Yamaha aims to expand this segment and achieve differentiation from competitors by developing new families of devices that emphasize the strengths of Yamaha as “the sound professional.”

Business outline

This segment includes the semiconductor business operated by the Yamaha Semiconductor Division and its manufacturing subsidiary Yamaha Kagoshima Semiconductor Inc., with the main products being LSI sound chips for mobile phones and sound-source ICs used in amusement equipment. It also includes high-performance copper and nickel alloys and related processed parts, which are manufactured and sold by Yamaha Metanix Corporation.

In view of the long-term decline in demand for leadframe materials, which are the principal product of Yamaha Metanix, Yamaha has explored various ways of stabilizing the company’s profitability and of further developing the electronic metal products business. However, Yamaha reached the conclusion that developing new products and strengthening the competitiveness of Yamaha Metanix would be difficult while it remained independent. On March 20, 2007, the Yamaha Board of Directors approved a decision to sell 90% of the issued shares of Yamaha Metanix to Dowa Metaltech Co., Ltd., along with the entire equity stake of Yamaha Corporation in affiliate Yamaha-Olin Metal Co., Ltd. (accounting for 50% of the latter firm’s total issued shares).

Performance overview

In fiscal 2007, the LSI sound chips for mobile phones that are the mainstay of the electronic equipment business recorded sharp drops in sales volumes and unit prices, notably in markets outside Japan. In the electronic metal products business, despite flat sales volumes amid a sluggish market, sales rose compared with fiscal 2006 as higher materials costs were accordingly reflected in product prices. Segment sales edged down to ¥54.8 billion as a result. Operating income fell 60.9% year on year to ¥3.1 billion, reflecting lower sales of semiconductors and declining profit margins.

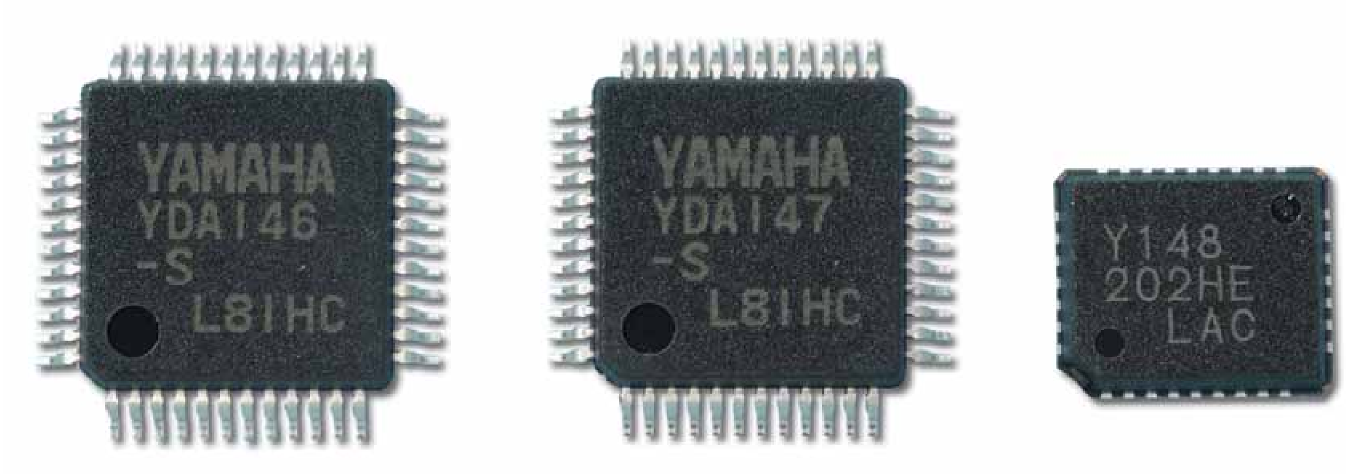
Market trends and business strategy

Mobile phones are the principal market for LSI sound chips. The global market for mobile phones expanded by around 25% compared to fiscal 2006. More than 10% growth in demand is also forecast in calendar 2007. However, market conditions remain harsh in the business for LSI sound chips for mobile phones. In high-growth emerging markets such as India, Russia, Brazil and China, the number of phones containing inexpensive sound-generation software rather than LSI sound chips has been increasing.

Yamaha anticipates the performance of the business for LSI sound chips for mobile phones to decline further going forward due to the ongoing shift to sound-generation software, unit price erosion and other factors. Yamaha is focusing on trying to put a floor under sales by making proposals to mobile carriers and phone manufacturers based on devices that deliver superior sound quality combined with non-sound-source devices such as codecs (Compression/DECompression) and silicon microphones.

Silicon microphone for use in portable devices

Three-axis geomagnetic sensor IC



Digital IC amplifiers for flat-panel TV

In contrast, demand continues to increase for digital amplifiers because these devices produce little heat and do not consume much power. They offer one potential solution for extending battery life in portable equipment that contain small speakers, such as mobile phones and notebook computers. Another area of promise is high-definition large-screen flat-panel TVs, where higher quality sound reproduction is in increasing demand in the Japanese market since the start of terrestrial digital broadcasting. Yamaha has already begun incorporating the latest generation LSI digital amplifiers into related applications such as flat-panel TVs, and demand is forecast to rise in the near future.

Creating markets for new devices

Yamaha plans to intensify efforts to develop high-performance devices for new growth market segments as the "Smart AnaHyM™ Strategy." This involves upgrading basic functions by strengthening analog (Ana), hybrid (Hy), and MEMS (M) (Micro Electro Mechanical Systems) technologies while seeking to add greater value to devices through Yamaha's competitive advantages in the "Smart" technology field, which include signal processing.

The main product categories in this field include digital amplifiers, silicon microphones, geomagnetic sensors and CMOS (Complementary Metal Oxide Semiconductor) image sensors. Of these, digital amplifiers are the most advanced in terms of development of commercial product lines. Outside the mobile phone sector, Yamaha expects these products to find broad application in sectors such as flat-panel TVs and amusement equipment. Since 2001, Yamaha has introduced various digital amplifier IC products offering high sound quality and low power consumption for markets mainly for AV equipment. In April 2007, Yamaha began shipping samples of a new range of digital amplifier ICs developed for flat-panel TVs of varying screen sizes. Besides striving to continually strengthen the competitiveness of digital amplifiers, Yamaha provides customers the opportunity to select a combination of devices to boost differentiation with competitors.

Development efforts have also centered on silicon microphones. In March 2007, Yamaha began shipping samples to mobile phone manufacturers, who are the major potential users for such products. Yamaha has developed a broad lineup of sound-related LSI products such as mobile audio LSIs, and also owns advanced signal processing technologies for both analog and digital sound. Yamaha aims to leverage such assets to supply high-value-added microphone devices offering specific capabilities such as noise suppression and directional control to meet demand.

In the automobile industry, the use of advanced electronics to create more secure, convenient and comfortable driving experiences is expected to boost demand for products such as graphics LSIs used in onboard LCD display equipment. In this sector, Yamaha is advancing proposals for LSI products with drawing functionality as well as chips for use in rear-view monitors that are designed to enhance rearward visibility.

Under the medium-term business plan "YGP2010," the segment targets for fiscal 2010 are ¥45 billion in sales and ¥5 billion in operating income. Yamaha expects to generate growth and boost earnings by promoting the growth of silicon microphones, digital amplifiers and LSI non-sound chips for mobile phones.

Aiming to drive future business development, a capital investment program enabling miniaturization to 0.18μ (micron) processes was completed at the Kagoshima plant during the fiscal year and production is already underway. Besides incorporating 0.18μ capability into product planning to reinforce in-house manufacturing, Yamaha aims to build an efficient production system by utilizing external foundries for any devices that require advanced manufacturing processes. Planned total capital expenditure over the three years to March 2010 is ¥9 billion.