

### **Development of Intelligent Transport Systems (ITS)**

On March 31, 1999, Clarion reached an agreement with Hitachi, Ltd. and Xanavi Informatics Corp. to cooperate in technical development, production and sales of products related to Intelligent Transport Systems (ITS). Xanavi Informatics, in which Nissan Motor Co., Ltd. and Hitachi are both capital participants, develops and markets car navigation systems. Hitachi brings with it strengths in transport infrastructure technology, including Electronic Toll Collection System (ETC) and Vehicle Information and Communication Systems (VICS) which provide information about traffic congestion and other subjects to cars on the road. Promoting more effective development of ITS, which is expected to greatly expand the market, Clarion has chosen to pursue joint development in order bring to bear the strengths of each company.

Japan's ITS market is forecast to grow to about ¥50 trillion (\$41.5 billion) in 20 years. The three-way tie-up is intended to minimize development costs and achieve a market share of about 15% in 2015.

### **Launch of the AutoPC**

In January 1998, Clarion gained wide attention when it announced the Auto PC. The new product went on sale in the U.S. as a retail product in January 1999. Based on Windows CE (Microsoft Corp.), it serves as a car audio system, a computer, and a navigation system, and offers voice recognition and wireless communication. To market it in OEM and other markets in the future, we transferred the product's development team from Clarion Corporation of America to Clarion Advanced Technology Corporation (CATC), a new com-

pany established in California in October 1998. We are also moving toward launching the product in Europe, Japan, and other countries in Asia.

### **Development of New Products**

In the car audio field, the shift from cassette tapes to CDs is accelerating, and MDs (Mini Discs), which offer digital recording capability, are gaining popularity. We are filling out our lineup to include a wide range of products, from affordable to hi-end items.

Our navigation systems featuring large screens in 1DIN enclosures, advanced functionality, and high cost performance, have gained popularity, and are winning an increasing share of the retail market. In June 1999, we announced a navigation system which uses DVD-ROM to handle the greatly increased volume of information needed for such advanced technologies as voice guidance. Further, we expect to win a new class of customers with a product developed in cooperation with travel agency Japan Travel Bureau Inc. (JTB) for our DVD navigation systems. The product allows drivers to enjoy guided tours in their own cars, and is the first of its kind in the industry.

In January 1999, we also launched sales of the industry's smallest, lowest-cost CCD color camera for automotive use, which measures just 4x8x6cm. Users of small and mid-size cargo trucks can mount the camera on the back and view the image on a monitor by the driver's seat. The camera features automatic adjustment for backlighting. Demand for the product is expected to be high, as blind spots pose a significant safety problem for truck drivers.

## **Global Expansion**

In its car audio business, Clarion's fundamental policy is to conduct product development, parts procurement, manufacturing, and sales in regions of high demand for our products. Based on this policy, we are building a regional headquarters system which divides the world into four areas, one of which is Japan. We also have established technology bases in each region to ensure that development systems take into account the specific demands of each region.

### ***North America***

In the U.S. market, the Big Three have adopted QS-9000 as the product quality standard to be met by parts makers. Meeting this standard, established by the Big Three by adding their own specifications to those of the ISO9000 international standard, is a requirement for trade with them. Among our group companies, the Precision Device (PD) Business Division, which produces cassette and CD mechanisms, and five factories in the U.S., Mexico, and China have already won certification. The OEM Business Division has also won certification under QS-9000.

### ***Europe***

Clarion established Clarion Hungarikai Kft. in Nagykata, Hungary, as a production base for car audio systems and parts for group companies in Europe. The new company started production in January 1999. Through it, we aim to improve productivity and increase market share in OEM supply to European auto manufacturers.

In the navigation system business, following the launch of retail products in Germany in June 1998 and in Italy at the end of April 1999, we will launch products using the language and maps of each of five European countries, including France and Belgium, from September 1999. As the development of VICS moves ahead in Europe, especially in Germany, we will strengthen our sales activities in Europe.

### ***Asia***

In Malaysia, Clarion (Malaysia) Sdn., Bhd. handles OEM sales to a local auto manufacturer, and plans to supply car audio equipment for its cars destined for export to Europe in 2000. In China, Xiamen Clarion Electrical Enterprise Co., Ltd. (CXEE), established in Xiamen in May 1998, started production in December 1998, contributing to Clarion's expansion of production of precision devices. Our factory in the Philippines is becoming a major production base for our OEM products.

## **Year 2000 Countermeasures for Computers**

We are addressing the year 2000 problem at all domestic and overseas bases, including those of group companies, to ensure that all host computers, manufacturing and warehousing facilities, in-company networks, PCs, clients and suppliers, research and development facilities, and company products are fully prepared. Preparations for the host computers were completed by the end of 1998. Preparations for manufacturing and warehousing facilities, PCs, and research and development facilities will be completed by July 1999, those for in-company networks will be completed by August, and affiliated companies will be fully prepared by September.