TI Lays Out Path to 5-Cent Tag

Texas Instruments, one of the world’s largest providers of RFID technology, says it is working with its label partners to develop a new production process that will enable partners to mass-assemble low-cost RFID tags made with straps—microchips mounted on pads that can be attached to antennas—provided by

TI. This technology, the company says, will enable its partners to produce tags for as little as 5 cents in very high volumes.

Tony Sabetti

TI has been working with EPCglobal, the nonprofit set up to commercialize Electronic Product Code technology, on a second-generation EPC standard. The company says it will not produce EPC chips or tags based on the current EPC Class 0 and Class 1 standards, but it has been working on microchips based on drafts of the Gen 2 standard since November 2003.

Tony Sabetti, global business manager for Texas Instruments RFID Systems, says that if the Gen 2 standard is ratified this month, as planned, TI will be able to provide samples of a chip based on the standard to its partners by the second quarter of next year. It expects to begin volume production of the chips in the third quarter. Sabetti says he envisions demand ramping up to the billions of units in 2006 and that TI will have the capacity to meet demand.

TI has traditionally supplied RFID inlays—a chip connected to an antenna mounted on a flexible substrate—to label converters that insert the inlay between a paper label and an adhesive layer to create a finished RFID label. Sabetti says the cost of creating the inlay and converting it into a label is too high to make it possible to create a 5-cent tag this way, so

the company is working with label partners on an alternative production process.

TI believes that the only way to get to the price point that end users are demanding is to print an RFID antenna, using conductive ink, directly onto the back side of a label and then place a strap onto the antenna. TI plans to use existing high-speed pick-and-place technology to mount microchips on metal pads to create a strap that can be attached to the antenna with conductive glue. An adhesive backing would then be applied using conventional label-making technology to create the finished label.

TI is working with unnamed label partners to develop a device that could attach the straps to the antennas at 600 feet per minute, the rate at which most label-making equipment operates. Sabetti says the device would be smaller than a shoebox and could be retrofitted on some label-making machines.

“We’re working with label providers and the companies that supply label-making equipment to them,” Sabetti says. “We will begin ramping up production of straps with the Gen 2 chip in 2006, as soon as the demand for high volumes materializes.”

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