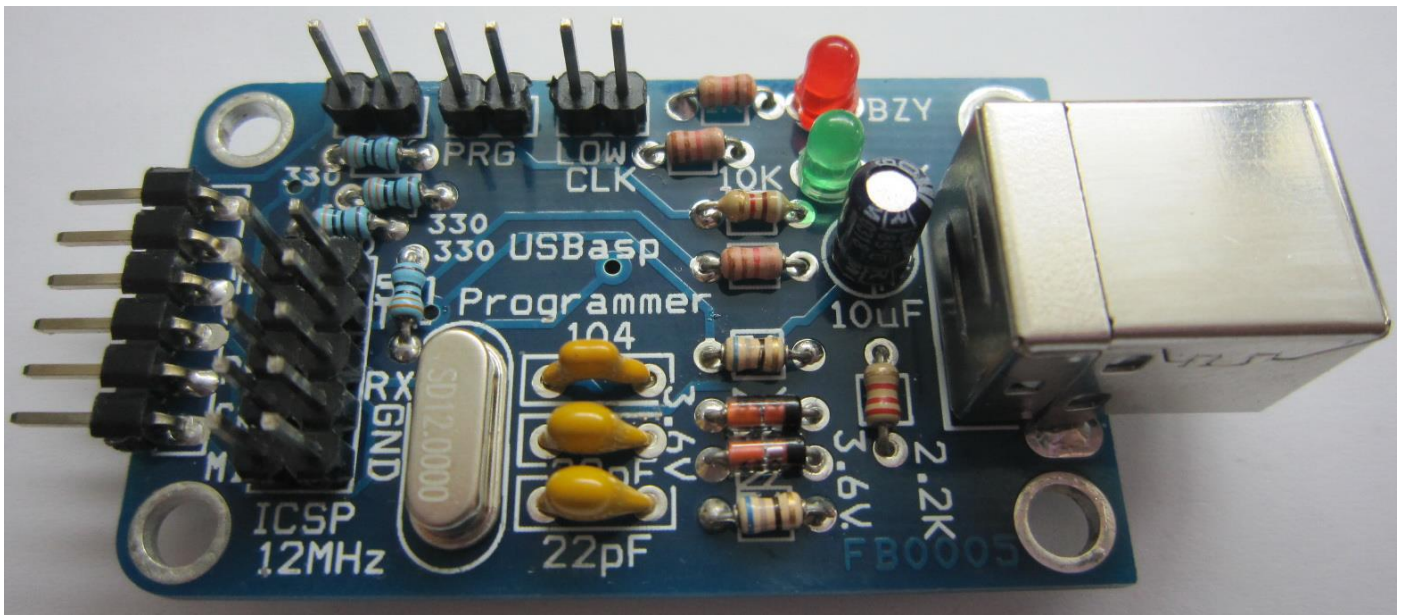


## General Description

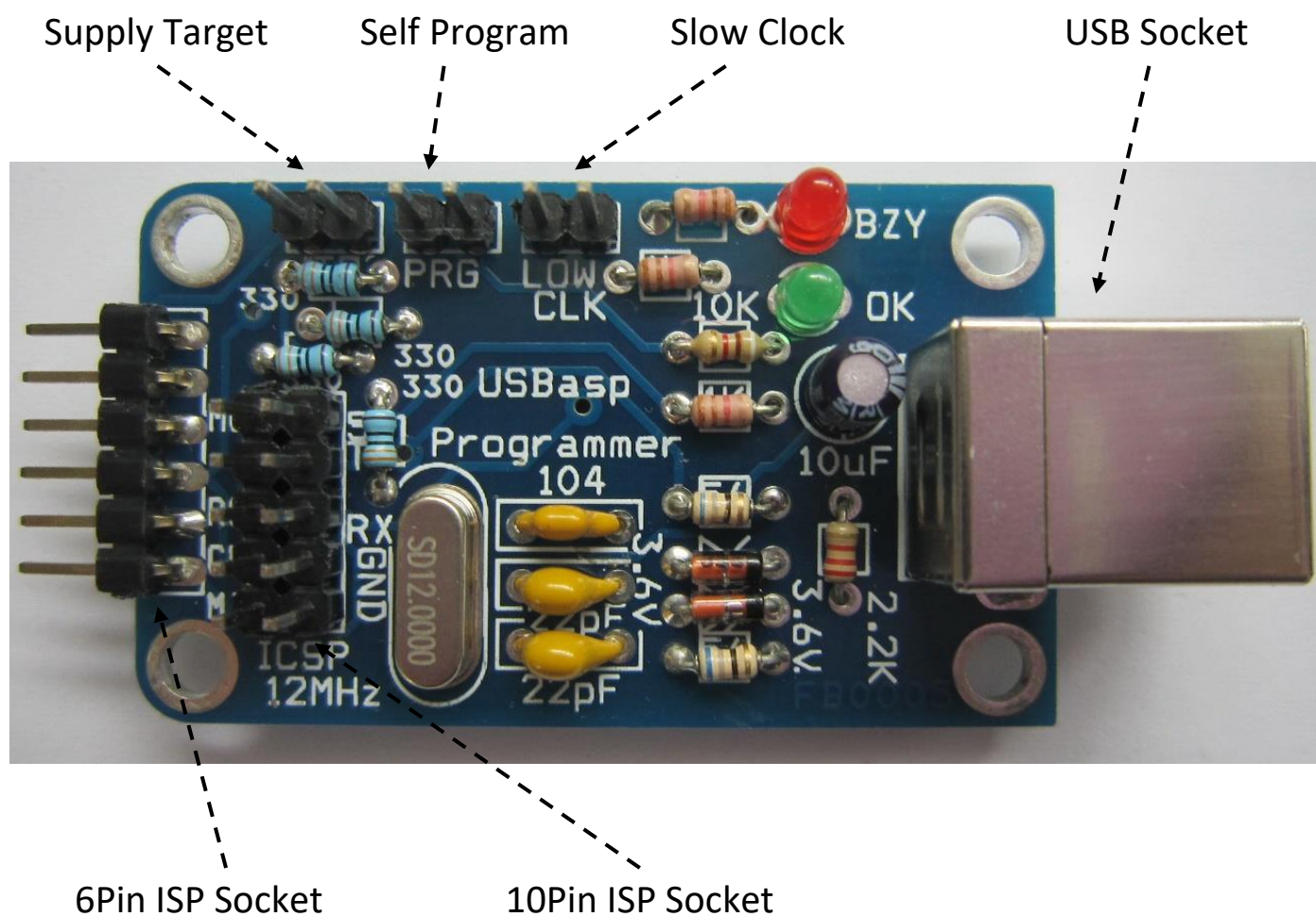
USBasp is a USB in-circuit programmer for Atmel AVR microcontrollers.

**Figure1. USBasp AVR programmer**



## Features:

- Read and write the microcontroller Program memory, EEPROM data, fuse bits and lock bits.
- USBasp programmer works under multiple platforms, Windows, Linux, and Mac OS X.
- 5 KB/sec maximum write speed.
- SCK option to support targets with low clock speed (< 1.5MHz).
- Standard 10pin and 6pin ISP interface sockets for target connecting flexibility.
- Indicator LED for normal operation and busy activity.
- Option for self-biasing target.
- Option for self programming for updating firmware.
- Size 65 X 29 X 15 mm

**Figure2. USBasp AVR programmer layout**

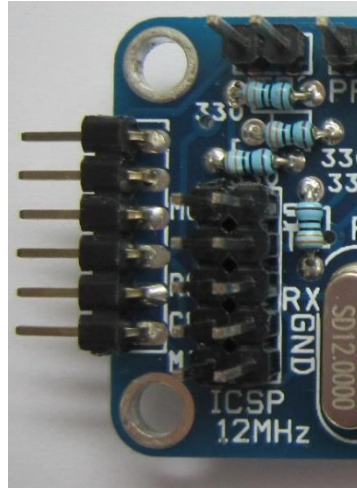
## 1 - USB Socket

The USB end of the programmer connects directly into your computers USB port.

## 2 – ISP 6Pin Socket

The 6 pin ISP connection provides an interface to the microcontroller. the pin out is shown in Figure 3

VCC (+5V) for target supply ←-----  
 GND ←-----  
 MOSI ←-----  
 MISO ←-----  
 SCK ←-----  
 RESET←-----



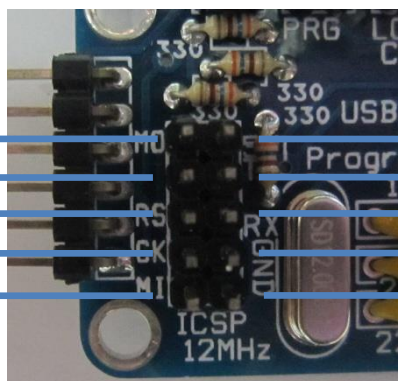
**Figure3. ISP 6pin socket**

## 3 – ISP 10Pin Socket

The 10 pin ISP connection provides an interface to the microcontroller. the pin out is shown in Figure 4

MOSI ←-----  
 GND ←-----  
 RESET ←-----  
 SCK ←-----  
 MISO ←-----

VCC (+5V) for target supply  
 ---  
 ---  
 GND  
 GND



**Figure4. ISP 10pin socket**

## 4 – Supply Target

This jumper controls the voltage on the ISP VCC connector. It can be enabled to supply 5V to target device or disable this jumper if the target device has its own power source.

## 5 – Slow Clock

This jumper is enabled if the target clock is lower than 1.5 MHz .Usually you needn't to short this jumper unless programming a new brand AVR microcontroller where usually come configured from factory with an internal clock of 1MHz.

## 6 – Self Program

This jumper is used to update the firmware of the USBasp programmer. In order to update the firmware you must enable this jumper and use another programmer to do the programming. Connect the other programmer to USBasp programmer via 6pin or 10pin ISP socket.

## Supported chips

Mega Series				
ATmega8	ATmega8A	ATmega48	ATmega48A	ATmega48P
ATmega48PA	ATmega88	ATmega88A	ATmega88P	ATmega88PA
ATmega168	ATmega168A	ATmega168P	ATmega168PA	ATmega328
ATmega328P	ATmega103	ATmega128	ATmega128P	ATmega1280
ATmega1281	ATmega16	ATmega16A	ATmega161	ATmega162
ATmega163	ATmega164	ATmega164A	ATmega164P	ATmega164PA
ATmega169	ATmega169A	ATmega169P	ATmega169PA	ATmega2560
ATmega2561	ATmega32	ATmega32A	ATmega324	ATmega324A
ATmega324P	ATmega324PA	ATmega329	ATmega329A	ATmega329P
ATmega329PA	ATmega3290	ATmega3290A	ATmega3290P	ATmega64
ATmega64A	ATmega640	ATmega644	ATmega644A	ATmega644P
ATmega644PA	ATmega649	ATmega649A	ATmega649P	ATmega6490
ATmega6490A	ATmega6490P	ATmega8515	ATmega8535	
Tiny Series				
ATtiny12	ATtiny13	ATtiny13A	ATtiny15	ATtiny25
ATtiny26	ATtiny45	ATtiny85	ATtiny2313	ATtiny2313A
Classic Series				
AT90S1200	AT90S2313	AT90S2333	AT90S2343	AT90S4414
AT90S4433	AT90S4434	AT90S8515	AT90S8535	
CAN Series				
AT90CAN128				
PWM Series				
AT90PWM2	AT90PWM3			

## Driver Installation

Start Windows and connect USBasp to the system. When Windows asks for a driver, choose "usbasp-windriver\libusb\_0.1.12.1". Windows XP may warn that the driver is not 'digitally signed'. Ignore this message and continue with the installation.

On Linux and Mac OS X no kernel driver is required.

## Software installation

Two software programs can be used to burn hex codes to target using USBasp programmer. Khazama AVR Programmer and eXtreme Burner. Both software include driver in the installed folder.

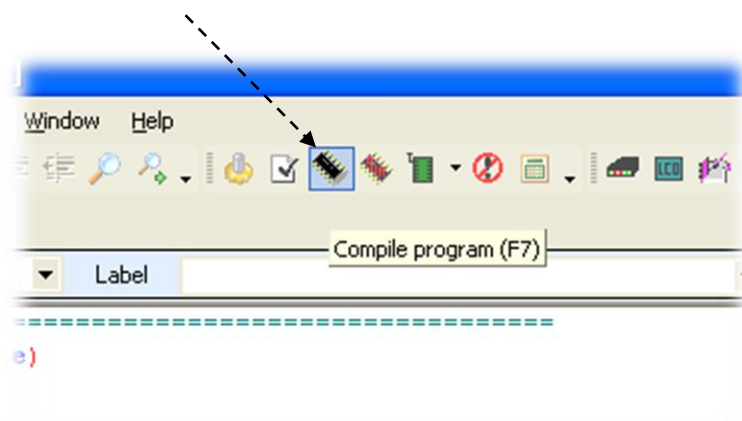
If your compiler support USBasp programmer you needn't any other software to program your target microchip.

For example BASCOM-AVR compiler supports USBasp programmer. Just follow next steps to compile and burn your firmware in the same IDE.

### Step1:

Open BASCOM-AVR compiler and write your firmware. Compile your code before try to burn it. Press "F7" or click "Compile Program" red icon in the tool bar.

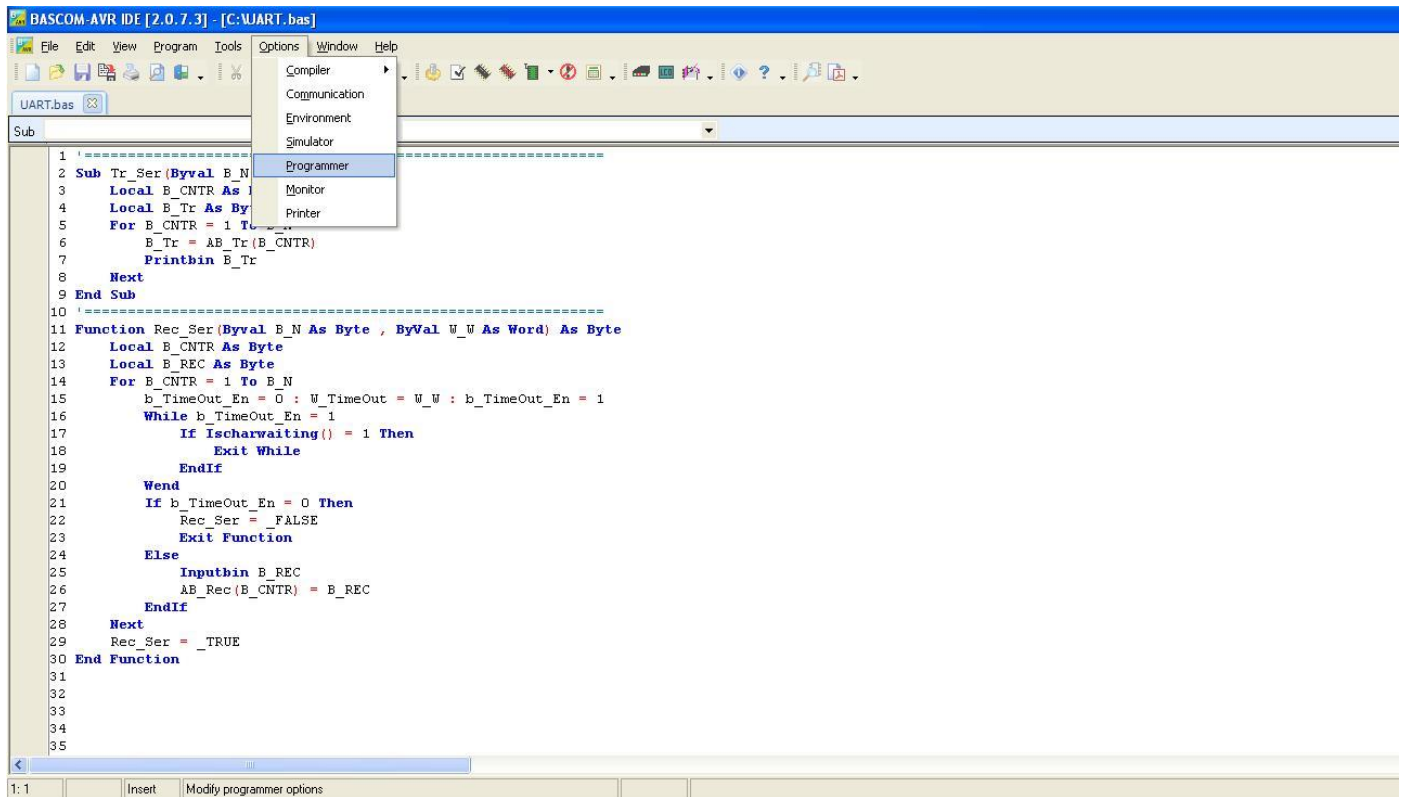
Compile Program icon





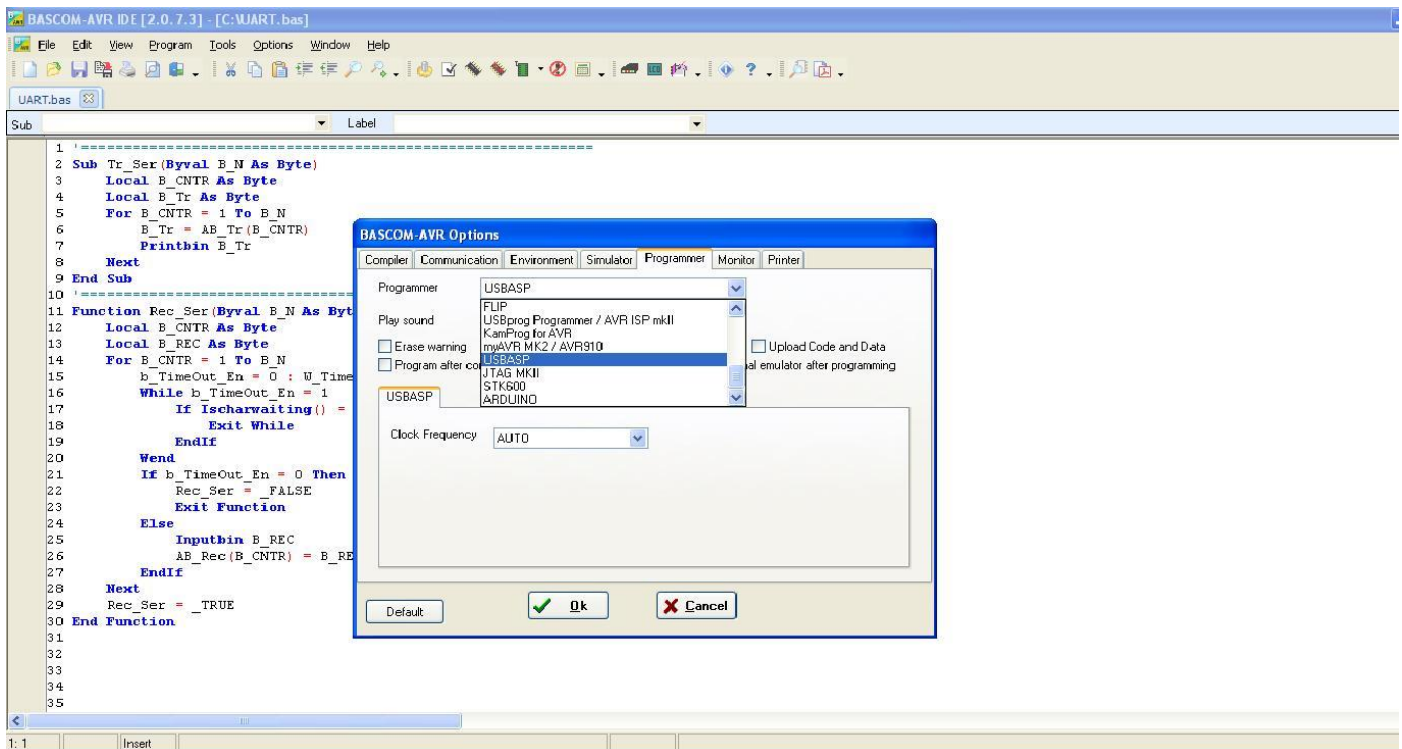
## Step2:

Go to (options – Programmer)



## Step3:

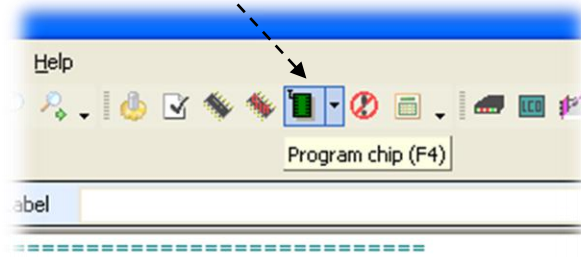
Select USBASP from programmer list and set your preferred options and click “OK” button.



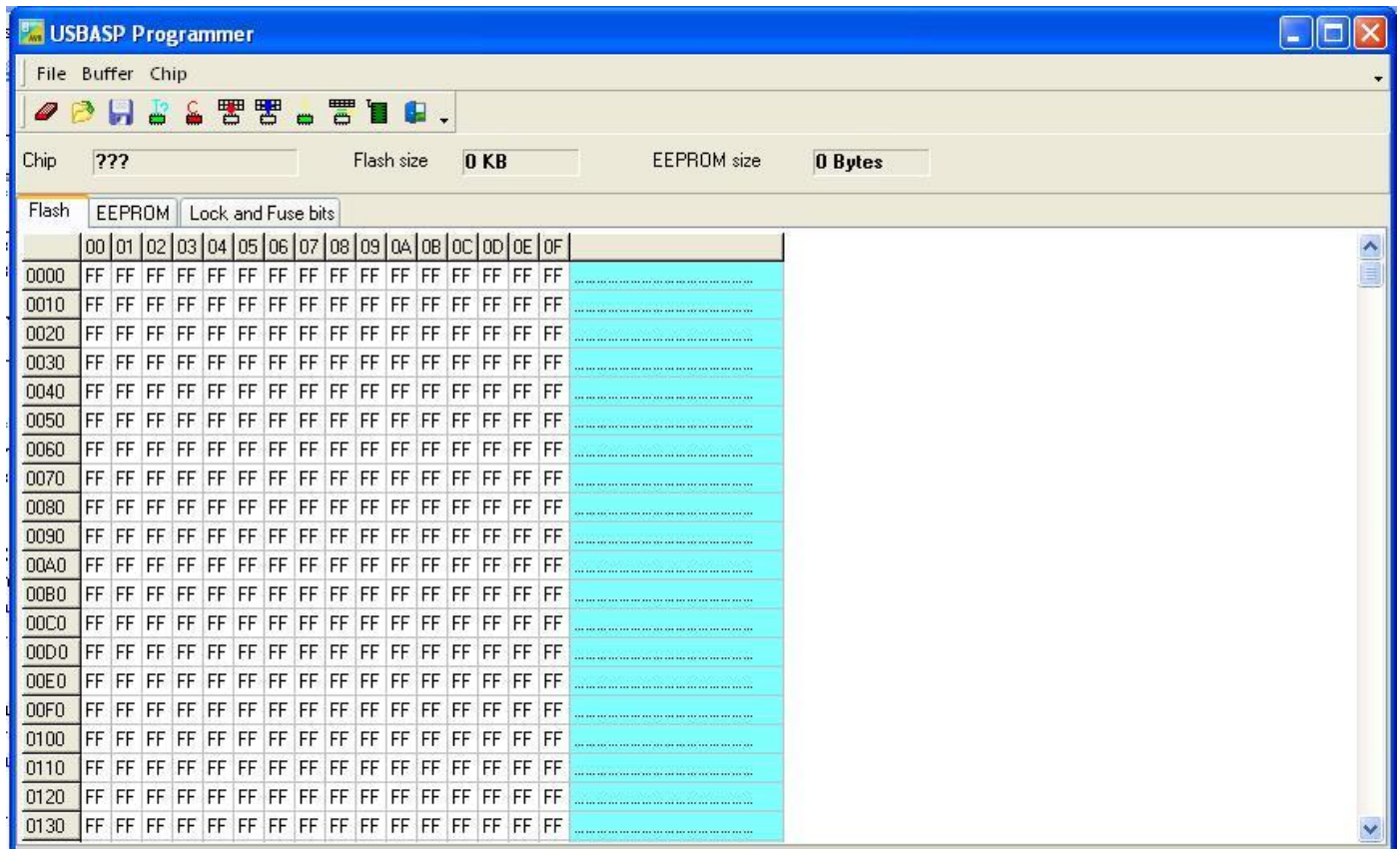
#### Step4:

Press “F4” or click “Program chip” green icon in the tool bar. USBASP interface will open.

Program chip icon



USBASP interface





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