MEMS Automotive Sensors to Recover in 2010 after Losses

Following its toughest year in recent memory, Microelectromechanical (MEMS) automotive sensors will rebound sharply in 2010, but continued high sales might lead to an overheated market later this year that could push the industry back into depression, according to new research from iSuppli Corp.

Global shipments of automotive MEMS sensors are projected to reach 591.2 million units in 2010, up a resounding 17.8 percent from 502.0 million in 2009 during what was a roller-coaster year for MEMS sensors. While early 2009 saw orders to sensor companies all but dry up from the ensuing fallout of the economic recession, shipments picked up rapidly in the fourth quarter, exceeding even the high point reached in 2007 — making for a wild, bumpy ride last year. However, the newly strengthened market in 2010 marks the beginning of an upturn that will continue until at least the end of the forecast period in 2014, iSuppli data indicate.

The revitalized automotive MEMS market is exemplified by the exceptionally strong performance of MEMS pressure sensors, which are used in key applications to measure tire pressure and engine performance. According to reports from at least half of the sensor supply industry, shipments are running at three times the historic average, bolstered by a strong production pickup in passenger vehicles coupled with inventory replenishment. About half of the year’s requirement for MEMS pressure sensors has been satisfied in the first four months alone of 2010, iSuppli estimates, with major Tier 2 companies now reporting inability to make and ship the sensors quickly enough, and with Tier 1’s indicating a shortage of parts in many areas of the supply chain.

As a result of these developments, MEMS suppliers are busy exploiting whatever advantage they enjoy at the moment, even though a healthy skepticism abounds on prospects facing the industry down the road and especially in 2011, iSuppli believes. And should sales continue at this level—with indicators so far not showing signs of the market slowing down—a potential overheating could ensue, raising the specter of a possible second slump later this year following the decline of 2009.

Among regions, North America will account for the largest share in the consumption of MEMS, making up 40 percent of the total in 2010. Europe is next, with about one-third share. China and Japan also show up strongly, each counted as a separate market of consumption. A fourth area—an agglomeration known as the “Rest of the World” (ROW) that includes South Korea, Russia and Latin America—is roughly on par with Japan but scores lower than China.

In the sensor supply chain, vertically integrated suppliers like Robert Bosch GmbH and Denso Corp. continued to dominate in 2009, pulling in $355 million and $203 million, respectively. Other major revenue earners included Freescale

Semiconductor Inc., the foremost independent MEMS sensors supplier, with $139 million; Sensata Technologies, with $115 million; Analog Devices Inc (ADI)., with $95 million; and Panasonic Corp., with $85 million.

Both ADI and Panasonic gained market share with gyroscopes, thanks to their profitable contracts—with Continental AG and TRW Inc. in the case of ADI; and with Autoliv for the Ford Motor Co. in the case of Panasonic.

A number of factors will drive the growth of MEMS sensors in cars—projected to increase from an average of 8.12 per vehicle in 2009 to more than 11.5 by 2014.

Mandates continue to be the main market shaper, with electronic stability systems to become obligatory for vehicles in the United States by 2012 and in the European Union by 2014. Also to become mandatory in Europe by 2014 are tire pressure monitoring systems (TPMS). Such developments are expected to boost sales overall: ESC mandates will help propel the sales of gyroscopes, accelerometers and high-pressure sensors, while TPMS mandates will spur MEMS pressure sensor shipments close to 137.9 million by 2014, up from just 42.9 million in 2009.