

Norm Swanberg is an RF/Microwave engineer with his roots back in the early days of Microwave Associates in the greater Boston Area. He studied Physics as an undergrad at Brown University, did some graduate work in this field before coming to the conclusion that his real destiny was in the more practical world of Electrical Engineering. While Working for Microwave Associates (later to become MA/Com and ultimately Tyco) and Alpha Industries (a progenitor of Skyworks) He finished his Masters in Electrical Engineering nights at Northeastern. From there, he decided to explore new territories on the West Coast where he did millimeter wave work as well as working on the early frontiers of GAAs IC design. It was during this period he first started taking advantage of the early EDA tools to work RF technical problems, beginning with Les Besser's Compact and Super Compact. These early programs were run on large mainframes remotely, generally well after hours due to access and run time issues. The interface was largely text based unlike modern GUI interfaces and relied on realizing circuits by building netlists. Touchstone and EESof were the next trend in the thread as the advent of the personal computer and their use in the Engineering world began to blossom. Oh those dot matrix printers chattering out the plots and simulations! And soon ADS began trying to consolidate these tools and move to higher and higher levels of simulation capabilities. The GUI and the inkjet printer were welcome additions...

He was an early adopter of the Eagleware package, Randy Rhea's brainchild and a welcome lower cost approach to sophisticated RF engineering software. In point fact, there were days early on when calling the support line to get help in configuring simulations, Randy himself would answer the phone to field the questions. Solutions converged pretty quickly with this kind of tech support!!! Randy introduced significant innovations in the software capabilities in those days since he was considered one of the RF gurus in Synthesizers and PLLs. In addition, the filter synthesis programs he introduced were revolutionary and are still some of the best available. Eagleware has now become Genesys and owned by Agilent and the program still offers innovative solutions like What IF for Frequency Planning and Spectrasys which offers true end to end RF signal chain analysis which far exceeds the old Spreadsheet approach to solving link budgets. These two in particular are mainstays of Mr. Swanberg's consulting business, along with the core simulation package.

Over the years, Mr. Swanberg has worn a few hats and covered a relatively diverse set of RF areas.... from research to production, from simple mixer circuits with branch line couplers, to Quasi Optical Down converters at 200 GHz, from section head to principle investigator, from management to technical lead, from corporate direct to consulting. Mr. Toad's Wild Ride, indeed.

These days he is dedicating his time to his consulting business, Dome Resonators. Recently, a military receiver, for which the hardware is now in evaluation testing, was developed exclusively through the Genesys tools, starting with WHAT IF to set the frequency plan, and moving on to extensive use of Spectrasys to analyze and implement the RF front end right through the ADC. Momentum was used to develop an S Band Hairpin filter intended for the Front end channel filter. He is currently making use of EMPro to analyze the RF launch and the signal integrity of the controlled length differential pair between the ADC and the FPGA.

RF for fun and profit!!!

In his free time, Mr, Swanberg is an avid Jazz aficionado and host of a weekly radio program on KSDS-FM in San Diego on Tuesday nights. In 2011, KSDS was awarded JazzWeek Magazine's Large Market Station of the Year, a prestigious award determined by the vote of Record Companies, professional peers and readers of JazzWeek. In 1993 the National Association of Broadcasters awarded KSDS the “Jazz Station of the Year” distinction, receiving the prestigious Marconi Award.

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