

- Industry Proven
- Classic Hardware
- USB ISP for all Windows Platforms

- Application Builder
- AVR Studio 4
- WinAVR C
- JTAGAVR ICE with adapters

#### Contents:

- Target board
- Board Schematics
- AVR ATmega16
- AVR USB ISP
- USB JTAGAVR ICE

#### ON CD

- Full manual
- Application Builder
- AVRStudio 4
- WinAVR C
- Embedded C book
- AVR Book
- Code examples
- AVR datasheets

#### Compatible with:

- Win2000/XP
- Win Vista

#### Order Code:

**STK200ICE**

# AVR®

## STK200ICE

### A complete Starter Kit for AVR microcontrollers with JTAGAVR ICE



#### The best starter kit ever

The STK200 supplied by Kanda to Atmel was the most successful starter kit EVER produced, with over 30,000 sold worldwide. Its success was due to Kanda's design concept that it should support as many features as possible but remain really easy to use, coupled with our excellent quality control and reliability in manufacture. We are pleased to be able to tell you that a new and enhanced version is now available direct from us.

#### STK200 ICE

Now redesigned with the same easy to use philosophy to include new device support and extra features. However, we have made sure that it is compatible with previous versions so your older code or training material will still work. Includes JTAGAVR ICE with adapters to plug straight in. The JTAGAVR is described from page 5 onwards. Note: JTAGAVR ICE only works with AVRs with JTAG Interface - see page 6. Supplied with ATmega162L.

#### STK200 board

You need hardware that supports all your needs but does not take weeks to understand. The classic target board is effectively laid out to give you access to all the peripherals of the different AVR devices.

Unlike other starter kits, the STK200 is simple to use and does not require a box full of leads and jumpers. Nor do you have to spend hours studying the manual before you can do anything.

But you still get all the features you need.

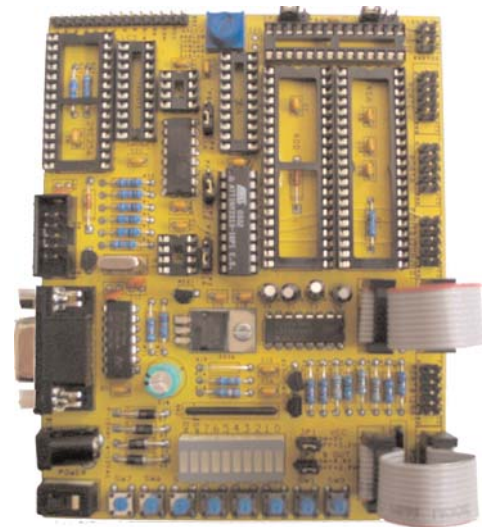
- Sockets for different devices. 1 x 8, 2 x 20, 1 x 28 and 2 x 40 pin sockets to support all device pin-outs

- Port Headers. 0.1" (2.54mm) DIL headers for all ports, including a Vcc and Ground pin for external circuitry. Features multiple Port B headers to correctly route signals on smaller devices and retain compatibility with original STK200 boards

- 8-way bar LED and 8 Switches. Can be connected to any available port using short 10-way leads (supplied)

- RS232 circuit. Full specification RS232 port with DB9 connector

- Clock/Port Pin select on smaller devices to free extra I/O pin if not programming



## Device Support, ISP and sockets on STK200 board:

- ATtiny13
- ATtiny24/44/84
- ATtiny25/45/85
- ATtiny26/261
- ATtiny461/861
- ATtiny26
- ATtiny2313
  
- ATmega48
- ATmega8
- ATmega88
- ATmega8515
- ATmega8535
- ATmega16
- ATmega161
- ATmega162
- ATmega163
- ATmega168
- ATmega32
- ATmega644P

## ISP Support only - no board support:

- ATmega64
- ATmega169

## ISP support only - board support on STK300:

- ATmega2561
- ATmega128

## Order Code:

**STK200ICE**

- LCD Interface connector. 14-way connector for Hitachi LCD units, complete with contrast resistors and pulse stretching circuitry
- 3.3V or 5V operation. Voltage selection using a single jumper
- Brownout. Built in brownout circuit, with single jumper to set 2.9V or 4.5V level
- ADC circuit. Flexible ADC interface with reference pot or user supplied or internal reference. Supports new ADC features of ATmega devices including differential inputs.
- External Memory. 74HC573 address latch and Flash RAM sockets (Devices available separately)
- EEPROM socket. 24C (2 wire) memory socket
- Clock circuit. External clock circuit for reliable operation on all sockets. Default crystal is 8MHz for Low Voltage devices but board supports crystals up to 16MHz.

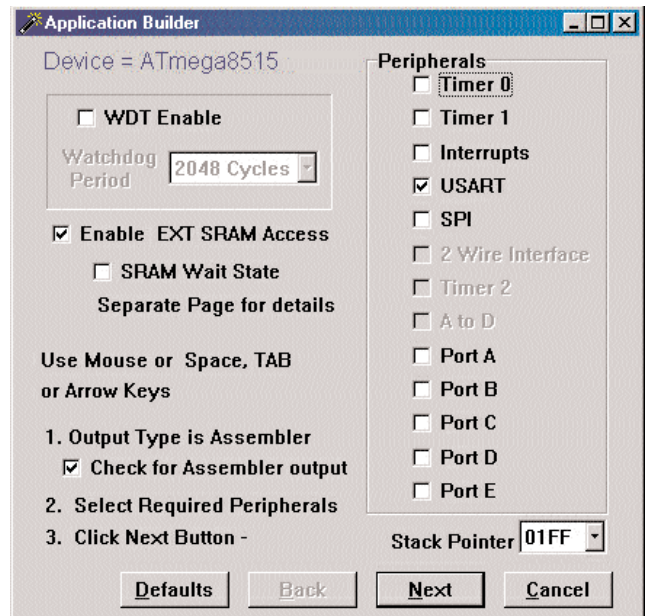
### ISP

The system uses a USB port programmer with 10-way ribbon cable using Kanda standard connection as adopted by Atmel and the ISP software is now an industry standard. This is a full featured programmer with all programming operations - Erase, Read, Program, Verify, including all Fuse and Lockbit settings. For a full description of the programmer, see AVRISP-U

### Application Builder

The Application Builder uses simple wizards to create all your setup code including ports, timers, UART, ADC, SPI, watchdog and interrupts. Stack pointer, External SRAM access and Boot Block setup (Reset and Interrupt Vector locations) can also be set.

This powerful feature gives you instant source code templates and code examples. It also reduces the need to read all the datasheets before you start your development, saving you time and money.



- Supported devices include ATmega8515 and ATmega8535
- Support for all new Timers, ADC features, External RAM access configuration etc.
- Bootloader support, including placing of Reset and Interrupt Vectors
- Output type can be Assembler or C code
- Runs under all Windows operating systems

### Atmel AVR Studio

Atmel's superb development environment, AVR Studio 4, is included on the CD so you do not have to download it. It includes full editor, assembler and simulator for all the AVR devices. It is project based so that you can keep all your files together without any hassle. This is the best microcontroller development environment available from any manufacturer.

**Device Support, ISP and sockets on STK200 board:**

- ATtiny12
- ATtiny13
- ATtiny15
- ATtiny22
- ATtiny2313
- ATtiny26

- AT90S1200
- AT90S2313
- AT90S2323
- AT90S2343
- AT90S2333
- AT90S4414
- AT90S4433
- AT90S8515
- AT90S8535

- ATmega48
- ATmega8
- ATmega88
- ATmega8515
- ATmega8535
- ATmega16
- ATmega161
- ATmega162
- ATmega163
- ATmega168
- ATmega32
- ATmega323

ISP Support only - no board support:

- ATmega64
- ATmega169

ISP support only - board support on STK300:

- ATmega103
- ATmega128

**Order Code:**

**STK200ICE**

**C Compiler**

WinAVR is a GNU-GCC C compiler that can now operate within AVR Studio, allowing C Projects to be created and debugged in the AVR Studio environment.

A book on Embedded C is also on the STK200 CD, which covers program design and other topics.

**Contents**

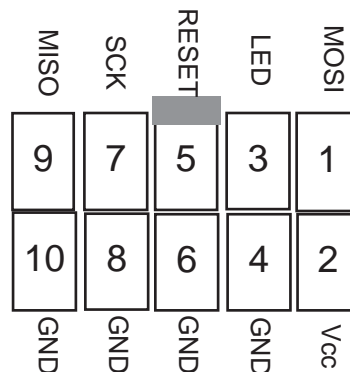
- STK200 Board with AVR device
- AVRISP-U USB Port Programmer
- Programming lead, LED and Socket leads
- JTAGAVR ICE, leads and adapters (USB )
- On CD:
  - Programming software
  - Application Builder
  - User Manual
  - Code Examples
  - Board schematics
  - Device datasheets
  - Atmel AVR Studio 4 (distributed under licence conditions of Atmel Corp.©)
  - WinAVR C compiler

**Technical**

- Power Supply requirements. The board needs 9-15VDC or 7-12VAC. Connector type is a 2.1mm barrel connector, centre positive. See PSUSTK-UK, PSU135-EU or PSU135-US for suitable PSU (wall transformers)

- Clock. Default is 8MHz but can be replaced by crystals up to 16MHz as crystal is in socket

- Programming Interface (ISP).



- Socket Support

DEVICE	SOCKET
AT90S1200	20D
AT90S2313	20D
AT90S2323	8D
AT90S2343	8D
AT90S2333	28D
AT90S4433	28D
AT90S4414	40D
AT90S8515	40D
AT90S8535	40A

DEVICE	SOCKET
ATmega48	28D
ATmega88	28D
ATmega168	28D
ATmega8	28D
ATmega16	40A
ATmega161	40D
ATmega163	40A
ATmega8535	40A
ATmega8515	40D
ATmega32	40A
ATmega162	40D

DEVICE	SOCKET
ATtiny26	20A
ATtiny2313	20D
ATtiny12	8D
ATtiny13	8D
ATtiny15	8D
ATtiny22	8D

**Device Support, ISP and sockets on STK200 board:**

- ATtiny12
- ATtiny13
- ATtiny15
- ATtiny22
- ATtiny2313
- ATtiny26

- AT90S1200
- AT90S2313
- AT90S2323
- AT90S2343
- AT90S2333
- AT90S4414
- AT90S4433
- AT90S8515
- AT90S8535

- ATmega48
- ATmega8
- ATmega88
- ATmega8515
- ATmega8535
- ATmega16
- ATmega161
- ATmega162
- ATmega163
- ATmega168
- ATmega32
- ATmega323

ISP Support only - no board support:

- ATmega64
- ATmega169

ISP support only - board support on STK300:

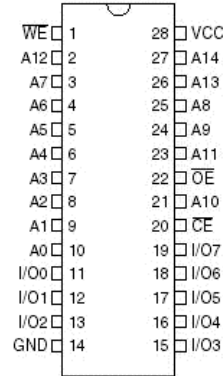
- ATmega2561
- ATmega128

**Order Code:**

**STK200ICE**

- Physical
- Dimensions: 130 x 100 mm (5 inches x 4 inches)
- Package weight: 300g (10 oz)

- External memory socket for AT29C Flash RAM



**Accessories**

Order Code	Description
STK200-RAM	Flash RAM (AT29C256) and Address latch (74HC573)
467200-PM	Data Entry Key Pad (4 x 3)
570910-PM	Intelligent Alphanumeric LCD (16 x 2)
PSU135-US	110V/13.5V Unregulated wall transformer
PSU135-EU	220V/13.5 Unregulated PSU
PSUSTK-UK	220V/15V regulated PSU
EE-02	256 Byte 24C EEPROM

**Related Products**

Order Code	Description
STK300	Starter Kit for ATmega128 devices. Comes with 64-pin TQFP device mounted on custom header. Ideal for larger projects
PSI-ISP	Serial and parallel port programmer. Faster with serial port option. Better low voltage support
AVRUSB	USB port Programmer - our best and fastest programmer. Ideal for production and using multiple programmers from 1 PC. DLL available
AVR Devices	We can supply all AVR devices in small or large quantities. Memories and other devices are also available



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