

HIGH FREQUENCY

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EDITORIAL

Observations and Predictions at the Start of 2005

Gary Breed
Editorial Director



The New Year has started with higher stock prices and strong exports in several market areas. Retailers had an acceptably good holiday shopping season, and reports of capital expenditures for manufacturing show a rebound from the malaise of the past four years. On the minus side, the weak dollar is making imports (such as oil) more expensive, the government is running a record deficit, and the situation in Iraq continues to test US military resources and public patience. Barring unforeseen surprises, it looks like the balance is on the positive side, raising everyone's hopes for a successful 2005.

Predictions are risky, but I'll make a few anyway! Here are some of the areas in high frequency technology that I believe will grow this year:

RFID—Radio Frequency Identification (RFID) has been in the news, after announcements by companies like Wal-Mart that they plan to adopt the technology in a big way. My reason for optimism is not a result of the headlines. Quite simply, I think all the pieces have come together for RFID: investment by equipment manufacturers and user companies, engineering solutions to cost and performance issues and—most important—wide acceptance of wireless technology in general.

Wireless networks—Several cities have jumped on the 802.11 bandwagon, supporting wireless networking as a business development tool. Recent developments in peer-to-peer networks, integrated with the necessary "hot spot" infrastructure, make it possible to have inexpensive wireless access available over a wide area such as an entire downtown, with extensions to key business centers like airports, shopping developments and convention centers.

Short-range wireless—The market will see the first UWB products sometime this year, the integration of Bluetooth into consumer wireless devices is ready for a big jump, and ZigBee looks like it will finally get started. Proprietary Part 15 devices should continue to be significant part of the short-range communications and control device market, as well.

Broadcasting—The combination of Digital Television, Digital Audio Broadcasting and Satellite Radio is finally reaching critical mass, taking them from expensive toys for "early adopters" to the price-conscious consumer market. These advances in radio and TV are overdue, being some-

what late in their response to cable, satellite and recorded media.

Wireless phones—This is well down my list because its growth is dampened by extreme price pressure. A relatively small number of companies are able to crank out parts in the quantities and at the prices required to be competitive. (And those companies are very impressive in the way they do it!)

Base stations—This is a market with higher performance requirements than handsets, but the numbers of units are modest. Once again, a relatively limited number of companies will be able to generate good profits from this market.

Military systems—This is always a good market for those that get the contracts. It is also still an insider's game, which keeps many companies out of play. For those companies that have the know-how, military business can help support development of products aimed at larger commercial and consumer markets.

Some Things I Find Puzzling

I remain completely baffled by the consumer marketplace. For example, the convenience of anytime, anywhere communications is obvious, so it is no surprise that wireless phones have become nearly universal. But, why do consumers put up with such poor voice quality and poor service?

The same applies to television: HDTV delivers such a great picture that I can't understand why it isn't growing faster. It should be the hottest entertainment technology since home stereo systems! I just don't understand why it's acceptable to watch your favorite sitcom on a 19-inch screen with ghosting and noise when the same program could be seen with theater size and quality instead.

Next, everyone will get a picture-capable wireless phone, because

that's the model being provided free with a 1- or 2-year contract. The same users that tolerate poor voice quality are also likely to accept small screens and poor picture quality, therefore, picture phones will become a success!

Finally, there is way too much talk about voice-over-Internet (VoIP). Sure, it's a logical step in the "all communications in one pipe" convergence scenario, but will consumers accept the latency (time delay)? I know it would drive me nuts (digital cell phones are bad enough), but then I'm no typical consumer—which, I suppose, is why I remain puzzled!