

# An Engine & Transmission Control System with New 16-bit Single Chip Microcomputer

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## 1. Abstract

The microcomputer is the most powerful component available at this time for application to highly functional and high-precision electronic control systems in automobiles.

Toyota Motor Corporation recently improved an 8-bit microcomputer and this has now been followed by the development of a new 16-bit microcomputer to permit major expansion of the functions available in such systems. This is a single-chip VLSI which is flexible and sophisticated, quite suitable for real-time control systems in automobiles. It provides large memory, both ROM and RAM, a powerful instruction set appropriate for use in real-time control, high-speed and intelligent input/output (I/O) functions, and higher speed of data communication functions for intercommunication between microcomputers.

This microcomputer has realized the development of a high-speed and high-precision combined control system centered upon engine and transmission control.

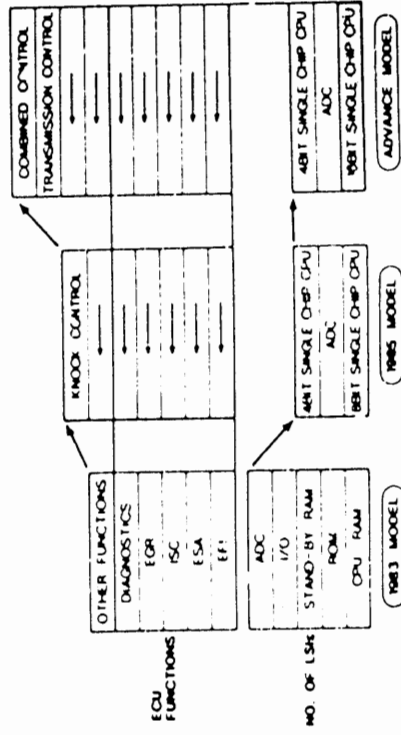


Fig.1 Function Growth of Engine Control

Since that time, there has followed a continuous series of technological developments related to engine control functions, with the purpose of realizing lower emission levels, higher fuel economy and better drivability. A number of new functions have also become necessary for transmission control systems,