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Looking Back, Looking Ahead

Scott L. Spencer
Publisher



This is the 103rd edition of *High Frequency Electronics*. The first issue was mailed and posted on-line in July 2002 just shortly after the MTT-S in Seattle, Washington. The concept for *High Frequency Electronics* was well understood by our target audience -- design engineers whose work involved RF and microwave technology -- but the global economic situation and worldwide chaos provided a backdrop of skepticism as to whether a new publication could succeed in those difficult times.

Put into context, the United States had just launched Operation Anaconda in Afghanistan. Telecommunications giant WorldCom had filed for Chapter 11 bankruptcy protection, in what at the time was reported to be the largest corporate failure in history. By September 2002 the Dow Jones Industrial Average had lost 27% of the value it held in January 2001. The NASDAQ, where many of the public technology companies in our field are listed, had lost 44% of its value. In 2000 leading up to the terrorist attacks of September 2001 the sum in valuation of all NYSE-listed companies stood at \$12.9 trillion, and the valuation sum of all NASDAQ-listed companies stood at \$5.4 trillion, for a total market value of \$18.3 trillion.

The NASDAQ subsequently lost nearly 80% and the S&P 500 lost 50% to reach the October 2002 lows. The Internet "Bubble" had burst, and after recovering from lows reached following the September 11 attacks, indices slid steadily starting in March 2002, with dramatic declines in July and September leading to lows last reached in 1997 and 1998. It was an uncertain time to launch a new business venture, but one overriding factor prevailed: the scientific community's spirit of innovation and accomplishment. This, I was sure, would drive our industry into new areas of opportunity and prosperity.

So what started as a simple idea, boldly emblazoned on the front cover of the July 2002 inaugural issue, "Information Resources for a New World of Technology," continues today. The world economic outlook can still be described as volatile at best -- but the spirit and drive to innovate lives on.

Whether developing high frequency and high-speed systems for applications in wireless and wireless communications, military and civilian defense, navigation, computing, or security systems, RF and microwave design engineers still need to understand the foundations of the science such as the frequency-dependent behavior of AC circuits and the electromagnetic principles described by Scottish physicist and mathematician James Clerk Maxwell. They must also stay abreast of and embrace the incredible advances that are being made each and every day in materials, design aids such as circuit modeling, simulation and synthesis software, and test and measure-

ment techniques and equipment. These are the reasons we look forward to the next 10 years as a resource for our readers and advertisers: engineers who are crossing the boundaries between digital, analog, RF, microwave, mm-wave and lightwave technologies.

Last month I reported that our Senior Technical Editor Tom Perkins is the holder of three patents, with an additional three patents pending. That "pending" figure can now be changed to one. In November, Tom was awarded US Patent 8,063,848 for an X, Ku, and K-band omnidirectional antenna with dielectric loading, and US Patent 8,068,066 for an X-Band Turnstile Antenna. The antennas can be used in microwave communications including Digital Radio Frequency Tags (DRaFTs) communicating with airborne and satellite platforms.

In This Issue

In this edition, Tom Perkins has contributed a thought-provoking article on the ubiquitous ISM bands, including his personal association with the origin of an associated technology.

Teradyne's Ron Burke describes how ATE systems must include hardware and software tools to allow fast program development for complex protocols that can stimulate, measure and interpret captured signals for both the digital and RF sections of the device.

G. T. Watkins of Toshiba Research Europe Limited describes a high efficiency wideband discrete current-mode class G amplifier suitable for applications involving high peak-to-average-power ratio (PAPR) signals, like that of orthogonal frequency division multiplexing (OFDM).

Jerry C. Posluszny of Mobile Mark offers a tutorial on the pitfalls frequently encountered when selecting and using MIMO and "smart antennas."

As we enter our tenth year in January 2012, we are reminded of the challenges that lie ahead, but we are also grateful for the support from our readers and advertisers. Thank you and I look forward to the next 10 years of service to our industry.

On a separate note, *High Frequency Electronics* has agreed to be the Exclusive Sponsor of the IMS

Monday Night Welcome Reception at IMS 2012, to be held June 17 - 22 in Montreal. The reception is open to everyone -- exhibitors, delegates, volunteers, and staff. It is typically the largest single gathering of the IMS event. Please mark your calendars.

Best wishes to all for a joyous Holiday Season and a prosperous 2012. **HFE**