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Lots of Great Products are Available for Today's Engineers

Gary Breed
Editorial Director



Kudos to all the component, test equipment and software companies providing products for engineers to use! While an individual engineer may see a handful of these great products up close, an editor is inundated with press releases and data sheets for every new product in the industry, as well as an occasional sample or hands-on demonstration. As my staff and I were sorting out this month's announcements for our new product sections, I decided that it was a good time to express my admiration for this impressive collection of high frequency devices and tools.

Components—Both active and passive components have made astonishing improvements in performance, price and functionality over the past several years. ICs for specific applications make it easy for a product designer to create a new offering that will comply with standards and regulations, while high performance building-block ICs allow the flexibility to design for any possible application. Discrete transistors, from ultra-low noise to kilowatt power levels are outstanding examples of applied physics. Common R-L-C devices have not been ignored, achieving new levels of performance at smaller sizes, often with lower prices.

Test Equipment—I'm not sure which is most remarkable, the levels of performance achieved by the finest instruments, or the ability of economical test gear to deliver "marvelously adequate" performance. In either case, the user is the beneficiary. Perhaps even more important is usability, mainly the capability to interconnect instruments with the engineer's suite of design and analysis tools, records and reports.

Design Tools—Improved models, mathematical algorithms, and simplified standards-based setups are among the better improvements inside EDA software. I am pleased to see recent efforts to allow sharing of data and analysis results among different tools, permitting an engineer to use a familiar EM analysis program with another vendor's system design tool, then perhaps do a custom analysis on the resulting waveform using a mathematics software package. This also allows better sharing of data among colleagues.

Interconnections—The world of cables and connectors has been as active as any area of high frequency products in recent years. New form factors for improved reliability, better materials, more precise manufacturing, and the use of today's mechanical and electromagnetic design tools

have all been used to keep these essential products abreast of current engineering performance demands.

Supporting Services—There are many other contributors to the development of today's products, and to an engineers ability to use them. At the hardware level are foundry services and packaging specialists for components, as well as raw materials suppliers that are working with component companies. For the engineer, educational resources are as good as ever for both university courses and continuing education. The technical support provided by vendors to designers has become an indispensable part of the engineering process.

With regard to this last comment, the differentiation between a component designer and a product designer is disappearing. The component designer has become a

member of the overall development team, handing over one piece of the design solution to another member of the team—who just happens to work at a customer company. This kind of top-to-bottom collaboration is a highly positive result of changes in how high frequency products are developed.

Watching technology evolve is one of the best parts of my job. And I can't wait to see what happens next!

Check Out Our New Online Edition

In January, we began offering the entire magazine online, in the same visual form as the printed version. We would like to get more feedback on how it looks and works for you.

For practical purposes, the online edition does not have charts, graphs and photos that are as

sharp and clear as they appear in print—the required file sizes would take too long to download with some Internet connections. But we have been careful to keep everything readable. Let us know if it's OK or if a high-resolution version is needed.

In a couple months, we will start requiring you to register to see the online edition as soon as it is published. This is the same process as your free subscription to the printed and mailed version.

Also, as we have done since our founding, all technical articles and columns will continue to be available in our archives after the online edition has been updated with the next issue.

So keep reading *High Frequency Electronics*—whether it arrives in your mailbox or at www.highfrequencyelectronics.com!