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MC68336/376
USER'S MANUAL

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SECTION 1 INTRODUCTION

The MC68336 and the MC68376 are highly-integrated 32-bit microcontrollers, combining high-performance data manipulation capabilities with powerful peripheral subsystems.

MC68300 microcontrollers are built up from standard modules that interface through a common intermodule bus (IMB). Standardization facilitates rapid development of devices tailored for specific applications.

The MC68336 incorporates a 32-bit CPU (CPU32), a system integration module (SIM), a time processor unit (TPU), a configurable timer module (CTM4), a queued serial module (QSM), a 10-bit queued analog-to-digital converter module (QADC), a 3.5-Kbyte TPU emulation RAM module (TPURAM), and a 4-Kbyte standby RAM module (SRAM).

The MC68376 includes all of the aforementioned modules, plus a CAN 2.0B protocol controller module (TouCAN™) and an 8-Kbyte masked ROM (MRM).

The MC68336/376 can either synthesize the system clock signal from a fast reference or use an external clock input directly. Operation with a 4.194 MHz reference frequency is standard. The maximum system clock speed is 20.97 MHz. System hardware and software allow changes in clock rate during operation. Because MCU operation is fully static, register and memory contents are not affected by clock rate changes.

High-density complementary metal-oxide semiconductor (HCMOS) architecture makes the basic power consumption of the MCU low. Power consumption can be minimized by stopping the system clock. The CPU32 instruction set includes a low-power stop (LPSTOP) instruction that efficiently implements this capability.

Documentation for the Modular Microcontroller Family follows the modular construction of the devices in the product line. Each microcontroller has a comprehensive user's manual that provides sufficient information for normal operation of the device. The user's manual is supplemented by module reference manuals that provide detailed information about module operation and applications. Refer to Motorola publication *Advanced Microcontroller Unit (AMCU) Literature* (BR1116/D) for a complete listing of documentation.