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SUMMIT
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The Most Universal Components: Cables and Connectors

Gary Breed
Editorial Director

Interconnections are probably the most common, and among the most important, design choices in all electronic equipment, especially at high frequencies. In recognition of that importance, we cover cables and connectors several times each year—with featured product coverage (see page 40), in our Technology Report, and with application articles on product performance, selection and installation.

To a layman, this segment of the high frequency market may seem mundane, relating it to AC wall sockets, power adapters or the headphones for an MP3 player. The only exposure to high frequencies is the occasional F connector for their entertainment system components. Engineers specializing in other parts of the system might not appreciate the importance of these products beyond the basic factors of cable loss and connector standardization.

My early career was in the broadcast industry, where cables and connectors are anything but mundane! Performance must be predictable and failures cost money and major inconvenience. The same can be said for aerospace, medical and other applications with no tolerance for downtime. And that's just the reliability aspect.

Performance factors are also critical for engineering design, and there is a long list to consider: cable and connector loss, VSWR, temperature stability, abrasion resistance, mating/unmating cycles, unit-to-unit mechanical tolerance, and many more. From laboratory instrumentation to field-deployed sensor and communications equipment, the range of requirements for each parameter is vast.

I'm sure most of our readers understand these issues, but it never hurts to offer a reminder. Sometimes it's easy to forget that common things are no less important because they are widely used.

Follow-Up Notes on Politics...

Several of you asked whether I was going to send the questions posed in last month's editorial to the presidential candidates. The answer is, "Yes!" Hopefully, we will get some responses that shed light on the attitudes of the candidates on the topic of telecommunications technology. I will let you know the results in the January issue.

Also, we will repeat the exercise with the official candidates after the

parties have developed comprehensive platforms at their national conventions. While we recognize that there are many other matters of great concern, it is fair to expect any national candidate to give serious thought to a key technolog area that affects every one of their constituents, with extra importance to you and me.

...and Our House...

Some readers have asked about my house (April 2007 editorial), wondering if I had any more energy savings information. I am happy to report that it is proving to be very energy efficient. My point of comparison is a house we rented for three years prior to moving into the new one. The rented house was a classic midwestern ranch with ~1400 square feet. It was built in the late 1960s and had reasonable insulation for that era, storm windows, a recently upgraded furnace, etc. Our new house has about 2-1/2 times the square footage and 4 to 5 times the enclosed volume.

Over the past 12 months, gas (propane) usage is nearly identical to the rented place. Electricity usage is also very similar, and the rate at the new house is lower. Our typical monthly electric bill is $70, which went up to $91 in July when we used air conditioning—it's been a hot summer for this area. The construction, along with high efficiency furnace, water heater and air conditioning, seems to be doing its job. Of course, with just two working people, the load is a lot less than a typical family!

In short, the home has lived up to all expectations. My message is that energy efficiency does not require exotic techniques. However, if the price of propane goes up significantly, I'll consider installing an "exotic" geothermal heat pump system, but right now the cost/benefit equation doesn't balance.

...and a Look Toward 2008

We are in the final stages of planning our coverage for next year. As always, it is an interesting but frustrating exercise. It is interesting for the techniques and technologies that are approaching reality, requiring practical articles and product information for engineers who are creating new designs for the marketplace. And the process is frustrating when trying to guess—up to 15 months in advance—which emerging concepts will reach that same point sometime during next year. In any case, we promise to put the best information we can find into each issue of 2008!

From September 2007 *High Frequency Electronics*