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Sensor Competition, Actuator Recovery Impact Supplier Ranking

Sensor leader Bosch grabs 20% of worldwide sales in 2014 while ST falls from second to fourth place with a 19% drop in dollar volume last year, says new O-S-D Report.

Stiff competition in sensors for high-volume design wins and a recovery in actuator growth shuffled the ranking of suppliers in the \$9.2 billion market for sensors and actuators in 2014, according to IC Insights' new 2015 *O-S-D Report—A Market Analysis and Forecast for Optoelectronics, Sensors/Actuators, and Discretes*. The new *O-S-D Report* says the overall trend in sensors and actuators is for the largest suppliers to keep getting bigger, gaining marketshare because more high-volume applications—such as smartphones and the huge potential of the Internet of Things (IoT)—and automotive systems require well-established track records for quality, long-term reliability, and on-time delivery of semiconductors.

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Sensor leader Robert Bosch in Germany extended its lead in this market with a 16% sales increase in 2014 to nearly \$1.2 billion. The German company became the first sensor maker to reach \$1.0 billion in 2013 when its sales climbed 29%, reflecting continued strong growth in its automotive base and expansion into high-volume consumer and mobile applications. Bosch's marketshare in sensor-only sales grew to 20% in 2014 from 18% in 2013 and 15% in 2012, according to the 10th edition of IC Insights' annual *O-S-D Report*.

Meanwhile, STMicroelectronics saw its sensor/actuator sales volume fall 19% in 2014 to \$630 million, which caused it to drop to fourth place among the market's top suppliers from second in 2013. ST's drop was partly caused by marketshare gains by Bosch and U.S.-based InvenSense, which climbed from 14th in 2013 to ninth in the 2014 sensor/actuator ranking with a 33% increase in sensor sales to \$332 million last year. Bosch and InvenSense sensors—which are made with microelectromechanical systems (MEMS) technology—have knocked ST's MEMS-based sensors from a number of high-volume smartphones, including Apple's newest iPhone handsets.

ST's drop in sensor revenues and modest sales increases in MEMS-based actuators at Texas Instruments (micro-mirror devices for digital projectors and displays) and Hewlett-Packard (mostly inkjet-printer nozzle devices) moved TI and HP up one position in IC Insights' 2014 ranking to second and third place,

respectively (as shown in Figure 1). Infineon remained in fifth place in the sensors/actuator ranking with an 8% sales increase to \$520 million last year. The 2015 *O-S-D Report* provides top 10 rankings of suppliers in sensors/actuators, optoelectronics, and discrete semiconductors in addition to a top 30 O-S-D list of companies, based on combined revenue in optoelectronics, sensors/actuators and discretes.

Top Sensors/Actuators Suppliers

2014 Rank	2013 Rank	Companies	HQ	2014 (\$M)	14/13 % Change
1	1	Bosch	Europe	1,158	16%
2	3	TI	U.S.	720	7%
3	4	HP	U.S.	645	2%
4	2	ST	Europe	630	-19%
5	5	Infineon	Europe	520	8%

Source: IC Insights

Figure 1

The new *O-S-D Report* forecasts worldwide sensor sales to increase 7% in 2015 to reach a record-high \$6.1 billion after growing 5% in 2014 to \$5.7 billion and rising just 3% in 2013. Total actuator sales are expected to increase 7% in 2015 to \$3.7 billion, which will tie the record high set in 2011. Actuator sales fell 10% in 2012 and dropped another 4% in 2013 before recovering in 2014 with a 7% increase to \$3.5 billion. MEMS technology was used in about 34% of the 11.1 billion sensors shipped in 2014 and essentially all of the 999 million actuators sold last year, based on an analysis in the new *O-S-D Report*. Tiny MEMS structures are used in these devices to perform transducer functions (i.e., detecting and measuring changes around sensors for inputs in electronic systems, and initiating physical actions in actuators from electronic signals).

Report Details: *The 2015 O-S-D Report*

In a one-of-a-kind study, IC Insights continues to expand its coverage of the semiconductor industry with detailed analysis of trends and growth rates in the optoelectronics, sensors/actuators, and discretes market segments in its newly revised 360-page *O-S-D Report—A Market Analysis and Forecast for the Optoelectronics, Sensors/Actuators, and Discretes*.

Now in its 10th annual edition, the *2015 O-S-D Report* contains a detailed forecast of sales, unit shipments, and selling prices for more than 30 individual product types and categories through 2019. Also included is a review of technology trends for each of the segments. The *2015 O-S-D Report*, with more than 240 charts and figures, is priced at \$3,290 for an individual-user license and \$6,390 for a multi-user corporate license.

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