

WTC publishes ranking of top MEMS companies

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Munich, Germany. WTC has updated its MEMS market data with a global bottom-up survey of the top 30 MEMS companies. WTC identified and interviewed over 60 major organizations during February and March 2007 regarding their current MEMS revenues, products, applications and views of the major changes in the industry. The results are a combination of publicly available figures and validated estimates based on shipments and average selling prices.

WTC established two rankings:

- **mems30:** Top 30 MEMS manufacturers in terms of 2006 MEMS revenue
- **mems10 foundries:** Top 10 MEMS foundry service providers

“Although other rankings have existed for a couple of years, we did not agree with some of their results,” said Jérémie Bouchaud, head of market research at the Munich-based high-tech consultancy, WTC. “In our view worthy companies were missing like FLIR, the market leader for microbolometers typically used in industrial, security and emerging automotive applications, and MSI, the US manufacturer of pressure sensors and piezoelectric accelerometers. In addition, the MEMS turnover of companies like Avago Technologies has also been largely underestimated.”

Major findings from the mems30 ranking:

With its DLP chips Texas Instruments is still the number one MEMS company worldwide and established a new record in 2006 with turnover of \$905 million. Following a 8% drop in 2005, DLP revenue was up 15% last year. The company’s front projector business remains the main revenue driver. However, WTC expects that its TV business will continue to suffer from LCD and plasma competition.

Inkjet print heads still contribute greatly to overall MEMS revenues, with five companies in the top 10: HP, Canon, Lexmark and Seiko with their own print head production and STMicroelectronics as a major foundry partner for HP.

The automotive sector is the next major revenue source. Bosch leads with an overall 4th position with sales of \$374 million, followed by nine further companies jostling for position between the 9th place Freescale with \$200 million and 16th in the list Honeywell with \$122 million. Both gyro and accelerometer sensors for vehicle dynamics (ESP) applications and pressure sensors for TPMS were major stimulants for automotive MEMS markets in 2006.

The performance of some additional companies also worthy of comment:

- Avago climbs to rank 8 with \$255 million and consolidates its clear leadership in the FBAR filter business. The company shipped 220 million FBAR products last year.
- Formfactor, a manufacturer of MEMS-based wafer probes cards, exploded onto the market just 4 years ago and is now lies in 20th place, having grown its revenues 55% in 2006.
- Colibrys is the only company that counts foundry services as part of its revenue, and makes it into the top 30 in 2006.

WTC analyses the development of the foundry business

The revenue from MEMS contract manufacturing from the **mems10 foundries** reached \$131 million in 2006. This business expanded by 30% last year.

IMT overtook APM as the leading MEMS foundry with an impressive jump from \$13 million to \$21 million based on contract manufacturing of infrared sensors, MOEMS and DC switch arrays for telecom

applications. Silex enjoyed the most aggressive - doubling its revenues to \$13 million in 2006, largely from sales into life sciences and telecom applications.

The **mems10 foundries** ranking counts a homogeneous group of contract manufacturing companies that specialize or perform most of their foundry business in MEMS.

One should also mention larger semiconductor companies like STMicroelectronics and Sony. In contrast to the mems10 foundries which serve from 15 to 60 customers, these companies' MEMS foundry activity is usually focused on a key customer. STMicroelectronics has a strategic relationship with HP for the production of print-head wafers, while Sony Semiconductor Kyushu Corp (SCK) is the prime MEMS wafer supplier for Knowles acoustics. **Although MEMS is a very small part of the activity, these players actually dominate the MEMS foundry business in revenue terms.** We estimate that the MEMS foundry revenues from STMicroelectronics and SCK to be around \$240 M and \$35M, respectively.

This ranking is one of the new series of WTC Market Workshops, entitled "MEMS industry: status trends and strategies". For more information: www.wtc-consult.de/workshops

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