THE ARIZONA REPUBLIC
April 7, 2008

BUSINESS online print edition

Chevy, GMC hybrids use Freescale chips

Vehicles' fuel efficiency boosted

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The Arizona Republic
Feb. 24, 2008 08:49 PM

Technology developed at Freescale Semiconductor Corp.'s research and manufacturing facility in Chandler is giving two former land yachts a green makeover.

Microcontrollers, developed and manufactured in Chandler, have helped give rise to the first full-size SUV hybrids.

Freescale chips that control the combustion and electric engines as well as the transmission in the new Chevy Tahoe and GMC Yukon hybrids have produced a 50 percent increase in fuel efficiency over their conventional counterparts.

The hybrids, now arriving at Valley Chevy and GMC dealerships, are efficient for both city and highway and can tow a 6,000-pound cabin cruiser.

While availability is still limited, John Hartley, Internet sales manager at Midway Pontiac GMC in Phoenix, said there is considerable interest in the vehicles.

The increase in fuel efficiency is due to GM's two-mode hybrid transmission that is operated by advanced microcontroller technology developed by Freescale.

Formerly headquartered in Phoenix, now Austin, Texas-based Freescale is the leading supplier of a growing number of microcontrollers found in U.S. cars. Freescale continues to employ about 3,000 people in the Valley.

Kevin Klein, vice president of marketing for Freescale's automotive group, said that a current luxury car can contain over 100 chips that control everything from disc brakes to parking-assistance radar.

"The automotive industry is a very significant part of Freescale's business," said Tony Massimini, an analyst with Semico Research Corp., a Phoenix market research company. "And the hybrid market is becoming very important part of the U.S. car business."

Klein said that automotive chip sales now amount to about a third of Freescale's $5.7 billion in annual revenue.

Based on the GM-Allison hybrid system for city buses, the hybrid technology makes the SUVs equally efficient in city and highway driving conditions.

The technology features two driving modes.

In the first, the vehicle can operate at low speed and with light loads in three ways: electric power only, engine power only or in any combination of engine and electric power.

The second mode is used primarily at highway speeds. In addition to electric assist, the second mode provides full eight-cylinder engine power when conditions demand it, such as when passing other vehicles, pulling a trailer or climbing a steep grade.

A sophisticated control unit developed by Freescale determines which mode the vehicle should open in.

"With the introduction of the world's first full-size hybrid SUVs, GM is pioneering a niche in the automotive market that's in step with today's growing concerns about the environment and global warming," said Paul Grimme, senior vice president and general manager of Freescale's Microcontroller Solutions Group.

"We're proud that Freescale technology is helping make these innovative, fuel-efficient SUVs a reality in the market."

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