

Application Note

EV5041 usage according FCC part 15.245

Version V1.0



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e-vision Inc.

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1 FCC 15.245 conforming RF front-end circuit

Spurious emission limits for license free SRD devices in the United States of America are regulated by the FCC part 15.245. The limits are 1.6 mV/m field strength for harmonic emissions. To operate the EV5041 at maximum power of 12 dBm harmonics have to be reduced by approximately 10 dB. Therefore an extra RF-filter has to be build on the board. An example for 925 MHz operation is shown in figure 1 consisting of CA, CB and LA.

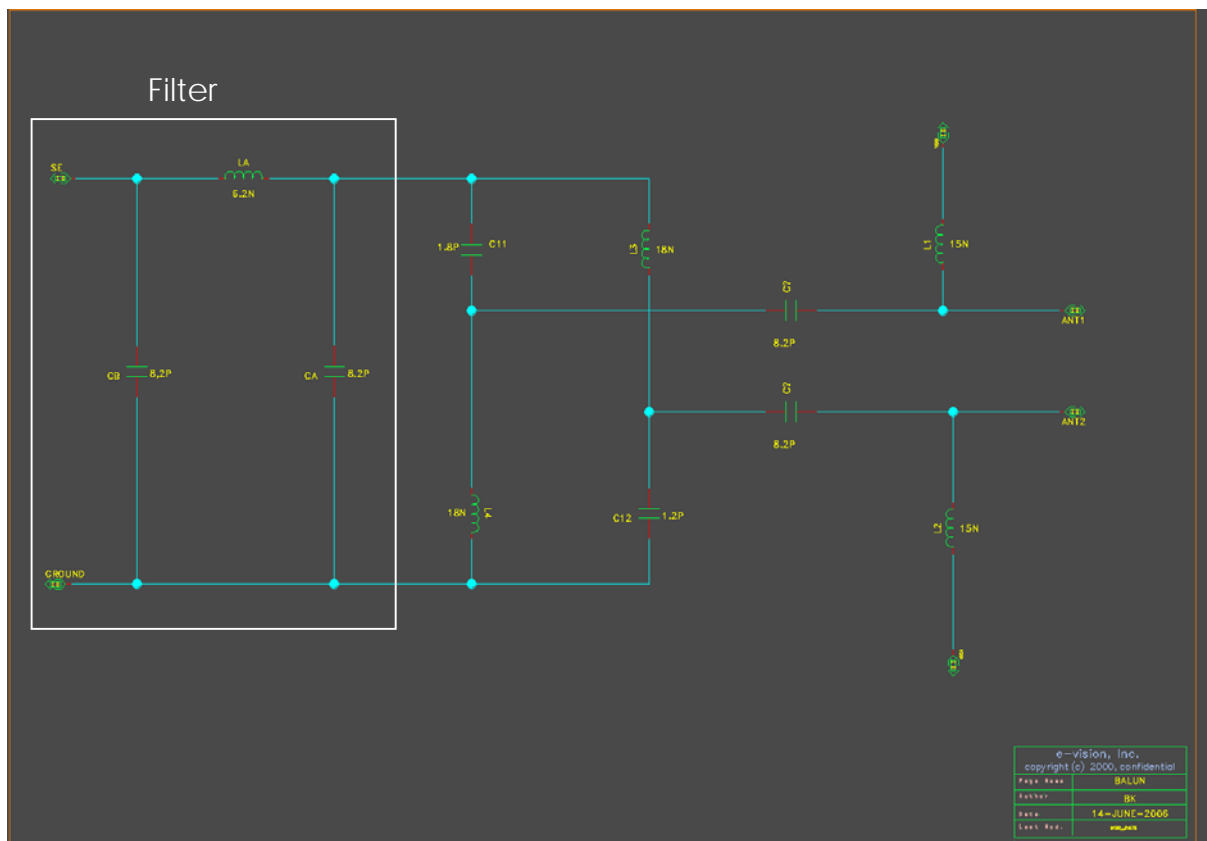


Figure 1 EV5041 antenna matching circuit for 50 Ohm antenna

In designs with directly coupled differential antenna, the shown filter can be replaced by a balanced filter with same cut-off or the antenna can be used for filtering.

2 Register settings

To reduce spurious emission in the neighborhood the PLL loop bandwidth has to be adapted. This is done with programming the charge pump current in register 0x0A. Depending on the data rate programmed low values are advisable.

3 References

- [1] e-vision inc., EV5041 Datasheet V4.9, see <http://www.evisioninc.ch/>
- [2] e-vision inc., EV5041 evaluation software,
<http://www.evisioninc.ch/ftp/EV5041>
- [3] FCC 15.245 <http://www.fcc.gov>