



A calculation example for radiated spurious emission is shown as below:

BT	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH 00 2402MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) =
Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)
= 55.45 (dBμV/m)
2. Over Limit(dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 55.45(dBμV/m) – 74(dBμV/m)
= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)
= 43.54 (dBμV/m)
2. Over Limit(dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 43.54(dBμV/m) – 54(dBμV/m)
= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.



Appendix D. Radiated Spurious Emission Plots

Note symbol

-L	Low channel location
-R	High channel location



2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

BT		2.4GHz 2400~2483.5MHz Band Edge @ 3m																																																
ANT		BT CH78 2480MHz																																																
1	Horizontal	Fundamental																																																
Peak	No. 1098, Pengxi North Road, Kunshan Economic & Technical Development Zone, Jiangsu, China tel: +86-512-57900158 fax: +86-512-57900958 http://www.sporton.com.cn Site : 030905-KS Condition : FCC PART 15C 3m 3117 SN 75957 HORIZONTAL Project : RBW 1000.000kHz VBW 1000.000kHz SRT Auto Mode : (FREQ)263001 Plane : 2 Flare : 2 Full-directivity : 2 Power setting : 8 <table><tr><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pow</th><th>T/Pow</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Level Factor</th><th>Loss Factor</th><th>dB</th><th>dB</th><th>dB</th></tr><tr><td>1</td><td>2483.98</td><td>52.72</td><td>-21.28</td><td>74.00</td><td>49.31</td><td>32.96</td><td>7.25 36.82 153 180 Peak HORIZONTAL</td></tr></table>	Over	Limit	ReadAntenna	Cable Preamp	A/Pow	T/Pow	Remark	Pol/Phas	Freq	Level	Limit	Level Factor	Loss Factor	dB	dB	dB	1	2483.98	52.72	-21.28	74.00	49.31	32.96	7.25 36.82 153 180 Peak HORIZONTAL	No. 1098, Pengxi North Road, Kunshan Economic & Technical Development Zone, Jiangsu, China tel: +86-512-57900158 fax: +86-512-57900958 http://www.sporton.com.cn Site : 030905-KS Condition : FCC PART 15C 3m 3117 SN 75957 HORIZONTAL Project : RBW 1000.000kHz VBW 1000.000kHz SRT Auto Mode : (FREQ)263001 Plane : 2 Flare : 2 Full-directivity : 2 Power setting : 8 <table><tr><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pow</th><th>T/Pow</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Level Factor</th><th>Loss Factor</th><th>dB</th><th>dB</th><th>dB</th></tr><tr><td>1</td><td>2480.00</td><td>108.77</td><td>34.77</td><td>74.00</td><td>105.36</td><td>32.96</td><td>7.25 36.82 153 180 Peak HORIZONTAL</td></tr></table>	Over	Limit	ReadAntenna	Cable Preamp	A/Pow	T/Pow	Remark	Pol/Phas	Freq	Level	Limit	Level Factor	Loss Factor	dB	dB	dB	1	2480.00	108.77	34.77	74.00	105.36	32.96	7.25 36.82 153 180 Peak HORIZONTAL
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Peak	No. 1098, Pengxi North Road, Kunshan Economic & Technical Development Zone, Jiangsu, China Tel: +86-512-57900158 Fax: +86-512-57900258 http://www.sporton.com.cn SPORTON LAB. Date: 3 Level (dBm/100Hz) Frequency (MHz) FCC PART 15C (dBm) Site : 030905-K5 Condition : FCC PART 15C @ 3117 SN 70957 VERTICAL Project : RBW 1000.000kHz VBW 1000.000kHz SFT:Auto Model : FPO7A3001 Plane : 3 Full-directivity : 1 Power setting : 2 <table><tr><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phase</th></tr><tr><th>Level</th><th>Line</th><th>Level</th><th>Factor</th><th>Loss</th><th>Factor</th><th>Factor</th><th>Factor</th><th>Factor</th></tr><tr><td>106.97</td><td>73.1</td><td>74.00</td><td>48.07</td><td>32.98</td><td>7.25</td><td>36.82</td><td>370</td><td>228 Peak</td><td>VERTICAL</td></tr></table>	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	Level	Line	Level	Factor	Loss	Factor	Factor	Factor	Factor	106.97	73.1	74.00	48.07	32.98	7.25	36.82	370	228 Peak	VERTICAL	No. 1098, Pengxi North Road, Kunshan Economic & Technical Development Zone, Jiangsu, China Tel: +86-512-57900158 Fax: +86-512-57900258 http://www.sporton.com.cn SPORTON LAB. Date: 4 Level (dBm/100Hz) Frequency (MHz) FCC PART 15C (dBm) Site : 030905-K5 Condition : FCC PART 15C @ 3117 SN 70957 VERTICAL Project : RBW 1000.000kHz VBW 1000.000kHz SFT:Auto Model : FPO7A3001 Plane : 3 Full-directivity : 1 Power setting : 2 <table><tr><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phase</th></tr><tr><th>Level</th><th>Line</th><th>Level</th><th>Factor</th><th>Loss</th><th>Factor</th><th>Factor</th><th>Factor</th><th>Factor</th></tr><tr><td>106.97</td><td>73.1</td><td>74.00</td><td>48.07</td><td>32.98</td><td>7.25</td><td>36.82</td><td>370</td><td>228 Peak</td><td>VERTICAL</td></tr></table>	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	Level	Line	Level	Factor	Loss	Factor	Factor	Factor	Factor	106.97	73.1	74.00	48.07	32.98	7.25	36.82	370	228 Peak	VERTICAL
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2.4GHz 2400~2483.5MHz

BT (Harmonic @ 3m)

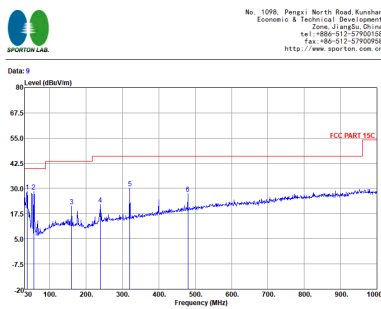
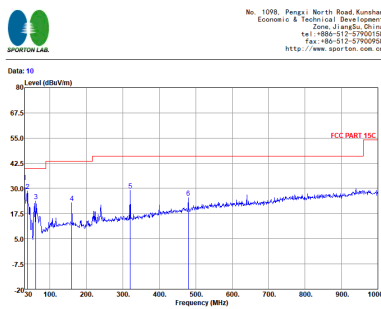
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Note: Pre-scanned for 18GHz to 26GHz, there are no signals, thus only test data below 18GHz are shown in the report.



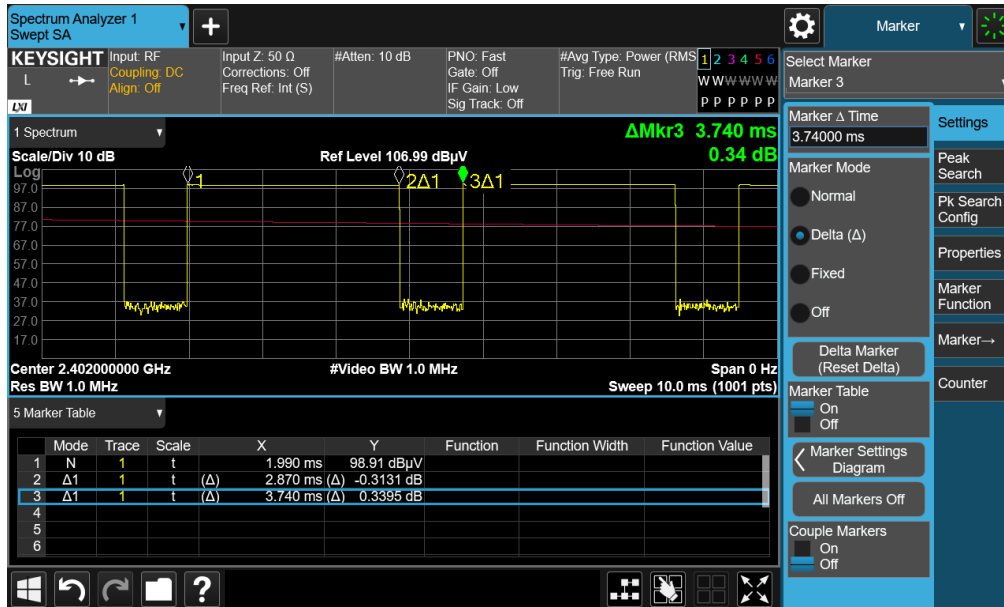
Emission below 1GHz

2.4GHz BT (LF)

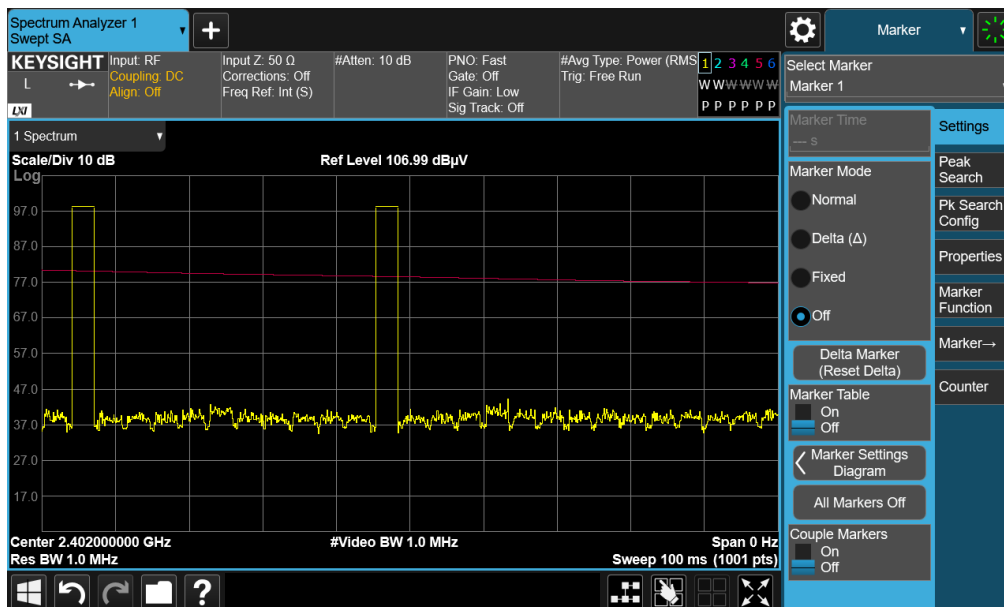
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4	159.98	23.02	-20.48	40.00	36.69	17.26	1.93	32.86	--- Peak VERTICAL																																																																																																																																																					
5	320.03	28.75	-11.07	40.00	38.43	20.68	2.72	32.90	--- Peak VERTICAL																																																																																																																																																					
6	480.08	25.36	-20.64	40.00	30.63	24.14	3.35	32.76	--- Peak VERTICAL																																																																																																																																																					

Appendix E. Duty Cycle Plots

3DH5 on time (One Pulse) Plot on Channel 00



3DH5 on time (Count Pulses) Plot on Channel 00



Note:

1. Worst case Duty cycle = on time/100 milliseconds = $2 * 2.87 / 100 = 5.74 \%$
2. Worst case Duty cycle correction factor = $20 * \log(\text{Duty cycle}) = -24.82 \text{ dB}$
3. 3DH5 has the highest duty cycle worst case and is reported.