

# THE LOG PERIODIC

www.scvemc.org Santa Clara Valley Chapter of IEEE Electromagnetic Compatibility Society

## IEEE/EMC Society Meeting: Tuesday, April 13, 2010

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Time: Social 5:30 p.m. Presentation 6:30 p.m.

Place: Applied Materials Bowers Cafeteria  
3090 Bowers Ave., Santa Clara, CA 95051-0804

Subject: Demystifying Radio Frequency Fields and Radio Frequency Components,  
Aiding the 17025 Laboratory Accreditation Process by Capturing Key  
Performance Data on RF Power Amplifiers

Speaker: Tom Mullineaux, MILMEGA Limited

### Abstract:

#### First Presentation:

This presentation looks at situation the great 18th and 19th century masters faced along the uncharted road from static electricity to the prediction and discovery of RF fields. The story picks up with Benjamin Franklin's contribution to static electricity and then describes the 'great race' that followed the accidental discovery that an electric current deflects a compass needle. The talk is rounded off with an explanation of the working of common RF components.

#### Second Presentation:

RF immunity standards do not require periodic calibration of the RF amplifiers used in RF immunity testing. This is justified from a strictly technical point of view, yet creates the situation where there is no data on file for the most expensive piece of equipment in the test set-up. This presentation goes through the key amplifier performance metrics, and introduces a simple/swift method of capturing key data that can be held on file as 'trend-analysis' data.

### Speaker Bio:



Tom is an RF engineer with experience in leading RF design teams in the design and development of high-power microwave amplifiers for use in defense and commercial applications. Tom received his degree in electrical and electronic engineering from Portsmouth University, England in 1989. He has delivered both practical and theoretical presentations to IEEE EMC Society sponsored events including 'Linearization of an RF Amplifier for Immunity Testing' at the 2004 Santa Clara EMC Symposium, and has had many technical articles published, including 'Rating Power Amplifiers for RF Immunity Testing' for Evaluation Engineering Magazine, 2003; 'Selecting antenna/power amplifier combinations for the coming new RF immunity standards' for Interference Technology Magazine 2004; 'Using radar amplifiers for automotive RF immunity tests' for Evaluation Engineering Magazine, 2005.

$$\begin{aligned}\nabla \times \vec{E} &= -\frac{\partial \vec{B}}{\partial t} \\ \nabla \times \vec{H} &= \frac{\partial \vec{D}}{\partial t} + \vec{J} \\ \nabla \cdot \vec{D} &= \rho \\ \nabla \cdot \vec{B} &= 0\end{aligned}$$

Food & Refreshments: Light Dinner and beverages will be served for a fee. Coffee, tea, and snacks are served free of charge.



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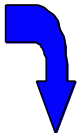
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