Topics

In this section, we review the highlights of Toyota Industries' activities from April to October 2003.

NEW PRODUCTS

Production Start-Up of Two-Way Compressors

Toyota Industries developed jointly with DENSO Corporation ("DENSO") and started production of a two-way compressor with a built-in motor, to be used for air conditioners of hybrid cars. This compressor is driven alternately by an engine during driving and by a built-in motor during engine stop, achieving a balance between fuel efficiency and comfort when the car air-conditioner is turned on. It is installed in Toyota Motor Corporation's ("TMC's") Estima Hybrid, which was re-introduced to the market in July 2003 after a minor change, and Alphard Hybrid, which was launched in the same month.

Two-Way Compressor

Commercialization of Electrically-Driven Car Air-Conditioning Compressors for Hybrid Cars

We also developed jointly with DENSO and started production of an electrically-driven car air-conditioning compressor for hybrid cars. Unlike conventional compressors that are belt-driven by the engine, this compressor is driven by a built-in motor. As a result, the air-conditioner remains on even when the engine is turned off, ensuring both interior comfort and fuel economy for idling stop vehicles such as hybrid cars.

The optimized shape of the scroll and other innovations allow the electrically-driven compressor to improve the compression efficiency of the refrigerant and minimize energy loss for optimum performance. It is installed in the new Prius, which was introduced to the market by TMC in September 2003.

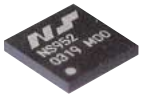
Electrically-Driven Compressor ES18

EXHIBITIONS

Electronics Devices Showcased at CEATEC JAPAN 2003

From October 7 to 11, 2003, CEATEC JAPAN 2003, one of Asia's largest electronics exhibition dedicated to communications, information, and imaging technologies, was held at the Makuhari Messe on the outskirts of Tokyo.

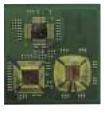
We displayed the following at the show: A white organic light emitting diode ("OLED") back light for LCD panels and an OLED display, both of which take advantage of our proprietary OLED technology; a chipset conforming to the high-speed wireless LAN ("WLAN") standard IEEE802.11g; an ultra-compact, low-cost radio tuner module that combines the main functions of a radio on a single chip utilizing full CMOS RF IC technology, and others.



Radio Tuner

WLAN Access Point

WLAN CF Card Module



WLAN Chipset

Energy-Efficient, Environment-Friendly Technology Displayed at Tokyo Motor Show 2003

We displayed a selection of our advanced auto technologies at the 37th Tokyo Motor Show, held from October 22 to November 5, 2003 at the Makuhari Messe. Under our show theme of "Environmental technologies and key technologies – supporting motor vehicle evolution," we displayed products and technologies designed to bring superior levels of comfort to vehicle occupants, including environmentally sound technologies and electronics.

These included the following: Various types of car air-conditioning compressors, such as an electrically-driven compressor, a two-way compressor with a built-in motor (both of which are installed in hybrid cars) and a CO_2 refrigerant compressor (for fuel-cell hybrid vehicles); a diverse array of electronics parts such as an OLED display, a wireless LAN device, and an ultra-compact radio tuner module; and a variety of parts developed specifically for fuel-cell hybrid vehicles.