STATS Introduces Silicon Based System-in-Package Solution

May 28 2004

ST Assembly Test Services Ltd (STATS) developed a new technology, called chip scale module package (CSMP), which involves the fabrication of passive devices such as resistors, capacitors, inductors, filters, baluns and interconnects directly onto a silicon substrate.

CSMP is an advanced system-in-package approach which features a unique modular architecture to integrate mixed IC technologies and a wide variety of passives directly onto a silicon substrate. CSMP enables analog and digital functions to be independently optimized and combined for a distinct performance and cost advantage over system-on-chip implementations. The result is a high-performance system level solution which provides a significant reduction in die size, weight, number of interconnections, and system board space requirements.

STATS will offer the CSMP technology as a full turnkey service, providing fully characterized design libraries of resistors, capacitors, inductors, filters, and baluns. The design library will include electrical models that enable designers to simulate CSMP circuits in their chip design tools to ensure first pass success in the customer's applications.

The electrical models can be delivered as touchstone files for engineers using linear frequency-domain simulators or equivalent electrical models for non-linear and time-domain simulators. Initial parts libraries cover the dc-6GHz frequencies, with filters and baluns designed for the 2.45 and 5.6GHz 802.11 bands, addressing WLAN, cellular handset, Bluetooth, and other wireless markets.

The CSMP platform provides customers with additional external interconnect flexibility, offering both wire bond and flip chip options. Although CSMP is generally customized, STATS has qualified two package versions: CSMP-stPBGA, which is wire bonded onto a small thin plastic ball grid array (stPBGA) platform, and a flip chip solution mounted onto a land grid array (LGA) platform. Other package family extensions such as quad leadless package (also referred to in the industry as flat-pack, no lead) and quad flat pack (QFP) are currently planned.