

RP6 ROBOT SYSTEM RP6 M256 WIFI BOOTLOADER

DEFAULT FUSE BIT SETTINGS

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!!! WARNING !!!

**Incorrect Fuse Bit settings can
cause serious problems!**

We created a Bootloader for user program upload for GOOD REASONS! This makes it easier for you and you will not run into trouble as you can not mess up the Fuse Bits. For the RP6M256 it is essential for flashing via WLAN, this will not work without the Bootloader.

If you do not have VERY GOOD REASONS to erase the Bootloader, do not do it!

Nevertheless, if you are sure that you want to erase the Bootloader and use ISP Programming, you can still contact our Support for assistance.

Please note: First, turn off the power. Then remove any microSD Card from the slot! Now you have to set the ISP/BOOT Jumper to the ISP position. Then connect the cable with CORRECT ORIENTATION! Then turn on power and start flashing. Afterwards turn off power, remove the cable, set Jumper back to BOOT position and try if it works.

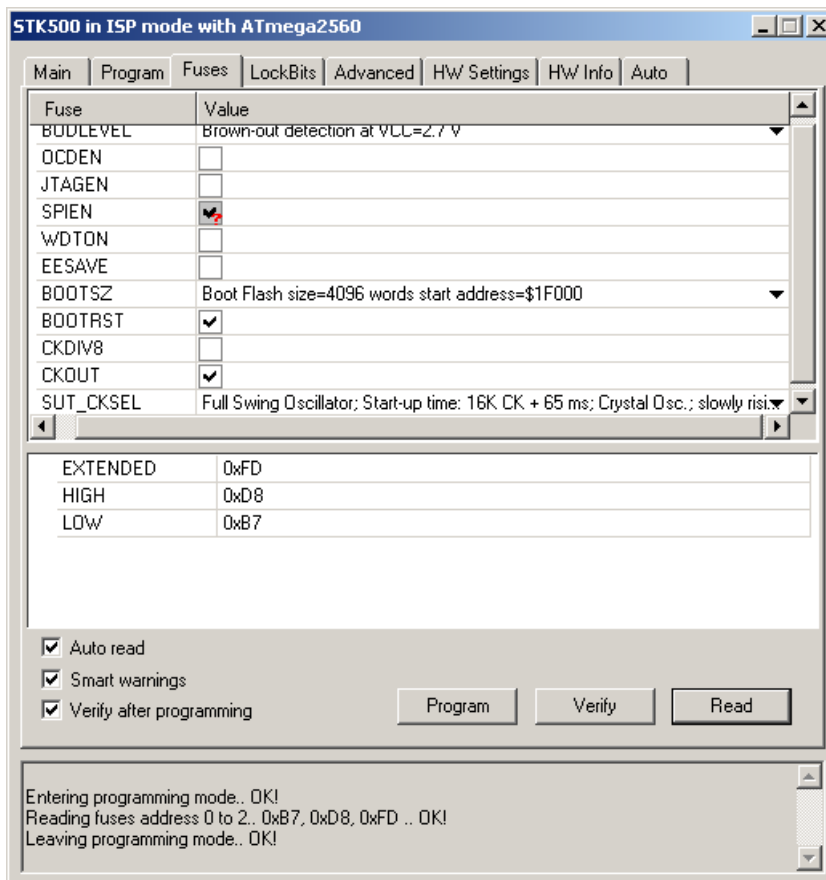
You should use only official ATMEL Tools to program the AVR via ISP. We recommend STK500/AVRISP along with AVRStudio.

Better do not use Ponyprog or similar tools if you have no prior experience with it!
The settings are very very often misunderstood in these tools!

**Settings for restoring
the ORIGINAL BOOTLOADER**

1. Fuse Bits

Screenshot of AVR Studio with STK500 Programmer:



YOU HAVE TO MAKE SURE THAT THE FUSEBIT SETTINGS ARE CORRECTLY AS FOLLOWS:

Fuse Bits Low Byte: 0xB7

Fuse Bits High Byte: 0xD8

Fuse Bits Extended Byte: 0xFD

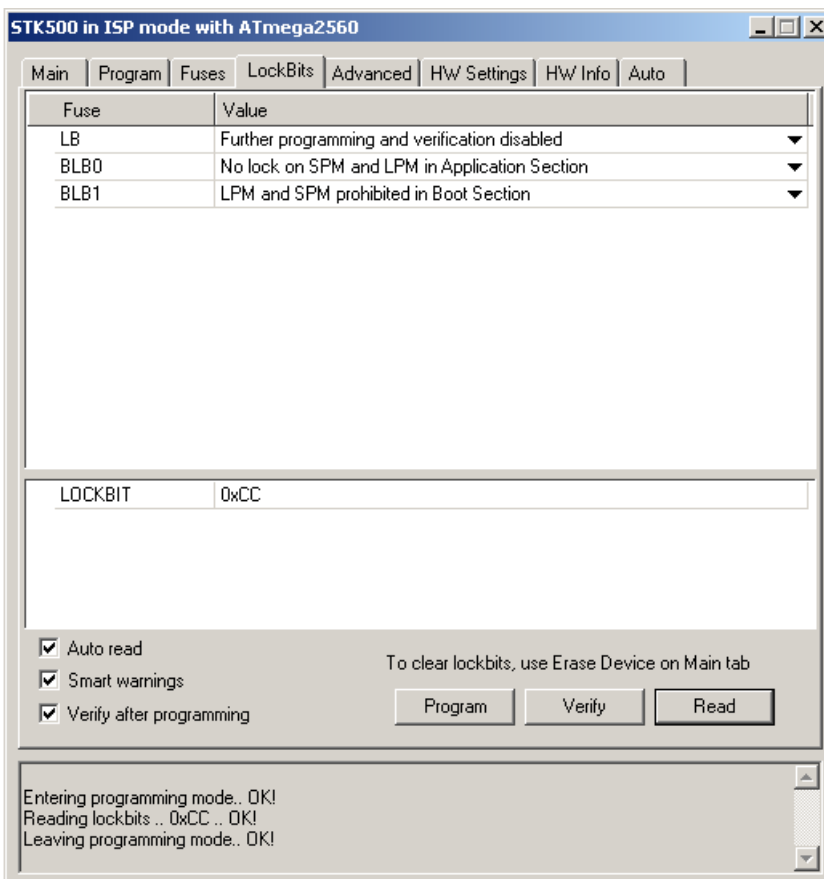
Lock Bit Byte: (s. next page)

(All these values are hexadecimal values!)

In other words:

- Brown out detection is enabled at 2.7V
- JTAG DISabled
- Watchdog DISabled
- EESAVE DISabled
- SPI Programming is enabled (*can not be changed when using ISP Interface*)
- CKOUT is ENabled
- CKDIV8 DISabled
- Bootblock size is 4096 words (8192 Bytes)
- Boot reset vector is ENabled
- **SUT_CKSEL: Full Swing Oscillator is enabled with long startup time (8-16MHz, 16K Startup + 65ms, Crystal Osc. Slowly rising power)**

2. Lock Bits:



Lock Bit Byte: 0xCC

In other words:

Further programming and verification is **disabled**

LPM and SPM are allowed in **Application section**

LPM and SPM are **not allowed** in **Bootloader section**

Please note that flashing via WLAN will NOT work without the RP6 M256 Bootloader!

If you really do not want to use the RP6 M256 Bootloader or want to use no Bootloader at all, you may have to adjust these Settings.

You do not need to set the Lock Bits if you do not use a Bootloader and you also HAVE TO disable the Boot Reset Vector. The rest of the settings can be used as shown above. For other Bootloaders you may have to use different settings!

Always make sure that the Oscillator settings are correct! Otherwise you may not be able to program the AVR anymore and it will stop working!