RPM Systems Corporation
Redmond, Washington USA

MPQ-AVR

Four Port In-System Programmer
for
Atmel AVR Microcontrollers

The MPQ-AVR is a member of RPM's family of dedicated in-system device programmers. It supports programming of Atmel's AT90, ATtiny, ATmega and ATxmega family microcontrollers. Like all MPQ's, it is reliable, efficient, flexible and cost effective - all of the features you require in a manufacturing programmer.

Fast and Portable

Up to four different target images can be stored in the programmer's internal Flash memory, allowing faster programming times and standalone operation. Our adaptive programming algorithm provides the fastest programming time for each image.

Program Four Devices Simultaneously

Four-port programming allows each MPQ to program the same image on up to four separate target devices simultaneously, increasing manufacturing throughput fourfold. Up to 16 MPQ's can be interconnected in an array to allow programming of up to 64 devices simultaneously.

Stand-alone, ATE-Controlled or PC-Controlled

MPQ can be operated stand-alone (just press a button to initiate programming), directly from a host PC using MPManager software, or under the control of your Automated Test Equipment (ATE) system.

Supports SPI, PDI and JTAG Programming

MPQ-AVR provides SPI, PDI, TPI and JTAG programming support (see ordering options), to accommodate the widest range of AVR devices and customer programming requirements.

Rugged and Ready for Manufacturing World Wide

Features like an extruded aluminum chassis, universal power supply and extensive electrical protection ensure that MPQ-AVR will be at home in any manufacturing environment.

Secure Image Management

Secure your programming images, preventing them from being read back from the programmer, and define a maximum number of parts to be programmed from each image. Send your MPQ to CM's anywhere in the world without worry.

Powerful Software - Field Upgradable

MPQ-AVR comes complete with MPManager software to provide programmer configuration and image management, PC-controlled device programming, and more. MPManager also provides the ability to upgrade your MPQ-AVR programmer on site as support for new devices is released by RPM.

Device Serialization

MPQ-AVR supports on-the-fly image modification, allowing each device to be programmed with a unique serial number, MAC address, IP address, etc.

MPQ-AVR In-System Programmer

Full Memory Programming Speeds for Selected Devices			
Operation	ATtiny26 (2 Kb)	ATmega169 (16 Kb)	ATmega649 (64 Kb)
Program / Read Verify (SPI)	*1.5s*	*3.7s*	*15s*
Program / Read Verify (JTAG)	*<n/a>*	*3.7s*	*15s*

Times shown are typical times to erase, program and verify four devices using maximum size program images for each device.

Supported Devices

AT90: AT90PWM1, AT90PWM2, AT90PWM2B, AT90PWM216, AT90PWM3, AT90PWM3B, AT90PWM316, AT90CAN32, AT90CAN64, AT90USB64, AT90CAN128, AT90USB82, AT90USB162, AT90USB128

ATmega: ATmega48, ATmega48P, ATmega8, ATmega8U2, ATmega8515, ATmega8535, ATmega88(P/PA), ATmega16, ATmega16M1, ATmega16U2, ATmega162, ATmega164A, ATmega164P, ATmega164PA, ATmega165, ATmega165P, ATmega168, ATmega168P, ATmega169(A/P), ATmega32, ATmega32C1, ATmega32M1, ATmega32U2, ATmega324P, ATmega324PA, ATmega325(P/PA), ATmega3250(P/PA), ATmega328P, ATmega329(P/PA), ATmega3290, ATmega3290P, ATmega406, ATmega64, ATmega64C1, ATmega64M1, ATmega640, ATmega644(P/PA), ATmega645, ATmega6450(A/P), ATmega649(P), ATmega6490(P), ATmega128, ATmega1280, ATmega1281, ATmega1284, ATmega1284P, ATmega2560, ATmega2561

ATtiny: ATtiny4, ATtiny5, ATtiny9, ATtiny10, ATtiny12, ATtiny13, ATtiny15L, ATtiny2313, ATtiny24, ATtiny25, ATtiny26, ATtiny261, ATtiny40, ATtiny44, ATtiny45, ATtiny461, ATmega48, ATtiny84, ATtiny85, ATtiny861, ATtiny88, ATtiny828

ATxmega: ATxmega8E5, ATxmega16A4, ATxmega16C4, ATxmega16D4, ATxmega16E5, ATxmega32A4, ATxmega32C3, ATxmega32C4, ATxmega32D4, ATxmega32E5, ATxmega64A1, ATxmega64A3, ATxmega64A4, ATxmega64B1, ATxmega64B3, ATxmega64C3, ATxmega64D3, ATxmega64D4, ATxmega128A1, ATxmega128A3, ATxmega128A4, ATxmega128B1, ATxmega128B3, ATxmega128C3, ATxmega128D3, ATxmega128D4, ATxmega192A1, ATxmega192A3, ATxmega192C3, ATxmega192D3, ATxmega256A1, ATxmega256A3(BU), ATxmega256C3, ATxmega256D3, ATxmega384A1, ATxmega384C3, ATxmega384D3

ATA5795

Specifications

Target Voltage Range:	1.80 to 5.0VDC
Power Supply:	100 to 240VAC, 50/60Hz **
Operating Temperature Range:	0°C to +60°C

Software Support

RPM Systems *MPManager* Software

• Programmer Configuration and Image Management

• PC-Controlled Programming

• Windows™ 98, NT, 2000, XP, Vista, 7

Ordering Options

• MPQ-AVR(SPI): SPI/PDI/TPI Programming Only

• MPQ-AVR(JTAG): JTAG Programming Only

• MPQ-AVR: SPI, PDI, TPI and JTAG supported

** MPQ-PS Power Supply included with MPQ-AVR

MPQ Programmers are also available for these popular microcontroller families:
- Cypress PSoC/3/5 and enCoRe II/III/V
- Silicon Labs C8051F series
- Zilog Z8 Encore! and ZNeo
- Atmel AVR32
- ARM