Upgrade your features by Toshiba's family concept!

Benefits:

- High-Speed NANO™ Flash by Toshiba.
- 128k byte up to 512k byte embedded Flash
- High-performance for a low price.
- Toshiba supports ARM® Cortex Microcontroller Software Interface Standard (CMSIS).

You can find further information about TOSHIBAs Cortex-M3 product family at:
http://www.toshiba-components.com/microcontroller

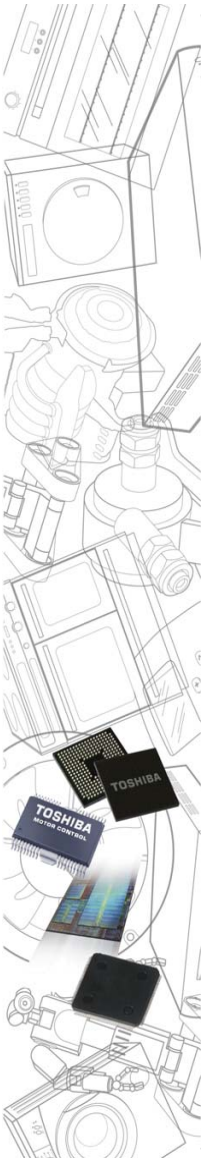
Doc No.: ProductBrieM330:0906(M)

Visit us: http://www.toshiba-components.com

TOSHIBA
Leading Innovation

Microcontroller

TMPM330 family



- **ARM® Cortex™-M3 based 32-bit MCU**
- **128k to 512k byte Flash**
- **High Speed NANO Flash™**
- **32-bit performance for a low price**

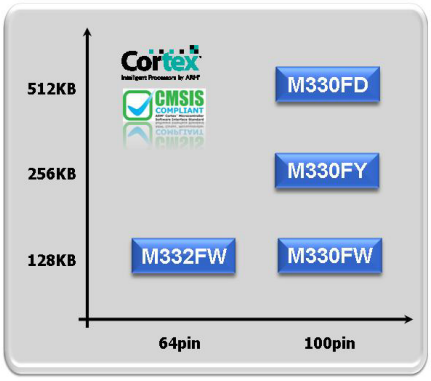
General Purpose Microcontrollers

100 pin 32 bit MCU • 512kbyte Flash • 32k byte RAM • High-Speed Flash • ADC ...

Introduction

The TMPM330 general-purpose microcontroller family with ARM 32-bit CPU for embedded applications has an 12 channel fast 10-bit A/D converter, 10 channel 16-bit timer and several serial interfaces. Toshiba's original low-power consumption flash memory, NANO FLASH™, is used as on-chip ROM to enable high-performance, low power consumption operation with the ARM® Cortex™-M3 core.

Developed for embedded applications by ARM Ltd., the core adopted by Toshiba offers exceptional interrupt handling, high code efficiency and high-speed NANO™ Flash. Therefore, it can achieve 32-bit performance at cost levels equivalent to a 16-bit core. In addition, development tools for this core are available from many vendors.

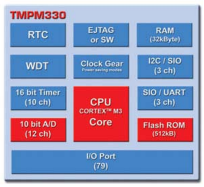


Target Applications:

- Industrial Control
- Measurment Equipment
- Front Panel Control
- Security/Alarm Control
- Home Appliance
- Battery Charger
- Bar Code Reader
- Heating Control
- Building Control
- TV Application
- Factory Automation
- Smart Metering
- Solar Energy Control
- Datalogger
- Card Reader

Features

Cortex-M3 Core



- Operating voltage: Peripheral I/O=2.7~3.6V
- Max. operating freq.: 40MHz (quadruple PLL)
- Internal memory: FLASH : 128KB, 256KB, 512KB
  RAM : 8KB, 16KB, 32KB
- MAC: Executes 32 bit x 32 bit
  -> 32 bit within 1clk cycle.
- Debug circuit: EJTAG or SW (Serial Wire)
- Power saving operation: Clock gear
  (for dividing clock to 1/2, 1/4 or 1/8)
  Standby mode (NORMAL/SLOW/SLEEP/STOP)

Built-in functions

- 10 bit AD converter: 12ch (conversion time 2.0μs)
- 16 bit timer: 10ch (free-running, compare output, PPG output, input capture)
- Serial interface: SIO/UART : 3ch
  I2C/SIO : 3ch
- External interrupt : 8ch

Group Variations

		TMPM330FDFG	TMPM330FYFG	TMPM330FWFG	TMPM332FWUG
FLASH		512KB	256KB	128KB	128KB
RAM		32KB	16KB	8KB	8KB
16 bit Timer	Out	10ch			7ch
	In	Max. 6ch			Max. 4ch
SIO/UART		3ch			2ch
I2C/SIO		3ch			2ch
A/D		12ch			8ch
Ex. Interrupt		8ch			5ch
I/O ports		79			45
Package		LQFP100 14 x 14 mm, 0.5 mm pitch			LQFP64 10 x 10 mm, 0.5 mm pitch