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“Duz” Math Count?

Tom Perkins
Senior Technical Editor



If the title above got your attention, I'll explain shortly. Some of this column was composed while watching the Super Bowl. A couple of months ago our Publisher suggested to our Associate Publisher/Managing Editor the possibility of a 49ers - Patriots showdown in the big game. Unfortunately for those of us in New England, Scott was only 50% correct. Still, it was a good call, considering the advanced timing of his guess.

Two things to ponder this month. One is the constant cycle of acquisitions (and sometimes demise) of microwave component and systems manufacturers which seemed to commence about 30 years ago and accelerated significantly in the 1990s and later. Recently I was looking for information on companies I dealt with a few years ago, only to learn of their absorption into other entities. One source of information, *Where are they now?*, is found on a website called Microwaves 101 that includes a long list of companies that no longer exist, along with some background information.

See: <http://www.microwaves101.com/encyclopedia/wherenow.cfm>.

Industry Evolution

Having firsthand knowledge of many of these companies and their casts of principal characters, I have to say that the information offered amounts to a fairly good compendium. My theory about turnover is that many first-generation companies, some of which were spawned shortly after World War II by the original scientists, engineers and entrepreneurs—many of whom became “giants” of our industry—were later sold off as there were no obvious successors to assume leadership. Many, but not all, of these pioneers became quite wealthy in the process. Other companies came and went due to involvement in narrow, niche product lines without a vision or “game plan” as to how to deal with inevitable obsolescence of product technology. Some also could not expand their frequency-range horizons. An extreme analogy in another technology would be the demise of photographic film and Polaroid images due to digital photography.

Major changes included MMICs replacing discrete devices, PLL oscillators replacing multiplier chains, stripline replacing some waveguides, microstrip replacing stripline, new forms of coax connectors, phased arrays replacing rotating antennas, and on and on. Now trending is GaN replacing high-power vacuum-tube devices. The final outcome on this one is still difficult to predict. Another story is the rise and fall of many compound semiconductor foundries. It appears that companies involved in passive circuitry components may generally have more longevity than active circuits. Capacitors, resistors, and to a lesser extent filters, couplers, etc. which come in many forms, could certainly be labeled as enduring technology.

Thus the first word of this column's title—a play on words. Anyone remember “Duz” detergent? This product was a staple when I was a kid that later disappeared, just like many microwave names and products more recently. A better analogy might be the demise of the iceman or blacksmith.

OK—what about Duz Math Count? Yes, MATHCOUNTS. Last month I had the privilege of assisting a local regional competition of MATHCOUNTS. MATHCOUNTS is a middle school mathematics competition held across all 50 states. Its founding sponsors include the CNA Foundation, the National Society of Professional Engineers, and the National Council of Teachers of Mathematics. The competition is designed for sixth, seventh, and eighth graders. Problem-solving is emphasized for both individuals and teams from competing schools, both public and private. The subject matter includes algebra, geometry, and combinatorics. These are not easy tests and perfect scores are rare, at best.

This program runs with a network of more than 17,000 volunteers including program administrators and school coaches who organize MATHCOUNTS' local and state programs. Each year over 7,000 schools run MATHCOUNTS programs. In February and March, over 500 local competitions and 56 “state” competitions are conducted. Hundreds of corporations, foundations, community organizations, and individuals generously support MATHCOUNTS programs.

STEM and the Super Bowl

I mention this because at the outset I alluded to the Super Bowl. Well, an important area which ultimately contributes to the welfare of our industry is Science, Technology, Engineering, and Mathematics (STEM). Our industry, in turn, makes

many aspects of such events as the Super Bowl possible because of our bright teams of engineers. As was readily demonstrated on February 3, this even applies to venerable (and vulnerable) areas such as supplying raw AC power to such functions. So STEM education is immensely important to maintaining and growing our entire infrastructure. It is a treat to be

involved in a competition that emphasizes mathematics and such with team shirts, coaches and pseudo-cheerleaders, also called “parents.”

At least the East Coast team won the big contest! Condolences to Tim and 49er fans everywhere.

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