

SPECIFICATION SHEET

MPC500 FAMILY



PROCESSOR ADVANTAGES:

- Up to 4 on-chip processing units
 - Power PC instruction-set architecture, plus up to 3 RISC microengine-based timer systems (TPUs)
- 32-bit RISC CPU with floating point unit
- Up to 1 MB integrated secure Flash
- Up to 50 KB static RAM
- Expansion bus with memory controller includes chip selects
- GNU compiler, diab compiler
- Metrowerks™ tools suite
- RTOS – Nucleus, OSEK, RTXC, eCos
- Five tools vendors support background debug mode

PERIPHERALS:

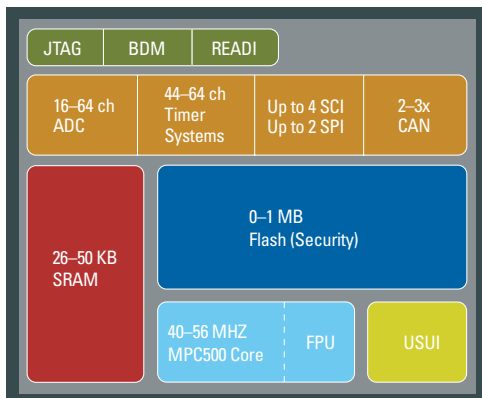
- Up to 40 channels of A to D with internal multiplexing
- Up to 64 A to D with external multiplexing
 - 10 bits at 5 µsec conversion
- Communication connection
 - UART x 2 (up to an additional 16 UARTs using 2 TPUs, or an additional 24 UARTs using 3 TPUs)
 - CAN 2.0B x 3 (Toucan)
 - SPI
- Time Processor Unit (TPU)
 - Built-in complex function selection
 - 16 function codes per set (see list)
 - Easy implementation via HLL
- Data Link Controller Module (DLCM)

APPLICATIONS

- GPS-based equipment
- Medical equipment
- Breath analyzers
- Paperless chart recorders
- Flow meters
- Avionic and nautical instrumentation
- Parking system control
- Automated toll booth systems
- Chromatography
- Money validation machines and vending machines
- Control panels
- ISDN PRI interface control
- Infiniband® switch control
- RF controlled valves
- Stepper motors and AC motors
- Brushed and brushless DC motors
- Programmable logic controllers
- Factory automation equipment
- PID controllers
- Fish finders

TIME PROCESSOR UNIT BUILT-IN FUNCTIONS:

- Programmable time accumulator
- Queued output match
- Table stepper motor
- Frequency measurement
- Universal asynchronous receiver/transmitter (UART)
- Input capture/input transition
- Multiphase motor commutation
- Hall effect decode
- Multichannel pulse width modulation
- Fast quadrature decode
- Period/pulse width accumulator
- Output compare
- Single-channel pulse width modulation
- Discrete input/output
- Synchronized pulse width measurement
- Synchronous serial input/output port
- Read/write timers and pins



**For More Information On This Product,
Go to: www.freescale.com**

Freescale Semiconductor, Inc.

PRODUCTION

PART NUMBER	FEATURES	SPEED, TEMPERATURE	QTY 10K IN 2003
MPC555LFMZP40	448 KB Flash, 50-channel timer system, 32-channel A/D, 2x CAN	40 MHz, -40°C to +125°C	\$47.59
MPC555LFCZP40	448 KB Flash, 50-channel timer system, 32-channel A/D, 2x CAN	40 MHz, -40°C to +85°C	\$43.26
MPC561MZP56	54-channel timer system, 32-channel A/D, 3x CAN	56 MHz, -40°C to +125°C	\$23.87
MPC561CZP40	54-channel timer system, 32-channel A/D, 3x CAN	40 MHz, -40°C to +85°C	\$21.70
MPC563MZP56	512 KB Flash, 54-channel timer system, 32-channel A/D, 3x CAN	56 MHz, -40°C to +125°C	\$39.18
MPC563CZP40	512 KB Flash, 54-channel timer system, 32-channel A/D, 3x CAN	40 MHz, -40°C to +85°C	\$35.62
MPC565MZP56	1 MB Flash, 70-channel timer system, 40-channel A/D, 3x CAN	56 MHz, -40°C to +125°C	\$58.54
MPC565CZP40	1 MB Flash, 70-channel timer system, 40-channel A/D, 3x CAN	40 MHz, -40°C to +85°C	\$50.91

SAMPLES

PART NUMBER	FEATURES	SPEED, TEMPERATURE	1 PCS NOW
KMPC555LFMZP40	448 KB Flash, 50-channel timer system, 32-channel A/D, 2x CAN	40 MHz, -40°C to +125°C	\$56.05
KMPC561MZP56	54-channel timer system, 32-channel A/D, 3x CAN	56 MHz, -40°C to +125°C	\$28.11
KMPC563MZP56	512 KB Flash, 54-channel timer system, 32-channel A/D, 3x CAN	56 MHz, -40°C to +125°C	\$46.15
KMPC565MZP56	1 MB Flash, 70-channel timer system, 40-channel A/D, 3x CAN	56 MHz, -40°C to +125°C	\$68.94

EVALUATION BOARDS

PART NUMBER	SUPPORTED DEVICES	1 PCS NOW
MPC555CME	MPC555	\$650
MPC564EVB	MPC561, MPC562, MPC563, MPC564	\$895
MPC566EVB	MPC565, MPC566	\$895

Metrowerks™ www.metrowerks.com IDE - CodeWarrior™ Flash Programming - IDE OSEK RTOS	Lauterbach www.lauterbach.com BDM Debugger Trace32 Nexus Debugger Trace32 Code Trace (with Bus Access) Code Trace (Nexus™)	Ashware www.ashware.com TPU Simulator
Axiom www.axman.com Evaluation Boards	Ashling Microsystems www.ashling.com BDM Debugger - Opella, Genia, and Vitra Nexus Debugger - Vitra (w/ trace) Nexus Debugger - Opella, Genia	ETAS www.etasinc.com ErCOSEK Calibration Tools (ETK) Calibration Tools (ETK) Nexus
WindRiver® www.windriver.com BDM debugger - SingleStep™ BdM debugger - SingleStep with vision Flash Programming - SingleStep BDM Debugger - visionCLICK Nexus Debugger - visionCLICK Nexus Debugger - SingleStep with vision Flash Programming - visionCLICK Compiler - DiabData MATRIXx Simulator - SingleStep	Green Hills www.ghs.com IDE, Debugger - Multi	Agilent www.agilent.com Logic Analyzer Inverse Assembler, Source Correlation Emulation Probe (BDM)
	P&E Microsystems www.pemicro.com Low-Cost Debugger Flash Programming Tools	Tektronix www.tektronix.com Logic Analyzer
	GNU www.gnu.org Compiler/Debugger	Abatron AG www.abatron.ch/welcome.html BDM Support
		Accelerated Technologies www.acceleratedtechnology.com RTOS (Nucleus)

LEARN MORE:

Brochures and Manuals:

RCPURM/AD - MPC500 Family RCPURM Reference Manual
 AN2109/D - MPC555 Interrupts
 MPC555PB/D - MPC555 Microcontroller Product Brief
 MPC561_3RM/D - MPC561/MPC562/MPC563/MPC564 Reference Manual
 MPC561PB/D - MPC56x Microcontroller Product Brief for 561/562/563/564
 MPC565PB/D - MPC565/MPC566 Product Brief
 MPC500PITCHPAK/D - Printed family product briefs and CD with technical data

Motorola Semiconductors

www.motorola.com/semiconductors

MPC500 Web Resources:

www.motorola.com/semiconductors

(Click on 32-bit Embedded Processors, then PowerPC, then choose MPC5xx)

Products Library

www.motorola.com/semiconductors/webapp/sps/library/prod_lib.jsp

Documentation Library

www.motorola.com/semiconductors/webapp/sps/library/docu_lib.jsp

Tools Library

www.motorola.com/semiconductors/webapp/sps/library/tools_lib.jsp

Metrowerks

www.metrowerks.com

MPC500 Webcast

www.motorola.com/semiconductors/collateral/RMWCMP5XX.html



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