40	42.31	14.29	Peak	100	60

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

3.5.16 Transmitter Radiated Unwanted Emissions (Below 1GHz)

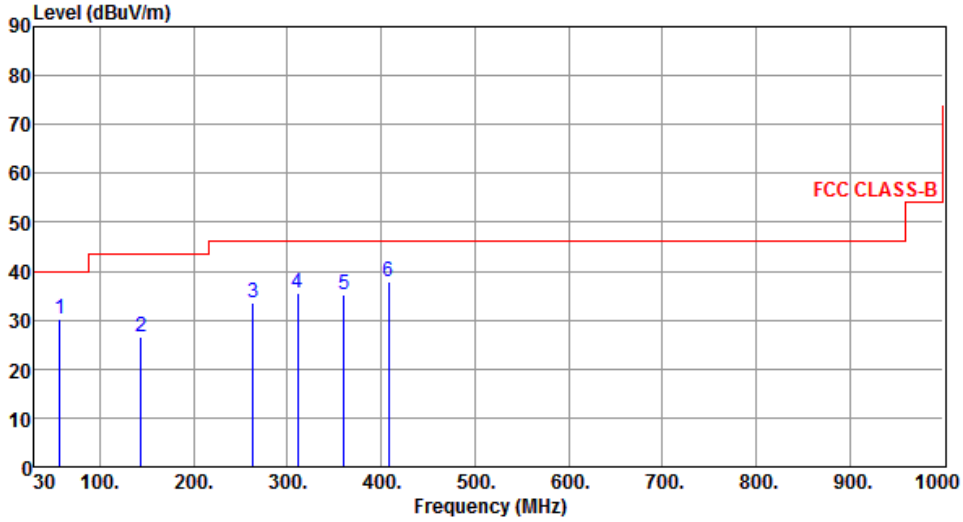
Modulation	GFSK/1Mbps	**Test Freq. (MHz)**	2480
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	57.18	32.56	40.00	-7.44	41.62	-9.06	Peak	---	---
2	143.49	31.35	43.50	-12.15	40.34	-8.99	Peak	---	---
3	263.69	38.27	46.00	-7.73	48.04	-9.77	Peak	---	---
4	287.12	37.63	46.00	-8.37	46.41	-8.78	Peak	---	---
5	311.25	37.35	46.00	-8.65	45.41	-8.06	Peak	---	---
6	360.77	39.53	46.00	-6.47	46.48	-6.95	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation	GFSK/1Mbps	Test Freq. (MHz)	2480
Polarization	Vertical		

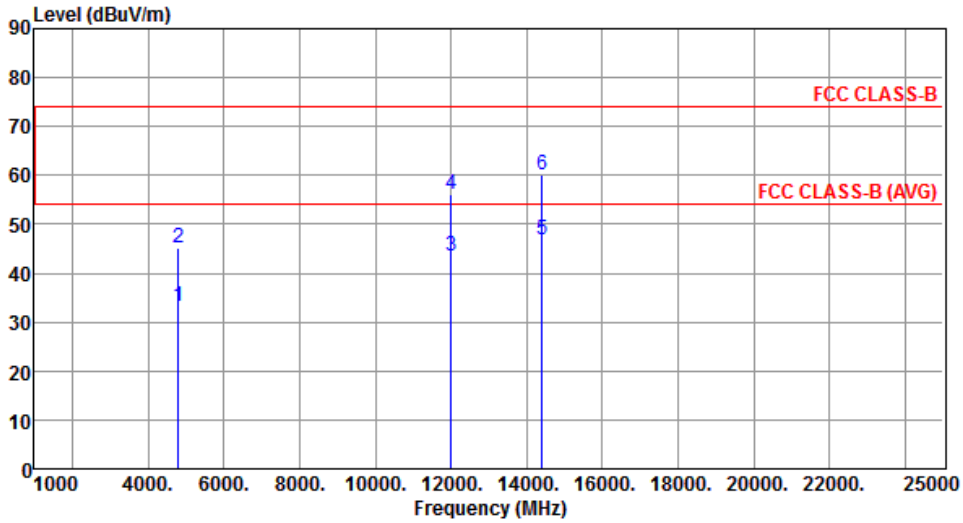


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	57.11	30.24	40.00	-9.76	39.28	-9.04	Peak	---	---
2	143.52	26.48	43.50	-17.02	35.47	-8.99	Peak	---	---
3	263.66	33.67	46.00	-12.33	43.44	-9.77	Peak	---	---
4	311.30	35.58	46.00	-10.42	43.64	-8.06	Peak	---	---
5	360.77	35.26	46.00	-10.74	42.21	-6.95	Peak	---	---
6	408.28	37.81	46.00	-8.19	43.43	-5.62	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

3.5.17 Transmitter Radiated Unwanted Emissions (Above 1GHz) for GFSK

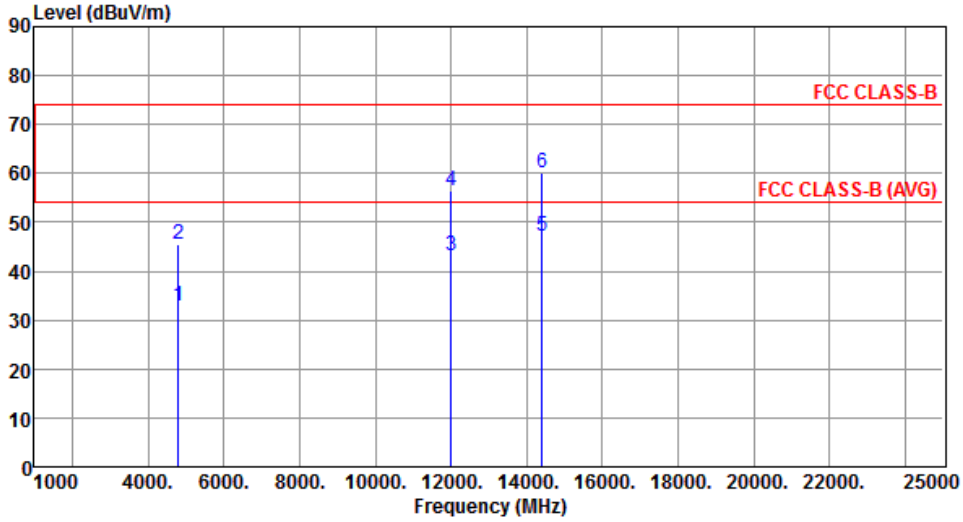
Modulation	GFSK/1Mbps	**Test Freq. (MHz)**	2402
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4804.00	33.06	54.00	-20.94	28.26	4.80	Average	100	50
2	4804.00	45.17	74.00	-28.83	40.37	4.80	Peak	100	50
3	12010.00	43.36	54.00	-10.64	28.56	14.80	Average	100	30
4	12010.00	56.13	74.00	-17.87	41.33	14.80	Peak	100	30
5	14412.00	46.99	54.00	-7.01	29.11	17.88	Average	100	70
6	14412.00	60.22	74.00	-13.78	42.34	17.88	Peak	100	70

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

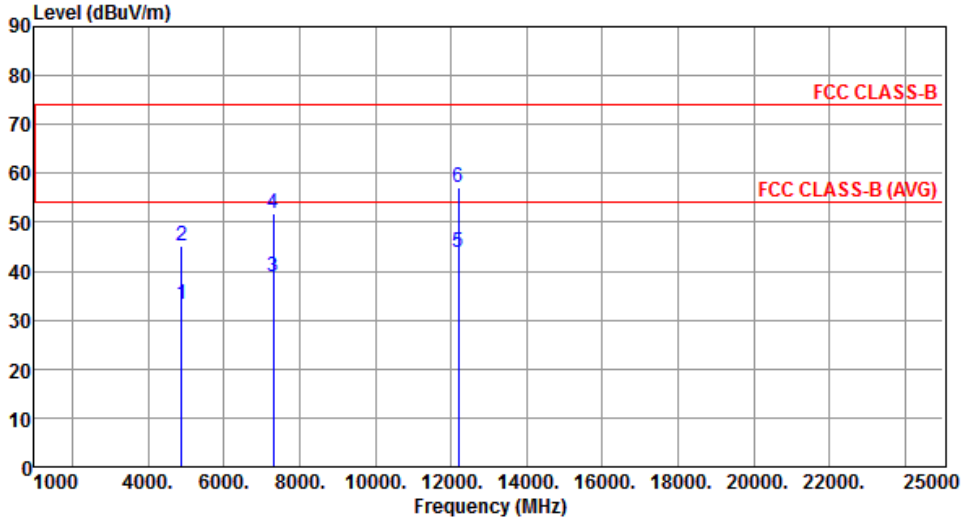
Modulation	GFSK/1Mbps	Test Freq. (MHz)	2402
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4804.00	32.98	54.00	-21.02	28.18	4.80	Average	100	55
2	4804.00	45.34	74.00	-28.66	40.54	4.80	Peak	100	55
3	12010.00	43.21	54.00	-10.79	28.41	14.80	Average	100	70
4	12010.00	56.43	74.00	-17.57	41.63	14.80	Peak	100	70
5	14412.00	47.01	54.00	-6.99	29.13	17.88	Average	100	60
6	14412.00	60.10	74.00	-13.90	42.22	17.88	Peak	100	60

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

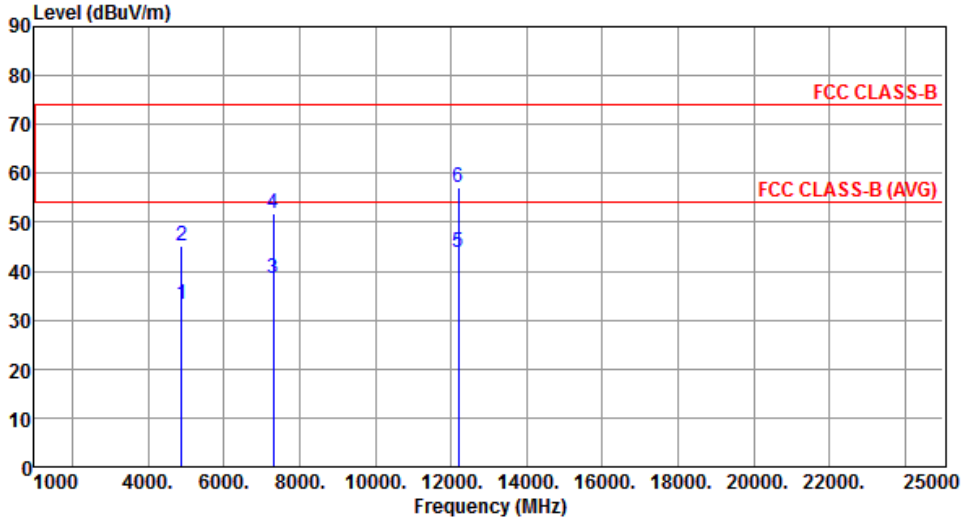
Modulation	GFSK/1Mbps	Test Freq. (MHz)	2440
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4880.00	33.07	54.00	-20.93	28.16	4.91	Average	100	50
2	4880.00	45.26	74.00	-28.74	40.35	4.91	Peak	100	50
3	7320.00	38.86	54.00	-15.14	28.54	10.32	Average	100	80
4	7320.00	51.66	74.00	-22.34	41.34	10.32	Peak	100	80
5	12200.00	43.96	54.00	-10.04	29.12	14.84	Average	100	40
6	12200.00	57.12	74.00	-16.88	42.28	14.84	Peak	100	40

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

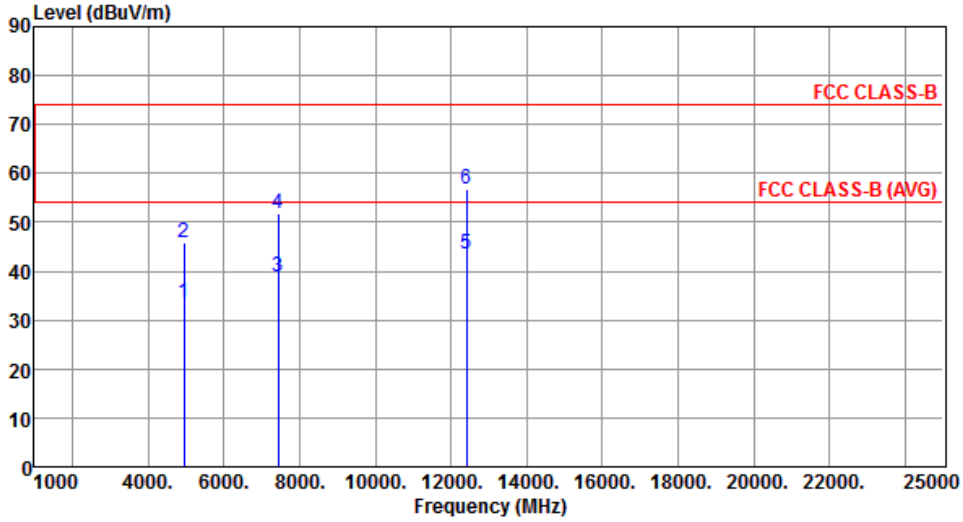
Modulation	GFSK/1Mbps	Test Freq. (MHz)	2440
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4880.00	33.07	54.00	-20.93	28.16	4.91	Average	100	30
2	4880.00	45.16	74.00	-28.84	40.25	4.91	Peak	100	30
3	7320.00	38.68	54.00	-15.32	28.36	10.32	Average	100	60
4	7320.00	51.78	74.00	-22.22	41.46	10.32	Peak	100	60
5	12200.00	43.96	54.00	-10.04	29.12	14.84	Average	100	50
6	12200.00	57.15	74.00	-16.85	42.31	14.84	Peak	100	50

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

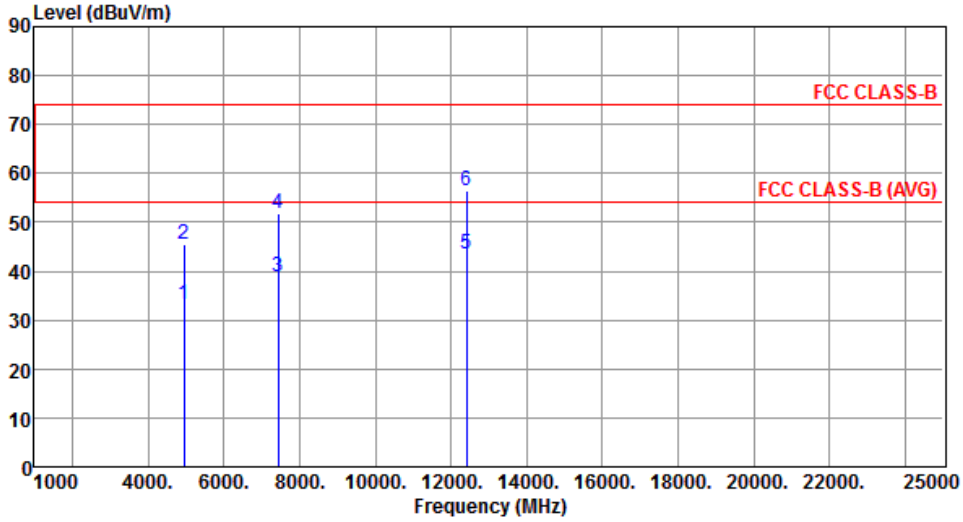
Modulation	GFSK/1Mbps	Test Freq. (MHz)	2480
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4960.00	33.43	54.00	-20.57	28.24	5.19	Average	100	40
2	4960.00	45.74	74.00	-28.26	40.55	5.19	Peak	100	40
3	7440.00	38.77	54.00	-15.23	28.42	10.35	Average	100	100
4	7440.00	51.66	74.00	-22.34	41.31	10.35	Peak	100	100
5	12400.00	43.38	54.00	-10.62	29.09	14.29	Average	100	55
6	12400.00	56.65	74.00	-17.35	42.36	14.29	Peak	100	55

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	GFSK/1Mbps	Test Freq. (MHz)	2480
Polarization	Vertical		

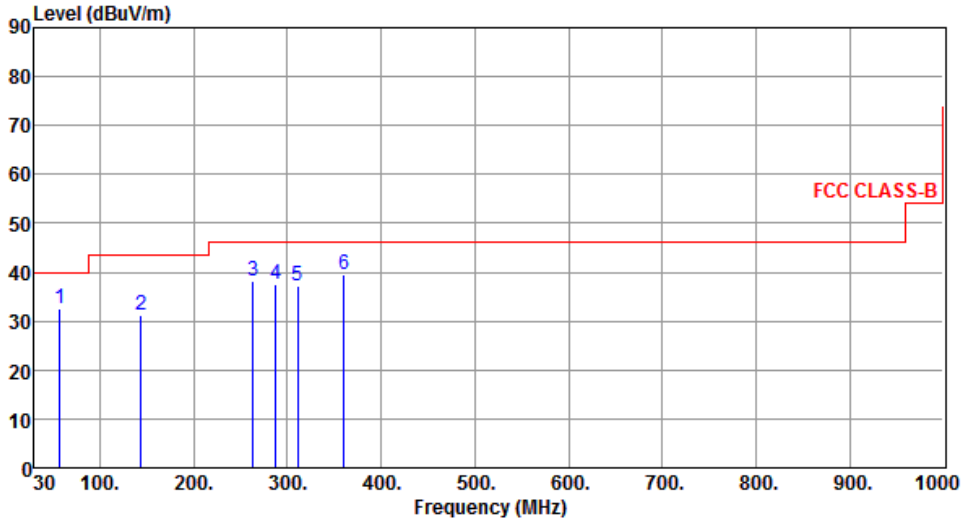


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4960.00	33.32	54.00	-20.68	28.13	5.19	Average	100	30
2	4960.00	45.61	74.00	-28.39	40.42	5.19	Peak	100	30
3	7440.00	38.89	54.00	-15.11	28.54	10.35	Average	100	50
4	7440.00	51.74	74.00	-22.26	41.39	10.35	Peak	100	50
5	12400.00	43.53	54.00	-10.47	29.24	14.29	Average	100	90
6	12400.00	56.60	74.00	-17.40	42.31	14.29	Peak	100	90

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

3.5.18 Transmitter Radiated Unwanted Emissions (Below 1GHz)

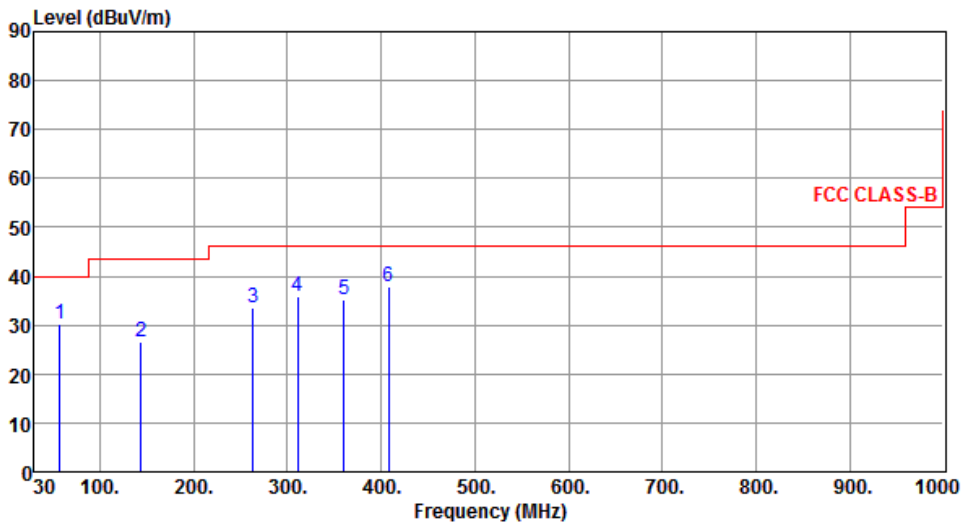
Modulation	GFSK/2Mbps	**Test Freq. (MHz)**	2480
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	57.22	32.46	40.00	-7.54	41.52	-9.06	Peak	---	---
2	143.51	31.38	43.50	-12.12	40.37	-8.99	Peak	---	---
3	263.77	38.15	46.00	-7.85	47.92	-9.77	Peak	---	---
4	287.19	37.64	46.00	-8.36	46.42	-8.78	Peak	---	---
5	311.25	37.31	46.00	-8.69	45.37	-8.06	Peak	---	---
6	360.66	39.58	46.00	-6.42	46.53	-6.95	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation	GFSK/2Mbps	Test Freq. (MHz)	2480
Polarization	Vertical		

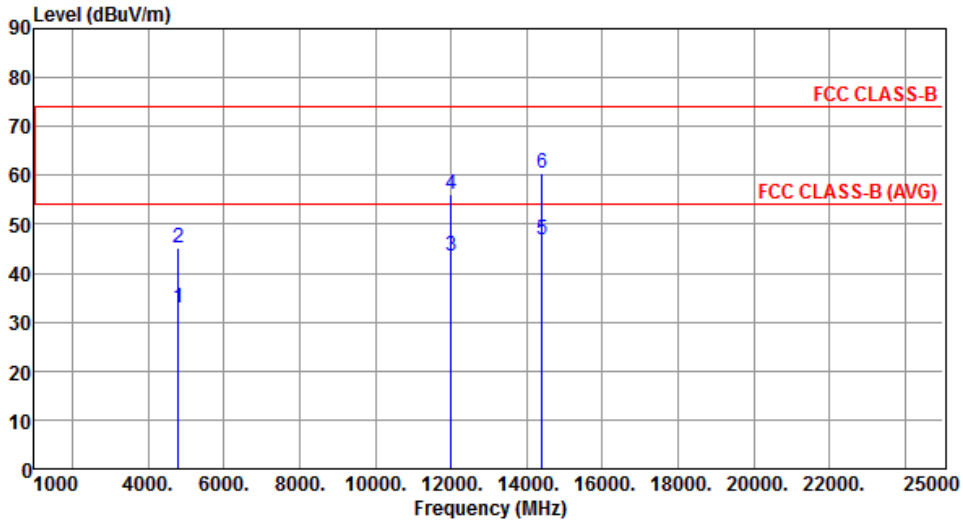


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	57.11	30.13	40.00	-9.87	39.17	-9.04	Peak	---	---
2	143.50	26.54	43.50	-16.96	35.53	-8.99	Peak	---	---
3	263.77	33.46	46.00	-12.54	43.23	-9.77	Peak	---	---
4	311.26	35.87	46.00	-10.13	43.93	-8.06	Peak	---	---
5	360.63	35.23	46.00	-10.77	42.18	-6.95	Peak	---	---
6	408.27	37.84	46.00	-8.16	43.46	-5.62	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

3.5.19 Transmitter Radiated Unwanted Emissions (Above 1GHz) for GFSK

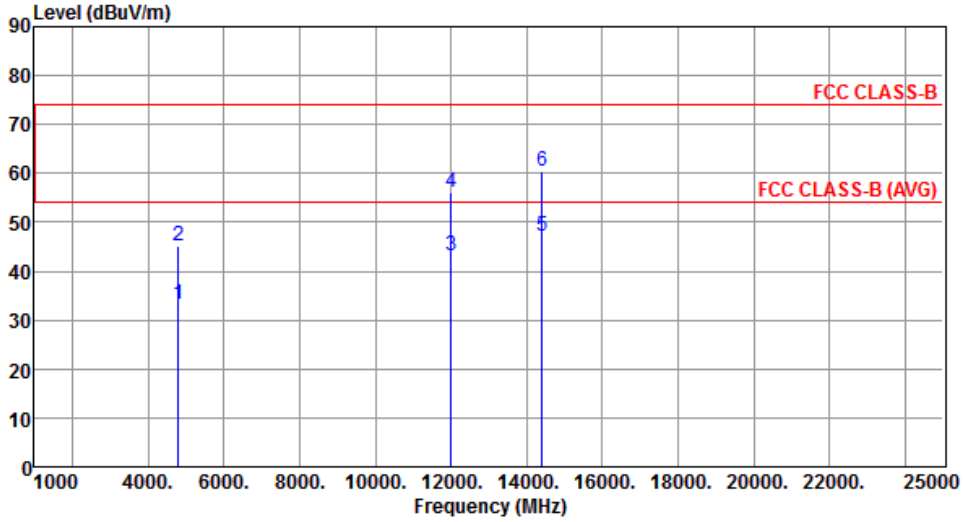
Modulation	GFSK/2Mbps	**Test Freq. (MHz)**	2402
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4804.00	33.04	54.00	-20.96	28.24	4.80	Average	100	25
2	4804.00	45.12	74.00	-28.88	40.32	4.80	Peak	100	25
3	12010.00	43.49	54.00	-10.51	28.69	14.80	Average	100	30
4	12010.00	56.16	74.00	-17.84	41.36	14.80	Peak	100	30
5	14412.00	46.91	54.00	-7.09	29.03	17.88	Average	100	70
6	14412.00	60.28	74.00	-13.72	42.40	17.88	Peak	100	70

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

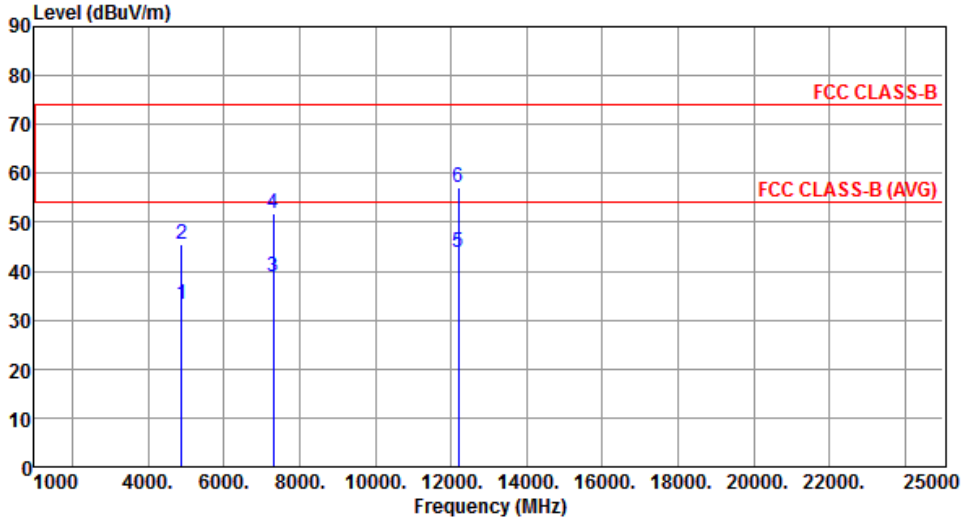
Modulation	GFSK/2Mbps	Test Freq. (MHz)	2402
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4804.00	33.07	54.00	-20.93	28.27	4.80	Average	100	60
2	4804.00	45.19	74.00	-28.81	40.39	4.80	Peak	100	60
3	12010.00	43.17	54.00	-10.83	28.37	14.80	Average	100	20
4	12010.00	56.22	74.00	-17.78	41.42	14.80	Peak	100	20
5	14412.00	47.05	54.00	-6.95	29.17	17.88	Average	100	40
6	14412.00	60.50	74.00	-13.50	42.62	17.88	Peak	100	40

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

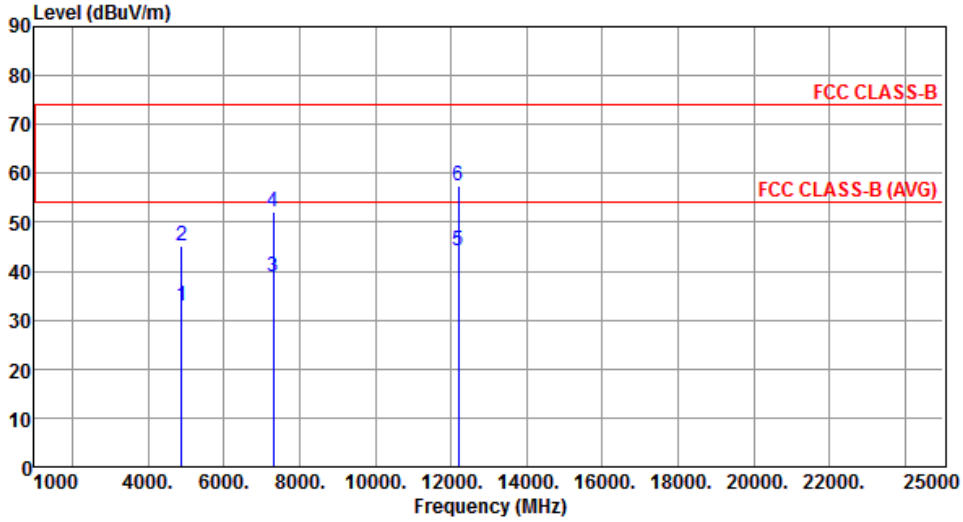
Modulation	GFSK/2Mbps	Test Freq. (MHz)	2440
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4880.00	33.27	54.00	-20.73	28.36	4.91	Average	100	20
2	4880.00	45.60	74.00	-28.40	40.69	4.91	Peak	100	20
3	7320.00	38.86	54.00	-15.14	28.54	10.32	Average	100	35
4	7320.00	51.67	74.00	-22.33	41.35	10.32	Peak	100	35
5	12200.00	43.96	54.00	-10.04	29.12	14.84	Average	100	30
6	12200.00	57.00	74.00	-17.00	42.16	14.84	Peak	100	30

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

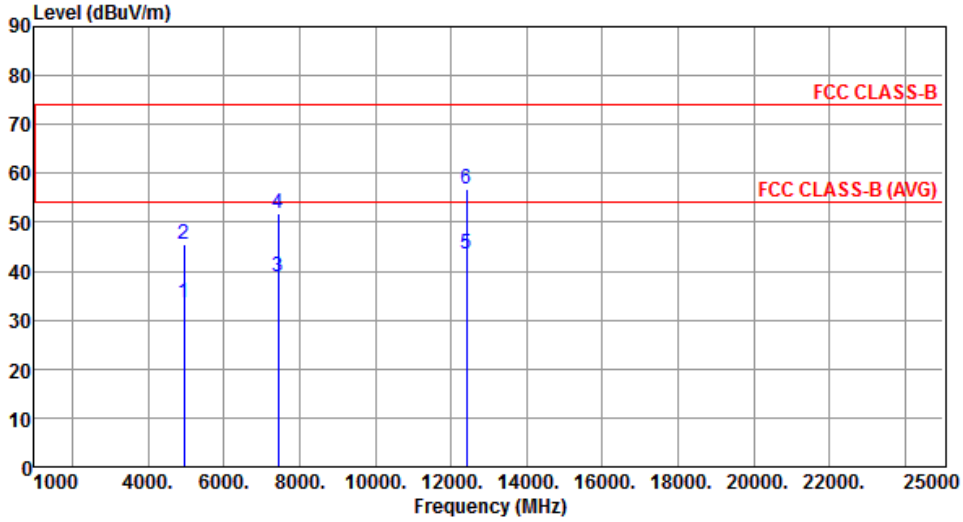
Modulation	GFSK/2Mbps	Test Freq. (MHz)	2440
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4880.00	33.03	54.00	-20.97	28.12	4.91	Average	100	70
2	4880.00	45.17	74.00	-28.83	40.26	4.91	Peak	100	70
3	7320.00	38.78	54.00	-15.22	28.46	10.32	Average	100	40
4	7320.00	52.01	74.00	-21.99	41.69	10.32	Peak	100	40
5	12200.00	44.12	54.00	-9.88	29.28	14.84	Average	100	60
6	12200.00	57.30	74.00	-16.70	42.46	14.84	Peak	100	60

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

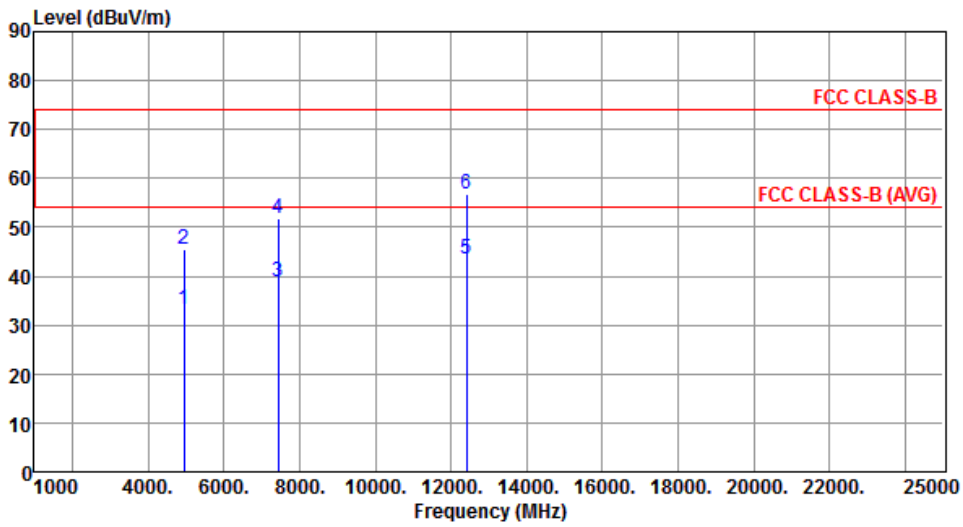
Modulation	GFSK/2Mbps	Test Freq. (MHz)	2480
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4960.00	33.40	54.00	-20.60	28.21	5.19	Average	100	30
2	4960.00	45.64	74.00	-28.36	40.45	5.19	Peak	100	30
3	7440.00	38.77	54.00	-15.23	28.42	10.35	Average	100	70
4	7440.00	51.69	74.00	-22.31	41.34	10.35	Peak	100	70
5	12400.00	43.45	54.00	-10.55	29.16	14.29	Average	100	20
6	12400.00	56.94	74.00	-17.06	42.65	14.29	Peak	100	20

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	GFSK/2Mbps	Test Freq. (MHz)	2480
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	4960.00	33.35	54.00	-20.65	28.16	5.19	Average	100	20
2	4960.00	45.59	74.00	-28.41	40.40	5.19	Peak	100	20
3	7440.00	38.90	54.00	-15.10	28.55	10.35	Average	100	30
4	7440.00	51.68	74.00	-22.32	41.33	10.35	Peak	100	30
5	12400.00	43.50	54.00	-10.50	29.21	14.29	Average	100	50
6	12400.00	56.85	74.00	-17.15	42.56	14.29	Peak	100	50

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

3.6 Emissions in non-restricted Frequency Bands

3.6.1 Emissions in non-restricted frequency bands limit

Peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz.

3.6.2 Test Procedures

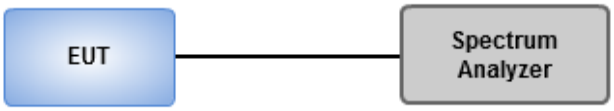
Reference level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Use the peak marker function to determine the maximum PSD level

Emission level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Scan Frequency range is up to 25GHz
4. Use the peak marker function to determine the maximum amplitude level

3.6.3 Test Setup

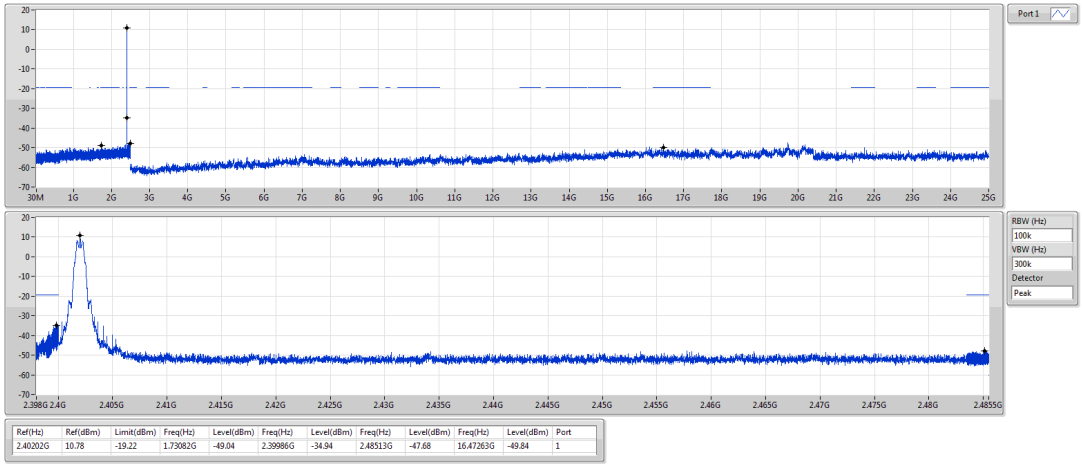


Highest power level

3.6.4 Test Result of Emissions in non-restricted Frequency Bands

BT-LE0.125_Nss1_1TX **CSE NdB**

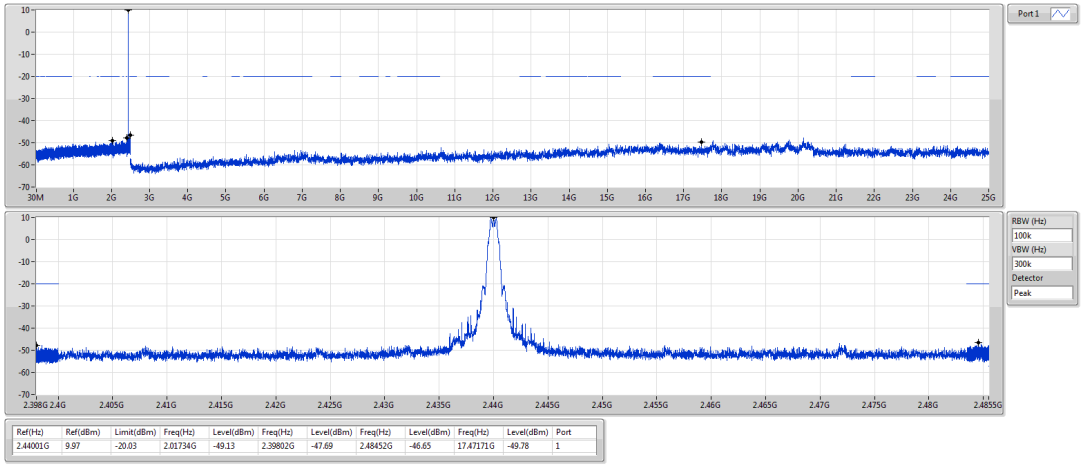
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40202G	10.78	-19.22	1.73082G	-49.04	2.39986G	-34.94	2.48513G	-47.68	16.47263G	-49.84	1

BT-LE0.125_Nss1_1TX **CSE NdB**

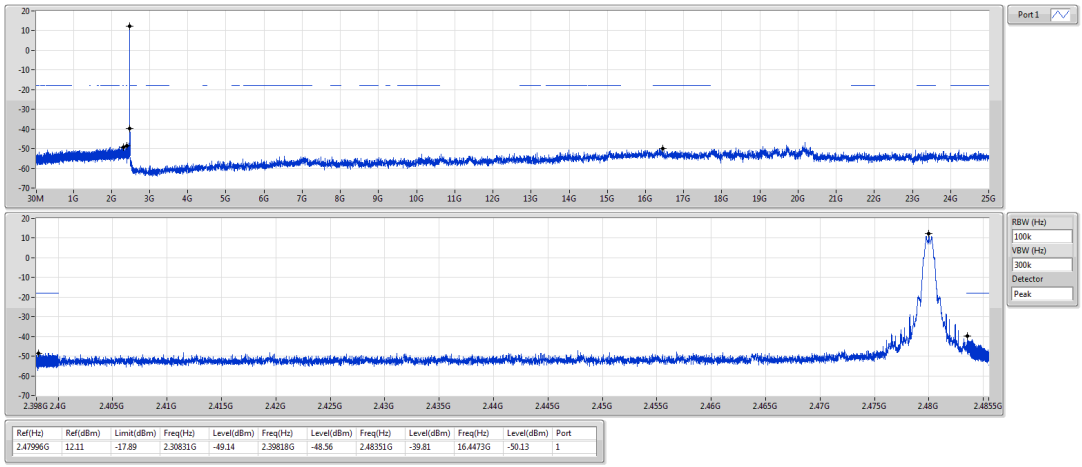
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44001G	9.97	-20.03	2.01734G	-49.13	2.39802G	-47.69	2.48452G	-46.65	17.47171G	-49.78	1

BT-LE0.125_Nss1_1TX **CSE NdB**

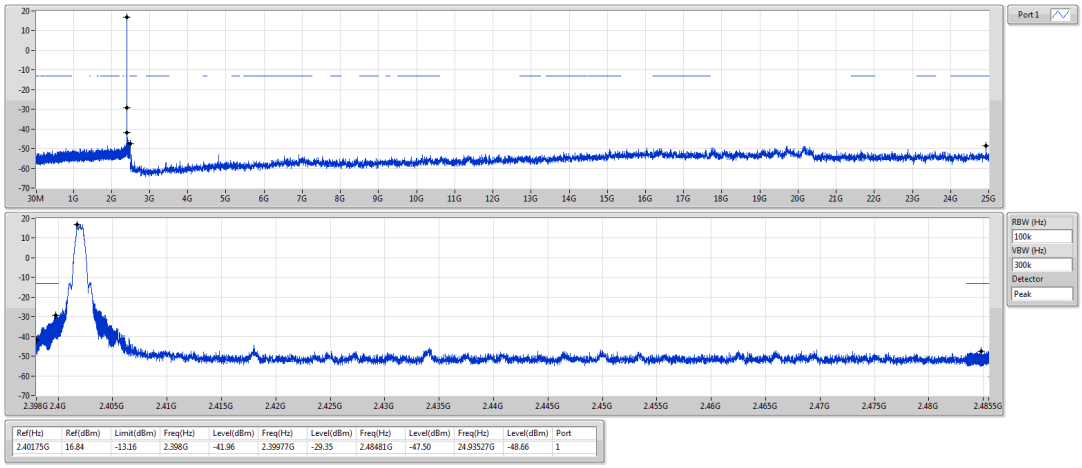
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.47996G	12.11	-17.89	2.30831G	-49.14	2.39818G	-48.56	2.48351G	-39.81	16.4473G	-50.13	1

BT-LE(1Mbps) **CSE NdB**

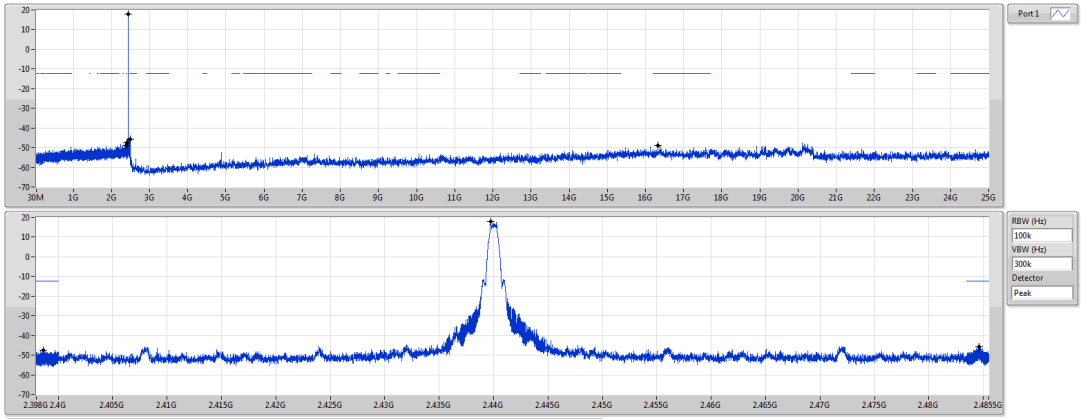
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40175G	16.84	-13.16	2.398G	-41.96	2.39977G	-29.35	2.48481G	-47.50	24.93527G	-48.66	1

BT-LE(1Mbps) **CSE NdB**

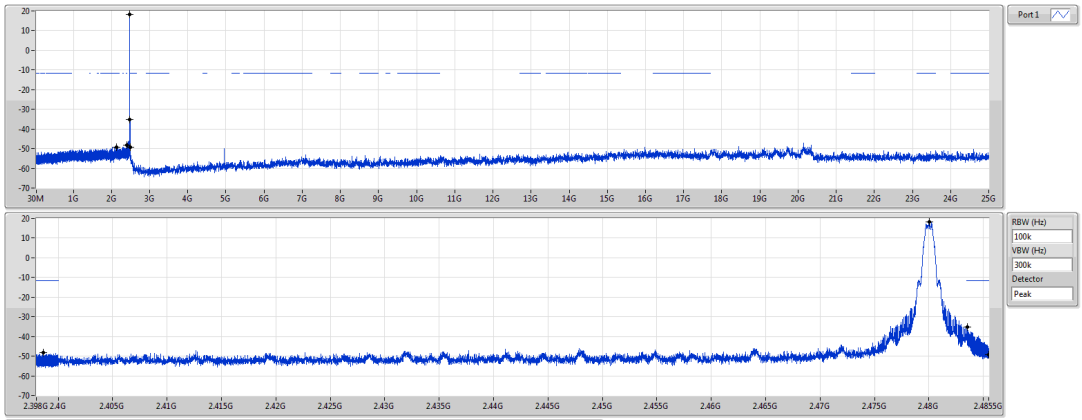
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43976G	17.83	-12.17	2.39238G	-48.85	2.39861G	-47.40	2.48464G	-45.70	16.3291G	-48.86	1

BT-LE(1Mbps) **CSE NdB**

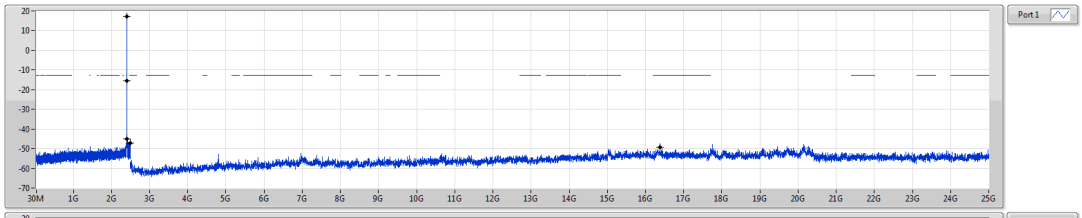
2480MHz

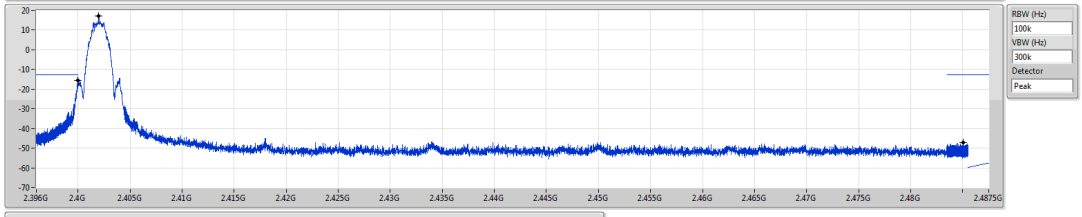


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48002G	18.37	-11.63	2.12864G	-49.10	2.39864G	-48.08	2.48351G	-35.13	2.4855G	-49.41	1

BT-LE(2Mbps) **CSE NdB**

2402MHz

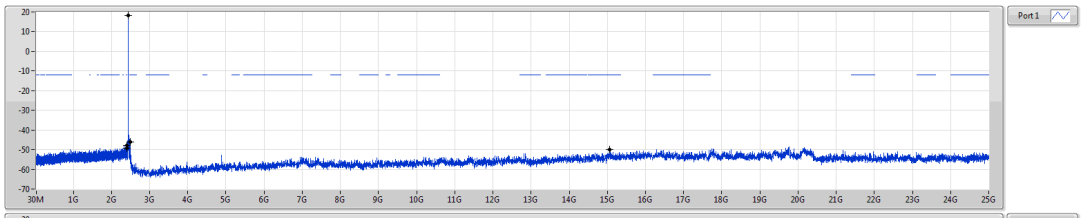


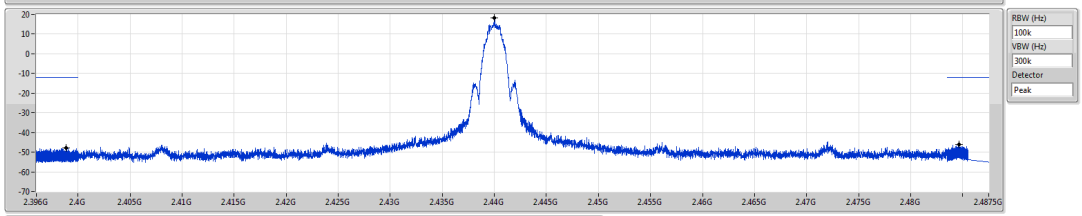


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402G	17.27	-12.73	2.39452G	-44.90	2.39999G	-15.37	2.48505G	-47.19	16.38539G	-49.12	1

BT-LE(2Mbps) **CSE NdB**

2440MHz

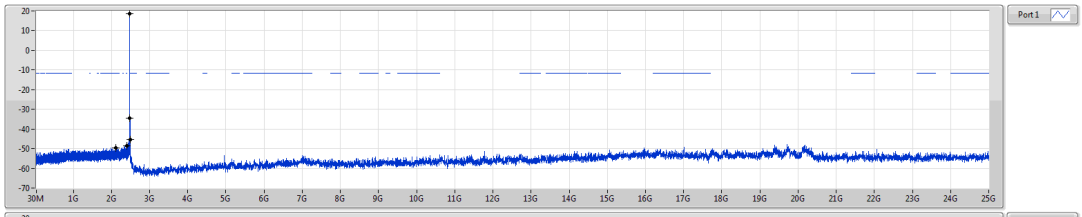


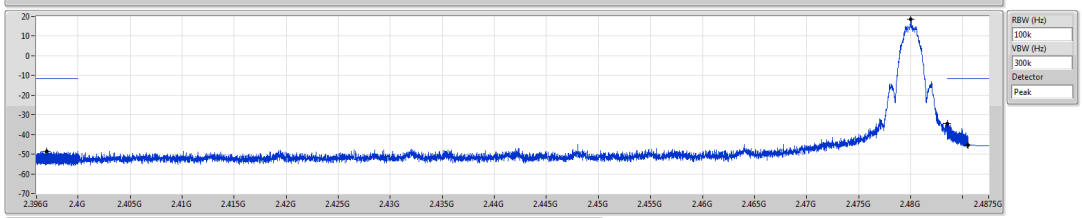


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44001G	18.13	-11.87	2.39393G	-49.19	2.39887G	-47.93	2.48466G	-46.09	15.05703G	-50.11	1

BT-LE(2Mbps) **CSE NdB**

2480MHz





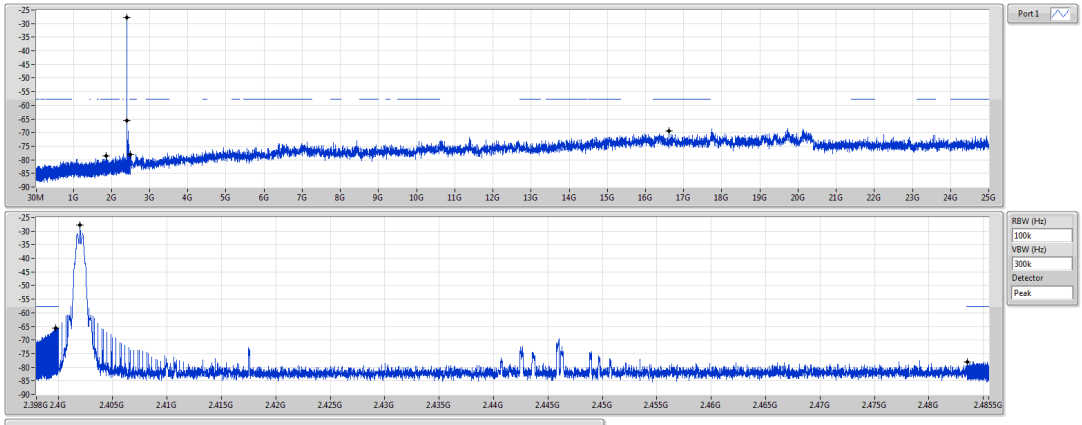
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48001G	18.45	-11.55	2.12125G	-49.46	2.397G	-48.50	2.48351G	-34.53	2.4855G	-45.36	1

Lowest power level

3.6.5 Test Result of Emissions in non-restricted Frequency Bands

BT-LE0.125_Nss1_1TX **CSE NdB**

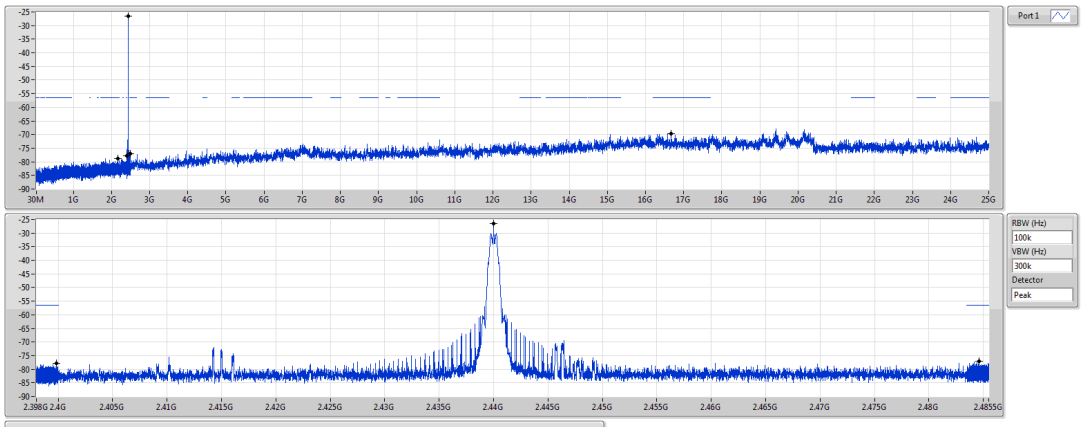
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40202G	-27.76	-57.76	1.85129G	-78.49	2.39978G	-65.64	2.48355G	-77.97	16.61898G	-69.38	1

BT-LE0.125_Nss1_1TX **CSE NdB**

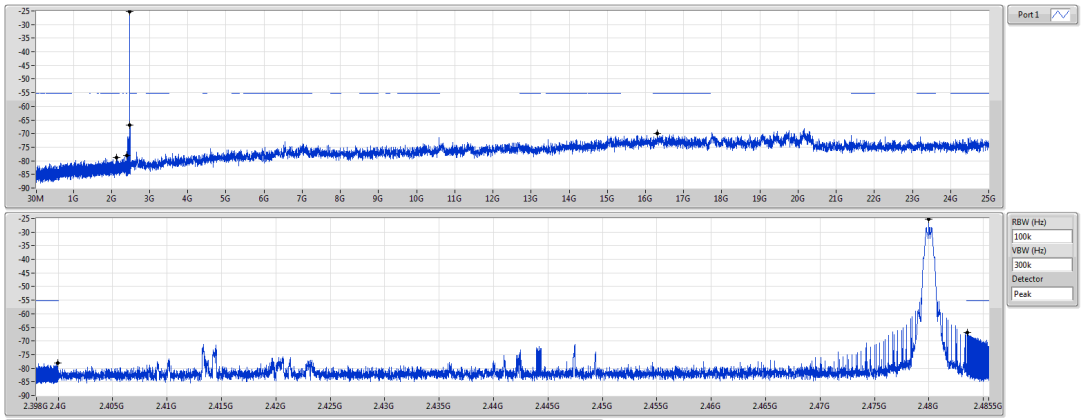
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44001G	-26.48	-56.48	2.16099G	-78.77	2.39985G	-77.88	2.48462G	-77.15	16.67808G	-69.60	1

BT-LE0.125_Nss1_1TX **CSE NdB**

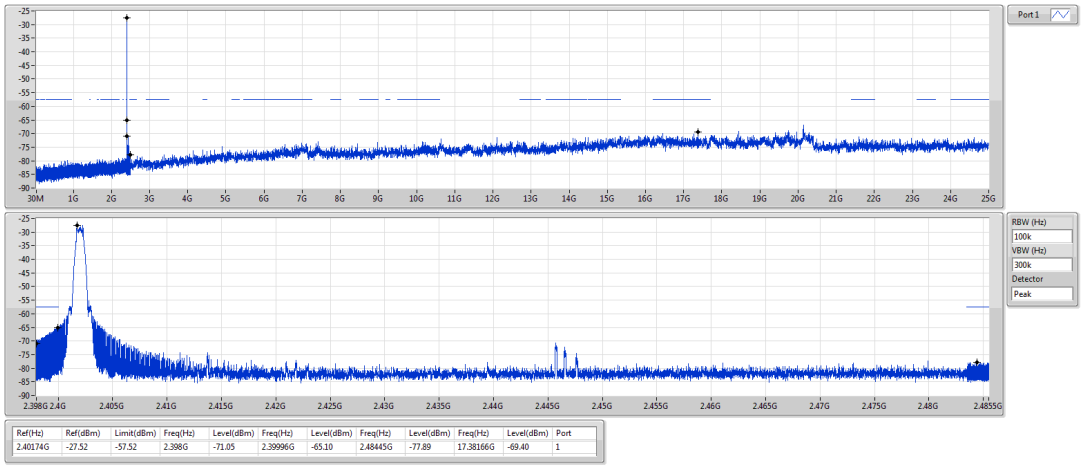
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.47999G	-25.22	-55.22	2.12864G	-78.72	2.39995G	-77.99	2.48351G	-66.97	16.31222G	-69.83	1

BT-LE(1Mbps) **CSE NdB**

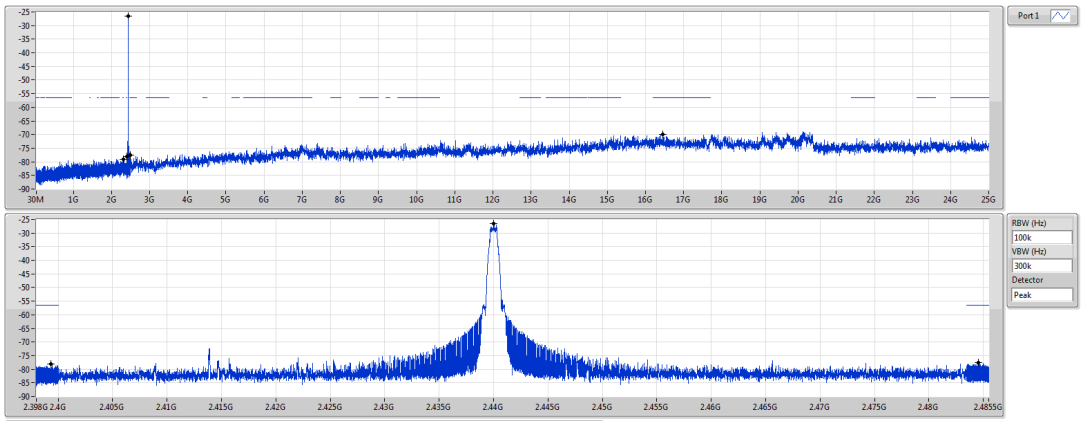
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40174G	-27.52	-57.52	2.398G	-71.05	2.39996G	-65.10	2.48445G	-77.89	17.38166G	-69.40	1

BT-LE(1Mbps) **CSE NdB**

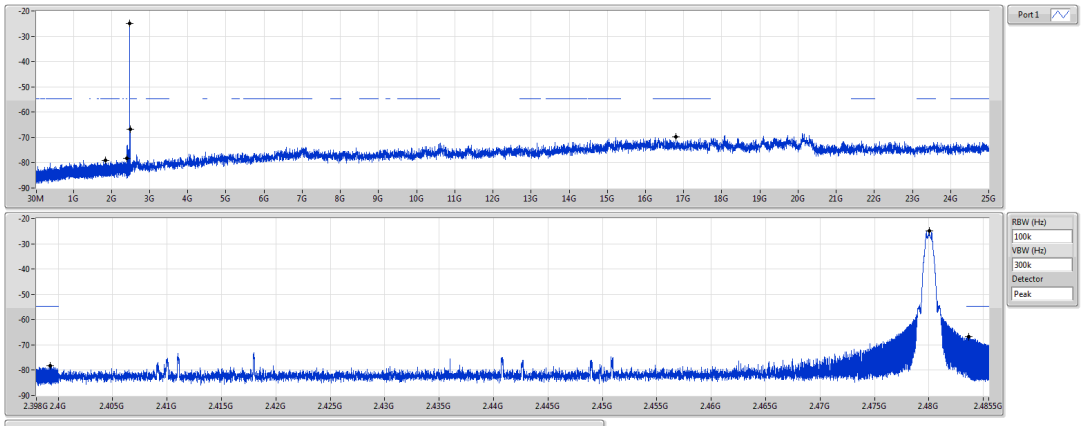
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44G	-26.56	-56.56	2.30446G	-78.99	2.39932G	-78.10	2.48452G	-77.55	16.45575G	-69.86	1

BT-LE(1Mbps) **CSE NdB**

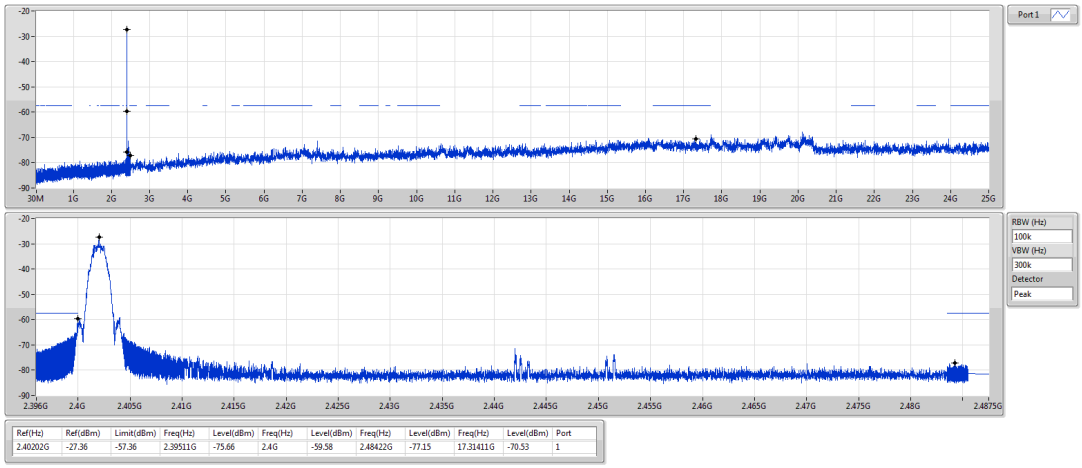
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48001G	-24.82	-54.82	1.84152G	-79.16	2.39927G	-78.12	2.48365G	-66.80	16.79628G	-69.69	1

BT-LE(2Mbps) **CSE NdB**

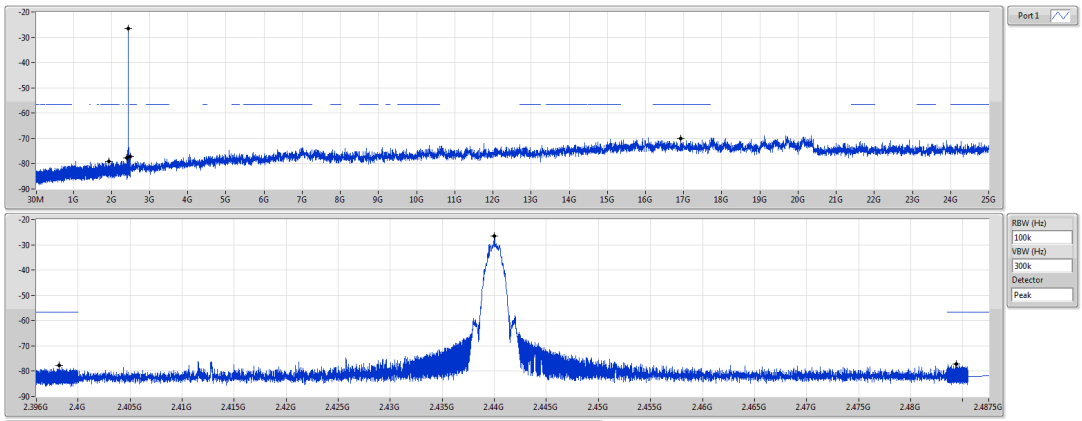
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40202G	-27.36	-57.36	2.39511G	-75.66	2.4G	-59.58	2.48422G	-77.15	17.31411G	-70.53	1

BT-LE(2Mbps) **CSE NdB**

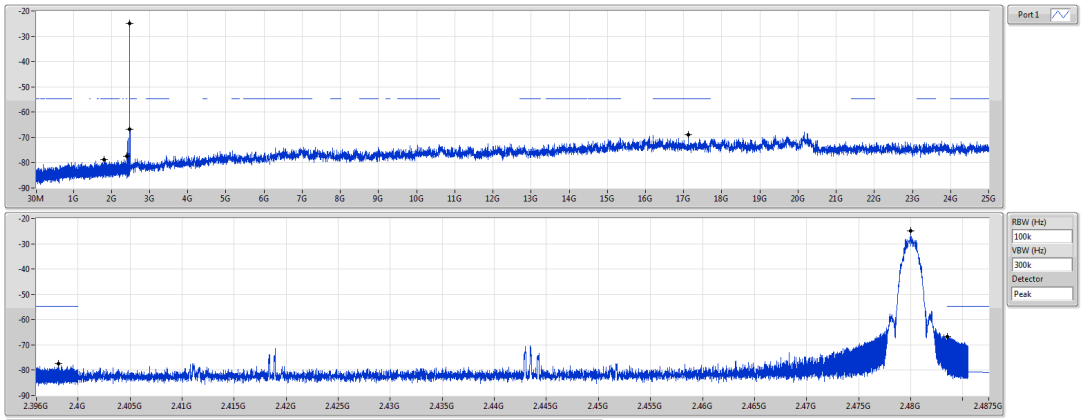
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44002G	-26.51	-56.51	1.93286G	-78.99	2.39821G	-77.62	2.48435G	-77.27	16.91729G	-70.09	1

BT-LE(2Mbps) **CSE NdB**

2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48G	-24.86	-54.86	1.81189G	-78.88	2.39813G	-77.40	2.48351G	-66.74	17.11711G	-69.02	1

4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website http://www.icertifi.com.tw.

Linkou	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.

If you have any suggestion, please feel free to contact us as below information.

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

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