



## Digital Electronics Trends in '06 and Prospects for '07



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Exports of Korean digital electronics in 2006 are expected to reach US\$115.3 billion, up 12.2% year-on-year, thanks to the good performance of electronic parts. The growth rates of some parts, display, etc., in particular, are becoming remarkable. In contrary, the number of items showing growth declines also is increasing on a gradual basis.

Korea's imports of digital electronics products in 2006 are likely to record US\$61.6 billion, a growth of 8.9% from the previous year, with an increasing inflow into the country of electronics products produced at overseas local plants.

Due to increased overseas production of electronic parts, such as displays and semiconductors, the nation's total production is expected to rise 6.3% year-on-year, amounting to 220 trillion won.

Even amid contracted markets for high-priced, durable electronics products market caused by household debts and persistent employment difficulties, domestic demand is expected to rise 4.0% and reach 157 trillion won with steadily increasing demand for electronic parts to manufacture complete export products.

Korea's exports in 2007 are projected at US\$133.1 billion, up 15.5% from this year, owing to expanded overseas demand for electronic parts despite minus growth in the fields of complete products, such as information-communication devices, industrial equipment and digital home appliances.

Based on price competitiveness, the nation's imports in 2007 are projected to soar 9.5% year-on-year to US\$67.5 billion, with increases in the import of electrical/electronic home appliances and also a double-digit growth expected in the parts and materials for production of complete products.

In 2007, production is expected to reach 231 trillion won, up 4.8%, to be caused by a low growth in the domestic demand market, notwithstanding a double-digit growth in the export sector. Domestic demand is projected at 162 trillion won, up 3.5%, affected by increased imports of complete products manufactured abroad, expansion of overseas outsourcing for low- and medium-priced parts, import price lowering effects following declines in won-dollar exchange rates.

### Prospects for Digital Electronics Industry Market in 2007

Division	2006		2007	
	Estimated	Changes (%)	Projected	Changes (%)
Exports (US\$1 million)	115,257	12.2	133,096	15.5
Domestic Demand (1 billion won)	156,573	4.0	162,085	3.5
Production (1 billion won)	220,495	6.3	230,976	4.8
Imports (US\$100 million)	61,611	8.9	67,479	9.5

Sources: KEA (production, domestic demand), KCS (import, exports)

### Prospects for Info-Comm. and Industrial Electronics Industry Market in 2007

Division	2006		2007	
	Estimated	Changes (%)	Projected	Changes (%)
Exports (US\$1 million)	45,199	-4.2	44,958	-0.5
Domestic Demand (1 billion won)	49,449	2.4	51,301	3.7
Production (1 billion won)	78,446	-2.7	76,119	-3.0
Imports (US\$100 million)	22,121	7.0	23,759	7.4

Sources: KEA (production, domestic demand), KCS (import, exports)

### Prospects for Digital Electronics Market in 2007

Division	2006		2007	
	Estimated	Changes (%)	Projected	Changes (%)
Exports (US\$1 million)	14,847	1.3	14,818	-0.2
Domestic Demand (1 billion won)	18,775	2.1	19,254	2.5
Production (1 billion won)	29,964	-4.8	28,761	-4.0
Imports (US\$100 million)	4,370	4.1	4,842	10.8

Sources: KEA (production, domestic demand), KCS (import, exports)

### Prospects for Electronic Parts Market in 2007

Division	2006		2007	
	Estimated	Changes (%)	Projected	Changes (%)
Exports (US\$1 million)	55.211	35.1	73.320	32.8
Domestic Demand (1 billion won)	88.349	5.3	91.530	3.6
Production (1 billion won)	112.085	15.0	126.096	12.5
Imports (US\$100 million)	35.120	10.7	38.878	10.7

Sources: KEA (production, domestic demand), KCS (import, exports)

## Semiconductor Industry Trends and Prospects for 2007



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The semiconductor market in 2007 is projected to grow 13%, a bit higher than this year, to reach US\$282.9 billion. In 2007, the market is expected to experience an adjustment in the first half and to hit bottom in the middle part of the year. Projects by field are as follows:

Despite double-digit sales growth in the number of units, the PC market is unlikely to lead the growth of semiconductors in 2007. The 'Vista Effect' may emerge first in high-priced PCs and will appear next in PCs priced less than US\$600, which account for 30~40% of desktops, starting in the second half.

The mobile phone semiconductor market is expected to achieve single-digit growth in terms of amount. However, the growth may occur differently by market sector, with multimedia being a primary contributor to market growth. Continued from 2006, sales growth in the number of units is predicted to center on value-added phones. Due to intensifying competition, however, it will be difficult to realize semiconductor growth in this sector. Meanwhile, multimedia is expected to strengthen further in the high-priced smart phone market owing to the rapid expansion of mobile content.

In 2007, the consumer semiconductor market is expected to maintain single-digit growth in amount. This semiconductor sector is likely to slow due to saturation of some digital home appliances, but the momentum for growth of semiconductors will swing to digital TVs on a gradual basis.

The MP3 player market may enter a saturation state in terms of sales units starting in 2007. With video functions, etc. being strengthened, the MP3 market may collide with the PMP market, which also will compete with the mobile phone market with reinforced communication functions. The future of convergence is hard to predict.

The memory market outlook for 2007 is positive. If demand is driven by PCs and front-runner firms establish new lines, double-digit growth will likely continue from this year.

New semiconductor customers are expected to emerge in China, India, Eastern Europe, etc., leading the world economy, and competition and technology initiatives will orient toward customers in these regions.

In accordance with 12" lines, IDMs (Integrated Device Manufacturers) are expected to take greater interest in the foundry business for utilization of existing production capacity. As for investment in new technologies and facilities, manufacturers will pursue productivity enhancements and target more than 65ns.

## Abundant Fruit from 'AEES 2006'



The third Asia Electronics Exhibition in Shanghai (AEES 2006) closed on November 26 at the Shanghai New International Expo Center, bringing successful results to Korea, enhancing the country's position as a strong IT nation and solidifying the advance of Korean-made electronic products into the Chinese market all the more.

'AEES 2006' was jointly organized by five leading electronics exhibition organizers in Asia from Korea, China, Japan, Taiwan and Hong Kong, including Korea Electronics Association (KEA). KEA participated in the

exhibition after organization of the largest scale national pavilion among the five nations, with 122 booths of 70 companies. A total of about 76,000 persons visited the Korean booths while Korean firms enjoyed US\$1.07 billion in export talks and US\$215 million worth of export contracts.

The Korean-made products exhibited at the show included 52" full HDTV, black carbon-ultra mobile phone and 40-nano/32-giga NAND flash memory of Samsung Electronics, and power supplies, capacitors, high-resolution monitors, PMP, UV sensors, etc. of excellent SMEs, such as Dong Yang E&P, Samwha Capacitor and Ellim Electronics.

Meanwhile, KEA plans to co-organize the fourth 'AEES 2007' on a larger scale than this year with expansion of substantial support to help domestic firms advance more efficiently into the Chinese market.

## Seminar on Revised Korean and U.S. Patent Laws



On November 14, KEA held a seminar at aT Center in Yangjae-dong, Seoul, on the Korean and U.S. patent laws to be revised in 2007. KEA hosted the seminar jointly with the Korea Patent Attorneys Association (KPAA).

The event was designed to provide domestic enterprises with information on major revisions of the patent laws in

the two countries and to suggest response measures after analysis of the possible impacts on domestic enterprises.

At the venue, Shin Jin-Kyun, a team leader at the Korea Intellectual Property Office (KIPO), introduced key content of the revised Korean Patent Act, to take into effect in 2007. Former chief judge Bruce H. Stoner of the Board of Patent Appeals and Interferences in the U.S. gave a presentation on the revised U.S. Patent Law under the theme 'A Great Change in the U.S. Patent System.'

Patent attorney Lee Taek-Soo of Greenblum & Bernstein (G&B) Korea also explained the impacts of the revised patent laws on domestic enterprises and response measures.

## 'Embedded Training' for College Graduates

With implementation of an embedded training program for graduates from colleges of science & technology, KEA is nurturing and supplying specialized manpower to the industrial community.

The program was planned by the association in an effort to

resolve the quantitative and qualitative mismatch in supply and demand of industrial technology manpower between industrial fields and the science & technology education system with cultivation and supply of custom-tailored experts.

## Korean 'Detergent-Free Washing M/C' to Become IEC Standard



At the plenary meeting of IEC/TC 61 (General Safety Standards for Household Electrical Equipment), held in October on Jeju Island, 23 countries supported the Korea-suggested agenda on 'Detergent-Free Washing Machine' as a 'FDIS (Final Draft International Standard)' document. Therefore, only final approval procedure to confirm it as an international standard remains, according to KATS.

Unlike existing washing machines that use synthetic detergents, the new technology, which will be adopted as IEC standard 60335-2-108 (Specific Requirements for 'Detergent Free' Washing Machines), attaches an electrolyser to the washing machine, achieves electrolysis by using sodium carbonate (electrolyte) in the device and produces alkaline ion water that can clean clothes very well. In 2002, Kyungwon Enterprise self-developed this new technology and commercialized

the detergent free washing machine.

If the Korea-developed technology is officially adopted as an IEC standard in the second half of 2007, the detergent free washing machine is projected to emerge as one of the nation's promising export items to Europe, etc. where environmental restrictions are tightening, together with refrigerators, air-conditioners, and traditional washing machines

## Robot-Specific Safety Rules Adopted as Nat'l Standards

Korea adopted the three principles of robot-specific safety action insisted on by SF novelist Issac Asimov in his 1950s book 'iRobot' as national standards for the first time in the world.

Asimov's three 'Laws of Robotics' are: first, a robot may not injure a human being; second, a robot must obey the orders given to it by a human being; and third, a robot must protect its own existence.

After development of the safety rules for service robots and guidelines for their design and production to secure the safety of future human-robot coexistence

in society, KATS enacted them as Korean Industrial Standards (KS) and made the standards effective as of December 1 this year.

The safety standards for service robots specify mechanical safety (collision, getting entangled, etc.); electrical safety (electric shock, overheating, etc.); and environmental safety (electromagnetic conformity, etc.) and include safety guidelines at the design and production stages to increase the utilization level by robot manufacturers.

The KS standards recently enacted according to Asimov's three laws of

robotics are summarized:

- 1st Principle (Human Protection): collision prevention, elimination of electrical risk factors, including electric shock, in the control system.
- 2nd Principle (Obedience to Orders): ergonomic design that is easy to manipulate, use and repair, realization of convenient user interface, etc.



## Software Process Improvement Education for SMEs

KATS conducted SPICE (Software Process Improvement and Capability dEtermination) education free of charge for domestic small and medium-size software firms November 22~24 at the Korea Computers Cooperative (KOCC).

Under the program, KATS provided practical training in parallel with

education, specific ISO/IEC 15504 (Process Assessment Standard)-applied SPICE practices, etc., so the trainees could learn detailed processes to diagnose problematic areas in software development procedures and to identify solutions for improvement.

Through such free education courses,

KATS plans to proliferate international software process improvement methods and enhance the process maturity of small and medium-size software firms from 'Process Capability Level 1' at present to 'Process Capability Level 2' in the future.