



## To our valued customers

I want to express my thanks to you for being interested in our products and for having confidence in LogiFind International CO,. Ltd..The primary aim of our company is to design and produce high quality electronic products and to constantly improve the performance thereof in order to better suit your needs.

Please share your thoughts and feelings regarding our operation so that we can serve you better in the future. I thank you for your continued support and patronage. Your Dream is our Destination!

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Sincerely,

4)

Owner and General Manager of LogiFind International CO,. Ltd.



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## I. What is easyAVR128<sup>TM</sup>?

The easyAVR128 Board is a complete solution for fast and simple development of embedded applications by using a new Atmel® ATmega128A device connected to 7.3728Mhz oscillator.It has a bootloader inside the ATmega128A, and it allows self-programming very easily without an external programmer or debugger.

Key features:

- Bootloader program loaded into the ATmega128A microcontroller;
- CP2102 USB to UART converter for RS232 communication and bootloader programming.
- 5V and 3.3V power supply;
- RS232 Circuit with DB9 connector;
- 5V,3.3V and GND PINOUTs for DIY;
- 8 user LEDs;
- System Reset Key;
- DS1302 Real Time Clock;
- 24C02 eeprom;
- Standard ISP6 connector;
- Standard ISP10 connector;
- Standard JTAG connector;
- 8 user KEYs;
- Stepmotor with driver circuit;
- Buzzer with driver circuit;
- Standard LCD1602 socket;
- Standard LCD12864 socket;
- ADC0 and ADC1 input;
- DS18B20 Temp sensor socket;
- INTO and INT1 input;
- 8 digit 7-segment LED display;
- All Ios are taken out;

## II . Appliance

The easyAVR128 Board represents a development system which can be used as a stand-alone device. it has many users among students, hobbyists, enthusiasts and professionals. We Due to its preloaded bootloader program and 8-bit MCU it is ideal for low-cost experimenting and final product design.

## **III.** Power supply

For connection with a power supply source the easyAVR128 Board uses a Jack EX-PWR. The power supply voltage level can vary from +7-10V DC. When programming the MCU via bootloader, it is necessary to connect the board to a PC via a USB cable and the external power supply is no need during this time.

## **IV.Hardwre Connection description**

1. For easy access to the pins of the MCU supplied on the easyAVR128 Board you can use pads. Every pad is clearly marked with a pin name to which it is connected to.

2. To connect the easyAVR128 Board to a PC it is necessary to connect the USB port on the PC to a USB connector USB/POWER using a USB cable. When connection is established the PC will communicate with



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CP2102 chip which is connected to MCU pins PD2,PD3,PE0 and PE1. These pins are used for serial UART0 or UART1 communication.We set UART1 as the bootloader MODE channel.In other word,you must connect UART1 jumpers and disconnect UART0 jumpers when you are using bootloader to upload hex file into your target device mega128A.

- 4. The ISP6 and ISP10 connector is used for programming.
- 5. The JTAG connector is used for programming/debugging via the JTAG interface.

## V. What's on board



## **VI. Bootloader programming**

In order to program the MCU via bootloader it is necessary to place the proper jumpers like the following figure.



By doing so connection between the cp2102 chip and the MCU will be enabled. If you want to use MCU pins which are used for programming (PD2 and PD3) as I/O you should remove the related jumpers. Follow the steps below for program installation and MCU programming.



#### Step1.Instal CP2102 driver

Before you connect your easyAVR128 board to a computer running Microsoft Windows, you should install its drivers:

Download the CP2102 drivers for Windows from here:

http://www.silabs.com/products/mcu/Pages/USBtoUARTBridgeVCPDrivers.aspx

Any details, pls see "Silicon CP2102 SETUP GUIDE.pdf" we provided in CD/DVD rom.

#### Step2.Run "AVRUBD" software



Step3.Go to the Device Manager to see which com port is created

🚇 Device Manager	
File Action View Help	
📺 📲 🧕 Computer	
庄 🥪 Disk drives	
🗄 😼 Display adapters	
1 DVD/CD-ROM drives	
🗄 🖾 Human Interface Devices	
🕀 🚍 IDE ATA/ATAPI controllers	
🗄 🥁 IEEE 1394 Bus host controllers	
🗄 🎯 Imaging devices	
🕀 🦢 Keyboards	
🗄 👗 Modems	
🗄 – 👰 Monitors	
Image Network adapters	
🗄 🧟 Other devices	
E	
Ports (COM & LPT)	
Intel(R) Active Management Technology - SOL (COM4)	
Silicon Labs CP210x USB to UART Bridge (COM15)	-

#### **Step4. Com Port Setting**

Enter Option/Comport to set the correct Com Port, and click "OK".



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#### Step5. Load HEX file

Enter File/Load to load HEX file into the AVRUBD software, and click "Open".

Open				? 🛛	
Look in:	C Project		<ul> <li>O Ø 🕫 📼</li> </ul>	•	
My Recent Documents	Codep Board-Test.h	ex 4			Choose a .hex file you want to load into the microcontroller
My Documents					
My Computer					
	File name:	Board-Test	~	Open 4	Click on the Open button
My Network	Files of type:	AUB/HEX/BIN (*. aub;*. he	ex;*.bin) 💌	Cancel	

#### Step6. Start to Program

Press RESET key to force the AVR device into the bootloader MODE, and then you will see the BOOT led blinking with about 3Hz frequency. At this time, the AVR device will stay in bootloader MODE within 5s. During this time, you can enter Operation/Download or press F9 key(PC) or click is to start to download HEX file.



After downloading is finished, the application program will be running. If you want to upload the new HEX file, you have to press RESET key again to enter bootloader MODE.



PS:Sometimes an unknown error may occur when programming is finished,but it dosen't affect the normal running of the program.



## VII.Fuse Settings of Mega128A

The following fuse setting in AVRStudio has been made by factory, which ensure the bootloader can run properly.

₩ AVR Studio			🔳 🗗 🔀
File Project Build View Tools Debug Help			
: ] 12日日に日のと日報: 林本洛洛を車車	AVRISP mkII in ISP mode with ATmega128A		
i Trace Disabled 🔷 👻 🖓 🤐 🕋 i 🗰 🗰 🍟 🦞 🕬	Main Program Fuses LockBits Advanced HW Settings HW Info Auto		
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	BOOTSZ Boot Flash size=4096 words start address=\$F000	Name	Value
	BOOTRST		
	BODLEVEL Brown-out detection level at VCC=2.7 V		
	BODEN		
	SUI_CASEL EXt. Crystal/nesonator high Freq.; Start-up time. Iok Ck		
	EXTENDED		
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	L		
	Auto read		
	Smart warning:	Name	Address Value Bits
	Verify after program rrogram verify field		
	Setting mode and device parameters. OK! Entering programming mode. OK!		
Message	Reading fuses address 0 to 2 0xFF, 0x98, 0xFF 0K!	×	
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😻 ▲VR Studio			🔳 🗗 🔀
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	Fuse Value	I/O View	<b>▼</b> X
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		Name	Value
	JTAGEN V		
	EESAVE		
	BOOTSZ Boot Flash size=4096 words start address=\$F000		
	EXTENDED 0xPF HIGH 0x98		
	LOW OxFF		
	V Anto read		
	Smart warning:	Name	Address Value Bits
	Verify after program Program Verify Read		
	Setting mode and device parameters. OK!		
Message	Entering programming mode OK! Reading fuses address O to 2 OxFF, Ox98, OxFF OK!	×	
	Leaving programming mode. 0K!		

## VII.Frequently Asked Questions

#### 1).I try to power the easyAVR128, but the board does not power up, what's wrong?

Make sure that the POWER LED has turned on. If the LED is not on, check to see that the external power supply(DC7-10V) or the USB power is properly connected, check to see that the J2 is properly connected. It is

necessary to note that the external power supply(DC7-10V) and the USB power can not be connected at the same time. According to the designer's experiences, the FUSE on board is also an important factor.

#### 2) How is power supplied to the easyAVR128?

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Two supply options exist: USB power Cables and external 7—10VDC. You are only allowed to choose one of them.

#### 3) The Mega128A is no longer accessible via programmer/debugger, is something wrong with the device?

- Verify that the target device is powered properly.

- If the target is powered locally, verify your programmer/debugger is connected properly.

- If the programmer/debugger is connected properly, the Mega128A is possibly "dead". Well, it's not really dead, it's just that it can't be reprogrammed until the Mega128A is unlocked (for detailed method of unlocking an AVR device, please search for solution on-line).

#### 4) I have uploaded the Mega128A sample code, but It doesn't seem to be working, what's wrong?

- Make sure the relational jumper is correctly connected.

- If the relational jumper is correctly connected, pls check whether the device mode had been changed to "mega103"mode, In "mega103"mode, the mega128A features are not fully reflected.

-If you are using PD2 and PD3 in you source code, close the UART1(add "UCSR1B=0" in "main" of your source code).

# 5) I loaded the Mega128A sample code using an external, after that, i found the bootloader doesn't work any more.

The bootloader is erased after you upload hex file to the mega128A using external programmer. So you have to re-upload bootloader by yourself if you want to use bootloader self-programming function.



## IX.Schematic



## X.Contact Us

Official Website:<u>www.100MHz.com</u> www.LogiFind.com

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