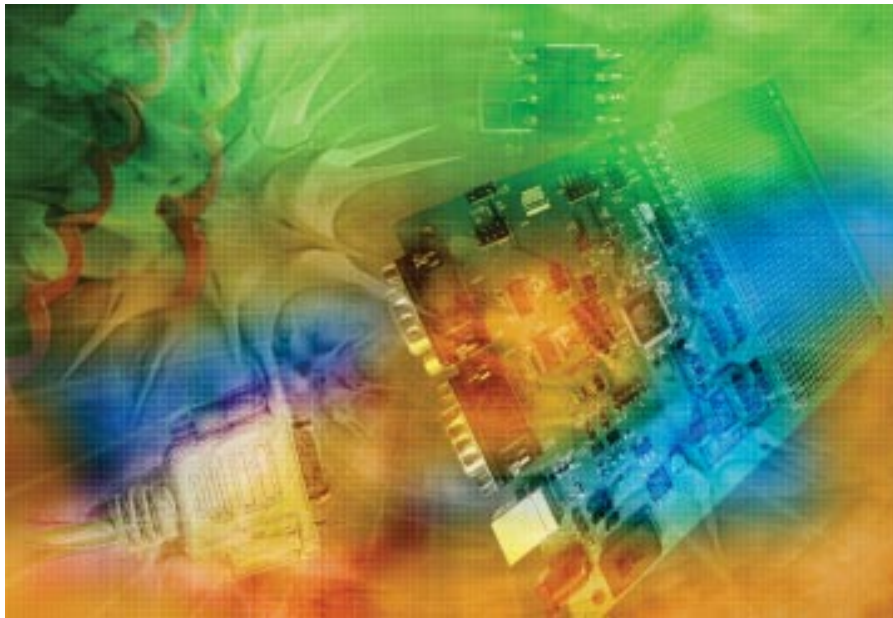


# AT76C713

## USB BRIDGE CONTROLLER

A powerful 8-bit microcontroller that enables bridging of USB to various types of devices.



- Based on Atmel's AVR® RISC Architecture, 130 Powerful Instructions
- Clock Generator Provides CPU Rates Up to 48 MHz
- One External Clock Crystal of 12 MHz Generates All the Required System Clocks
- Full-speed USB Interface (12 Mbits/s) 2.0 Compliant
- Two On-chip 16550 UARTs, Each Supporting Baud Rates Up to 921 Kbaud
- On-chip Bootstrap ROM Provides a Variety of Firmware Upgrade Modes
- Programmable SPI Interface
- JTAG (IEEE Std. 1149.1 Compliant) Interface for Program Code Debug
- 8 Kbytes x 16 bits (Up to 11 Kbytes x 16 bits), In-System SRAM for Program Code (Program Memory)
- On-chip 8 Kbytes SRAM
- DMA Channels Allow Fast Data Transfers between End Point Buffers and Internal or External SRAM
- Two 8-bit Timer/Counters and One 16-bit Timer/Counter
- Four External Interrupts through GPIOs
- Programmable Watchdog Timer
- Low-voltage operation: 1.8V Core, 3.3V I/O



**Atmel Corporation**

2325 Orchard Parkway  
 San Jose, CA 95131, USA  
 Tel: 1(408) 441-0311  
 Fax: 1(408) 487-2600

**Regional Headquarters**

**Europe**

Atmel Sarl  
 Route des Arsenaux 41  
 Case Postale 80  
 CH-1705 Fribourg  
 Switzerland  
 Tel: (41) 26-426-5555  
 Fax: (41) 26-426-5500

**Asia**

Room 1219  
 Chinachem Golden Plaza  
 77 Mody Road Tsimshatsui  
 East Kowloon  
 Hong Kong  
 Tel: (852) 2721-9778  
 Fax: (852) 2722-1369

**Japan**

9F, Tonetsu Shinkawa Bldg.  
 1-24-8 Shinkawa  
 Chuo-ku, Tokyo 104-0033  
 Japan  
 Tel: (81) 3-3523-3551  
 Fax: (81) 3-3523-7581

**Product Contact**

3800 Gateway Centre Blvd.  
 Suite 311  
 Morrisville, NC 27560, USA  
 Tel: (919) 462-6540  
 Fax: (919) 462-0300

**Literature Requests**

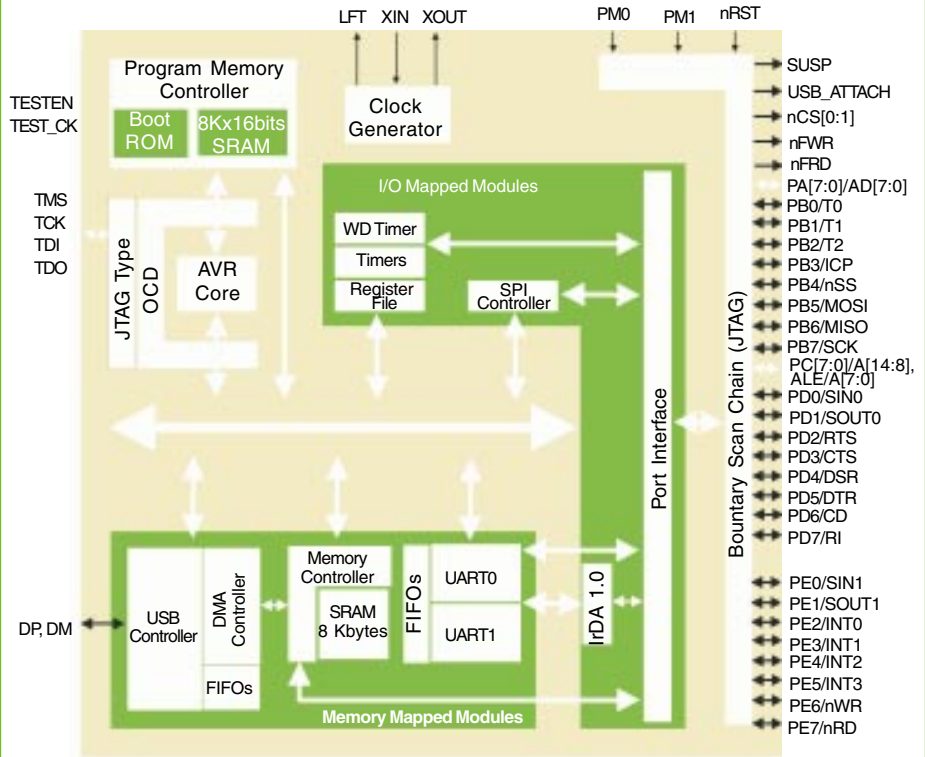
[www.atmel.com/literature](http://www.atmel.com/literature)



**Disclaimer:** The information in this document is provided in connection with Atmel products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Atmel products. EXCEPT AS SET FORTH IN ATMEL'S TERMS AND CONDITIONS OF SALE LOCATED ON ATMEL'S WEB SITE, ATMEL ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL ATMEL BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION, OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF ATMEL HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Atmel makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Atmel does not make any commitment to update the information contained herein. Atmel's products are not intended, authorized, or warranted for use as components in applications intended to support or sustain life.

©Atmel Corporation 2004. All rights reserved. Atmel®, logo and combinations thereof, AVR®, and AVR Studio® are registered trademarks, and EveryWhere You Are™ are the trademarks of Atmel Corporation or its subsidiaries. Other terms and product names may be trademarks of others.

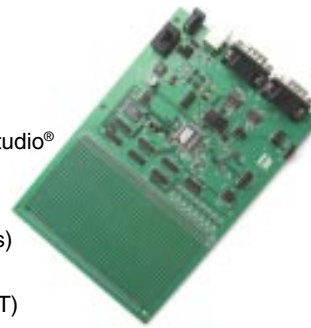
The Atmel AT76C713 is a powerful USB peripheral device that can connect various types of devices to a common USB port. It is supported with a full suite of program and system development tools including: C-compiler, macro assemblers, program debugger/simulators, in-circuit emulators, development kits, etc.



**AT76C713 Block Diagram**

**Development Kit**

- Development board
- User guide
- Programmer guide
- Supported by the AVR Studio® Development suite
- Software (AVR Studio and programming utilities)
- Sample of user application (USB to UART)
- Reference design (schematics, gerber, and BOM)



**AT76C713-DK Board**

**Applications**

- USB-to-Serial (RS-232, RS-422 and RS-485) converters
- USB data cable for mobile phones and PDAs
- USB bar code readers
- USB chargers

USB	SPI	UART(s)	JTAG	Development Tools	EK	DK	Package
√	√	2	√	√	-	√	100-pin TQFP

Maximum Operating Temperature: -40°C to 85°C  
 Maximum Operating Voltage: 3.6V