

## ➔ AT18F Series

### FPGA Configuration Flash Memory

The AT18F Series of JTAG In-System Programmable Configuration PROMs (configurators) provide an easy-to-use, cost-effective configuration memory for Field Programmable Gate Arrays (FPGAs). The configurators use a simple serial-access procedure to configure one or more FPGA devices. The configurators can be programmed with an Atmel® programmer or industry-standard, third-party, stand-alone programmers from manufacturers such as BP, Data I/O, Hi-Lo, etc.

#### Key Features

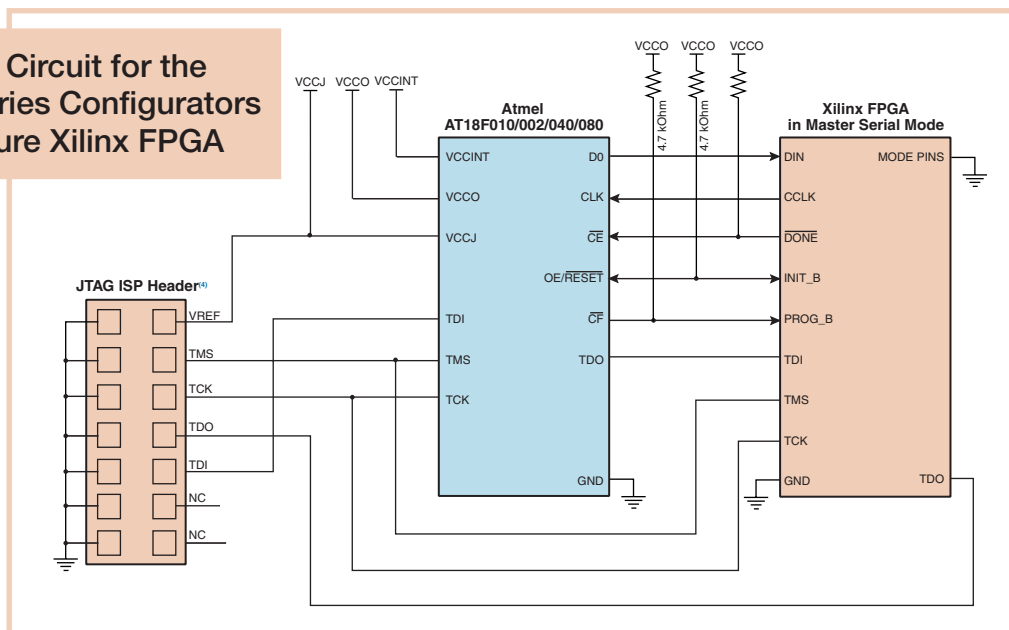
- Very Low Cost Configuration Memory
- Pin-compatible with Xilinx® Platform Flash Memory
- Programmable 1M, 2M, 4M and 7M Serial Memories for Xilinx, Virtex® and Spartan® Series FPGAs
- In-System Programmability (ISP) via JTAG Interface (IEEE 1532)
- 20-lead TSSOP Small Package, Fully Green and RoHS Compliant
- Cascadable Read-back to Support Additional Configurations or High-density FPGAs
- Programming Support Using Atmel Programmer and Industry-standard Third-party Programmers
- 3.3V Devices with 1.8V, 2.5V or 3.3V I/O

#### Configuration Memory Offering

|                      | AT18F010-30XU | AT18F002-30XU | AT18F040-30XU | AT18F080-30XU |
|----------------------|---------------|---------------|---------------|---------------|
| Density              | 1-Mbit        | 2-Mbit        | 4-Mbit        | 7-Mbit        |
| JTAG Programming     | Yes           | Yes           | Yes           | Yes           |
| VCC                  | 3.3V          | 3.3V          | 3.3V          | 3.3V          |
| VCCO                 | 1.8 - 3.3V    | 1.8 - 3.3V    | 1.8 - 3.3V    | 1.8 - 3.3V    |
| VCCJ                 | 1.8 - 3.3V    | 1.8 - 3.3V    | 1.8 - 3.3V    | 1.8 - 3.3V    |
| Configuration Clock  | 33 MHz        | 33 MHz        | 33 MHz        | 33 MHz        |
| Packaging            | 20-lead TSSOP | 20-lead TSSOP | 20-lead TSSOP | 20-lead TSSOP |
| Green Package Option | Yes           | Yes           | Yes           | Yes           |



## JTAG ISP Circuit for the AT18F Series Configurators to Configure Xilinx FPGA



## Atmel Configuration Memory and Compatible Xilinx FPGAs

| Atmel Configurator | Xilinx FPGA  |                              |
|--------------------|--------------|------------------------------|
| AT18F010-30XU      | Virtex-II    | XC2V40/2V80                  |
|                    | Virtex-E     | XCV50E/V100E                 |
|                    | Virtex       | XCV50/V100/V150              |
|                    | Spartan-3A   | XC3S50A                      |
|                    | Spartan-3E   | XC3S100E                     |
|                    | Spartan-3    | XC3S50/3S200                 |
|                    | Spartan-II-E | XC2S50E/2S100E               |
|                    | Spartan-II   | XC2S15/2S30/2S50/2S100/2S150 |

| Atmel Configurator | Xilinx FPGA   |                        |
|--------------------|---------------|------------------------|
| AT18F002-30XU      | Virtex-II Pro | XC2VP2                 |
|                    | Virtex-II     | XC2V250                |
|                    | Virtex-E      | XCV200E/V300E          |
|                    | Virtex        | XCV200/V300            |
|                    | Spartan-3A    | XC3S200A/3S400A        |
|                    | Spartan-3E    | XC3S250E               |
|                    | Spartan-3     | XC3S400                |
|                    | Spartan-II-E  | XC2S150E/2S200E/2S300E |
|                    | Spartan-II    | XC2S200                |

| Atmel Configurator | Xilinx FPGA   |                     |
|--------------------|---------------|---------------------|
| AT18F040-30XU      | Virtex-II Pro | XC2VP4              |
|                    | Virtex-II     | XC2V500/2V1000      |
|                    | Virtex-E      | XCV400E/V405E/V600E |
|                    | Virtex        | XCV400/V600         |
|                    | Spartan-3A    | XC3S700A            |
|                    | Spartan-3E    | XC3S500E/3S1200E    |
|                    | Spartan-3L    | XC3S1000L           |
|                    | Spartan-3     | XC3S1000            |
|                    | Spartan-II-E  | XC2S400E/2S600E     |

| Atmel Configurator | Xilinx FPGA     |                       |
|--------------------|-----------------|-----------------------|
| AT18F080-30XU      | Virtex-5LX      | XC5VLX30              |
|                    | Virtex-4 LX     | XC4VLX15/4VLX25       |
|                    | Virtex-4 FX     | XC4VFX12/4VFX20       |
|                    | Virtex-II Pro X | XC2VPX20              |
|                    | Virtex-II Pro   | XC2VP7/2VP20          |
|                    | Virtex-II       | XC2V1500/2V2000       |
|                    | Virtex-E        | XCV812E/V1000E/V1600E |
|                    | Virtex          | XCV800/V1000          |
|                    | Spartan-3A      | XC3S1400A             |
|                    | Spartan-3E      | XC3S1600E             |
|                    | Spartan-3L      | XC3S1500L             |
|                    | Spartan-3       | XC3S1500/3S2000       |

## Atmel Programming Tools

- Software:** **JCPS** – JTAG Version of Configurator Programming System.
- Hardware:** **AT18F-DK3 Configurator Programming Kit** – It includes the ATF15xx-DK3 Baseboard, the ATF15xxDK3-SAX20 Adapter Module, the ATDH11151VPC Cable and the AT18F Configurator Converter.

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