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Convergence Industry Newsletter

MEMSCAP ROLLS OUT MEMS-BASED MILLIMETER WAVE FILTERS

First MEMS for LMDS Enable Major Size and Cost Reductions

SAN JOSE, Calif., and GRENOBLE, France, February 25, 2002 - MEMSCAP (Euronext: MEMS), an innovative provider of micro-electromechanical systems (MEMS), today introduced the first commercially available MEMS-based microwave filter technology.

The first application of this technology is for the design of filters used in Local Multipoint Distribution Services (LMDS). Deployment of the technology within such fixed wireless applications is expected to dramatically reduce size and weight of customer premise equipment through MEMS miniaturization, and to cut costs by enabling circuit board-mountable devices.

The new filters offer an unprecedented level of integration at the transceiver level while maintaining system performance requirements. Until now, such equipment required manual assembly of large waveguides, requiring costly "touch-labor" for manually tuning the pass band. The MEMS-based filters cut the cost of LMDS systems by using silicon substrates and suspended coplanar-to-microstrip structures, eliminating the large waveguides and additional labor.

"By using MEMS technology, MEMSCAP has the potential to dramatically improve LMDS filter capabilities," said Doug Lockie, executive vice president and founder of Endwave Corporation, a Sunnyvale, Calif.-based supplier of millimeter wave transceivers. "MEMS technology is an attractive solution to further the integration of LMDS transceivers, reduce overall cost and accelerate the field deployment of LMDS equipment."

"Equipment manufacturers must select a roadmap offering a migration path toward

a single-chip RF solution, or they risk being locked into a dead-end architecture," said Didier Lacroix, Vice-President and General Manager, MEMSCAP Wireless Business Unit. "MEMSCAP's filter technology takes wireless engineering one step closer to this long-sought goal. LMDS is the first natural implementation for the technology. We see great potential for many applications based on the reduced cost, size, and weight of MEMS filters."

The MEMSCAP planar filter designs can cover a wide range of applications such as LMDS, automotive radar and space-borne applications, all of which fall within the 18-to-90 GHz range. The LMDS filters are capacitively end-coupled resonators on a suspended dielectric membrane. The edge-coupled section of the microstrip line is used as a transformer coupling to the filter, setting the external quality factor.

The filter process includes high-resistivity silicon substrates, gold electroplating, etching on the backside of the wafer under the resonator, and suspension of a dielectric membrane. Shielding cavities are used to increase the unloaded quality factor. Hybrid or SMT packaging is provided for easy board-level assembly or direct integration.

Availability and pricing

Filter samples are available now from MEMSCAP. Production is available at MEMSCAP facilities or at MEMSCAP technology partner sites. MEMS filters are the lowest cost solutions based on performance offered. Final pricing is based on customer-specific requirements and quantity commitments. Technology licensing is also available to parties interested in designing and manufacturing MEMS-based filters.

