

# Circuit Board Design to Control EMI at the Source

## Rick Hartley

**June 12, 2018**

**7:30AM—6:00PM**

**Giovanni's Restaurant  
and Conference Center  
Rockford, IL**

### Seminar Overview

**Session 1 - Grounding to Control Noise and EMI**

**Session 2 - Power Distribution to Control SI and EMI**

**Session 3 - Layout of Switch Mode Power Supplies**

**Session 4 - PC Board Stack-ups to Improve Grounding and Power Delivery**

### Seminar Registration

<b>IEEE Members</b>	<b>\$125.00</b>
<b>Non-IEEE Members</b>	<b>\$175.00</b>
<b>Student/Life Members</b>	<b>\$60.00</b>
<b>Group Rate (4 + from same corporation), please call.</b>	

**Seminar Fee includes seminar attendance, a copy of the presentation material, and breakfast, lunch, and refreshments.**

**Registration help for payment:  
Adrian Vandergrift  
aevandergrift@ieee.org  
815-226-2518**

**Questions? Please contact:**

**Jamal Shafii : Jamalshafii@ieee.org**

**Phone: 608-658-6830**

**Steve Davidson :**

**steve.davidson@ieee.org**

**Phone: 815-218-8249**

This seminar will focus on the issues PCB designers and engineers need to know to prevent EMI, signal integrity, crosstalk and grounding problems in high-speed digital. Knowing how to design circuit boards to contain and control energy (fields) and knowing how to mitigate and control the effects of high-speed devices is the key to successful design of low noise circuits. The speaker will simply explain where energy truly resides in a PC board and how we need to design because of that to prevent problems. Specifically, the speaker will explain proper grounding, proper power distribution design, layout of switch mode power supply, and proper stackup to control noise and contain fields. For complete seminar outline refer to link below.

Attendees will have the opportunity to network with EMC and Test Equipment vendors from across the U.S. Past seminars have featured up to 32 exhibitors!

**Rick Hartley**, recently retired senior principal engineer at L-3 Avionics Systems, is the principal of RHartley Enterprises, through which he consults and teaches



internationally to resolve noise, signal integrity and EMI problems. Rick's focus is on correct design of PC boards to prevent and/or solve problems. He has consulted with major corporations in the US and 12 other countries. His design career focused on circuits and PC boards for computers, aircraft avionics and telecommunications. His consulting focuses on those same areas, as well as the automotive and appliance space. Rick has an engineering degree and 52 years of experience. He has dedicated the past 42 years to PC board

and circuit development with emphasis on control of noise, in digital, analog and RF circuits. Rick has taught seminars at numerous conferences, including the IEEE EMC Symposium, PCB West, IPC Apex/Expo and others. He is a member of the executive board of the IPC Designers Council and past member of the Editorial Review Board of Printed Circuit Design Magazine. Rick has written numerous technical papers and articles on methods to control noise, EMI and signal integrity.

Rockford, Illinois is located just over an hour's drive from Chicago's O'Hare airport. Direct bus service from Chicago/O'Hare airport is available. There are several hotels within few blocks of the Giovanni's Conference Center. For more information about things to see and do in Rockford, Visit <https://www.gorockford.com/>

This seminar will qualify for 7.2 Professional Development Hours (PDH).

**For more information visit our website:**

<http://ieee.org/rrvs/>

**Registration Link:** <https://goo.gl/BuwEZd>