

Family of Tunable Components Uses New Ferroelectric Technology

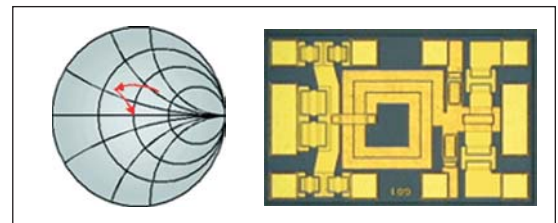
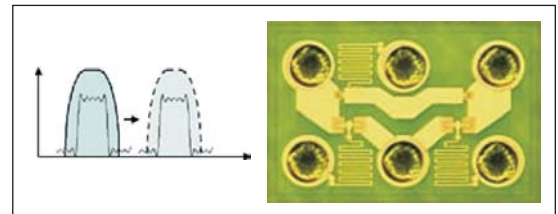
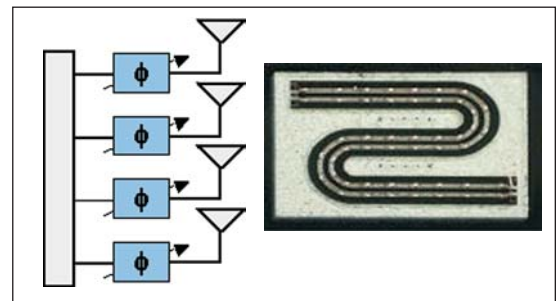
Ferroelectric technology enables low cost voltage-tunable circuits with minimal power consumption, fabricated using high volume thin-film techniques

In the high frequency industry, tunable circuits have been considered expensive, requiring manual adjustment. However, the primary alternatives—untuned or broadband circuits—may

not have optimum performance. New ferroelectric technology from Agile Materials and Technologies, Inc. promises to lower the cost of tunable circuits, making it possible to optimize performance with additional savings in board space and power consumption.

The technology inside the company's products uses Barium Strontium Titanate (BST), a material that changes dielectric constant in response to the voltage potential. Capacitors fabricated with this process have a max/min capacitance ratio of 3:1 or more. Developed under the DARPA Frequency Agile Materials (FAME) program, the technology has been implemented by Agile Materials using a thin-film fabrication process.

Initial product offerings include phase shifters, tunable filters, and tunable matching networks. The phase shifters are available for L- through Ka-bands (1 to 40+ GHz) and target applications in phased array antenna systems and amplifier linearization schemes. Filters are implemented with tunable networks for ceramic filters and diplexers. Tunable matching networks are used in dynamic or adaptive antenna or amplifier matching. Custom tunable circuits are also offered for these and other applications such as voltage-controlled oscillators. The cost is much lower than comparable circuits implemented as GaAs MMICs or using MEMS technology.



Agile Materials' first products include phase shifters (top), filters (center) and matching networks (bottom).

The company has been shipping phase shifters since January 2003 and is capable of high volume manufacturing. Full scale device production will be underway by the first quarter of 2004.

Agile Materials and Technologies, Inc.

Tel: 805-968-5159

Fax: 805-968-3279

www.agilematerials.com

HFELink 301