XLR8 Bluetooth Programming Guide

Electronics Club

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About

This guide describes the programming of ATtiny 2313A on XLR8 Bluetooth receiver Module.
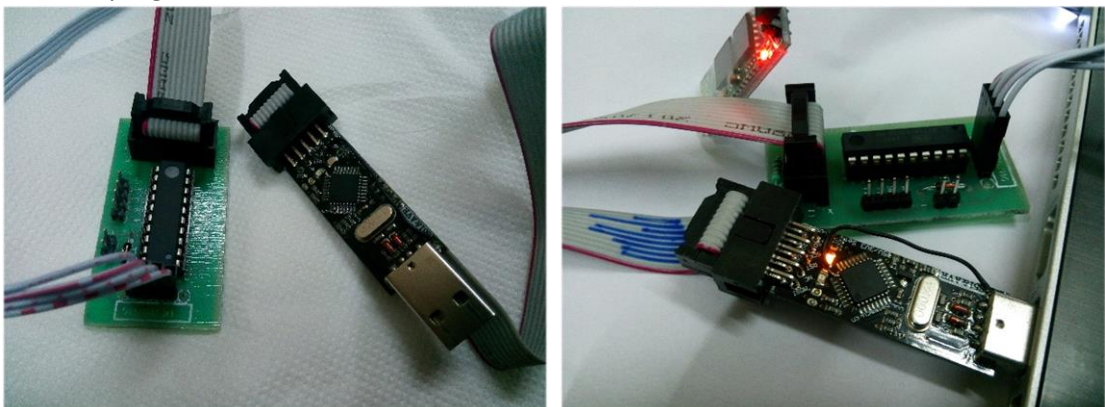
Requirement

- Hardware
  - USB ASP Programmer with slow clock option
- Software
  - UsbASP
    - Download the latest drivers for usbasp from http://www.fischl.de/usbasp/ or exactly (http://www.fischl.de/usbasp/usbasp.2011-05-28.tar.gz)
  - Avrdude
    - Windows : WinAVR (easy install of avrdude) (http://sourceforge.net/projects/winavr/files/)
    - Linux : directly install avrdude (http://ubuntuhandbook.org/index.php/2014/09/install-avrdude-6-1-ubuntu-1404/)
    -
  - Raw Program file (HEX file) [available at https://github.com/ajinkyagorad/XLR8_Receiver/blob/master/XLR8_module/Debug/XLR8_module.hex]
    - Download by clicking on 'Raw' and Ctrl+S to desired location (desktop)

Steps for software

- Install WinAVR (Windows)/ avrdude (Linux)
- Install drivers for usbasp (windows)
  - Windows 8+ refer (https://openchrysalis.wordpress.com/2014/09/26/installing-usbasp-driver-software-in-windows-8-1/)

Steps

- Connect programmer with PC & with the XLR8 module

- Set programmer to slow clock (if jumper available) (otherwise follow debugging)
- Open terminal and cd to directory where hex file is downloaded
  cd <directory_path>
  eg : cd Desktop

- Type following in terminal
  avrdude –c usbasp –p attiny2313 –U flash:w:XLR8_module.hex

General format here is
  avrdude –c <programmer > -p<partNo> -U<memtype>:<read/write/verify>:<filename>

- If everything is connected and all things are good , the IC will get programmed

```
C:\Users\Ajinkya\Desktop>avrdude –c usbasp –p attiny2313 –U flash:w:XLR8_module.hex

avrdude: AVR device initialized and ready to accept instructions

Reading | ################################################## | 100% 0.03s

avrdude: Device signature = 0x1e910a
avrdude: NOTE: FLASH memory has been specified, an erase cycle will be performed
         To disable this feature, specify the -D option.
avrdude: erasing chip
avrdude: reading input file "XLR8_module.hex"
avrdude: input file XLR8_module.hex auto detected as Intel Hex
avrdude: writing flash (124 bytes):

Writing | ################################################## | 100% 1.09s


avrdude: 124 bytes of flash written
avrdude: verifying flash memory against XLR8_module.hex:
avrdude: load data flash data from input file XLR8_module.hex:
avrdude: input file XLR8_module.hex auto detected as Intel Hex
avrdude: input file XLR8_module.hex contains 124 bytes
avrdude: reading on-chip flash data:

Reading | ################################################## | 100% 0.56s


avrdude: verifying ...
avrdude: 124 bytes of flash verified

avrdude: safemode: Fuses OK

avrdude done.  Thank you.
```

Debugging

- It shows the following error

```
C:\Users\Ajinkya\Desktop>avrdude –c usbasp –p attiny2313 –U flash:w:XLR8_module.hex
avrdude: error: could not find USB device "USBasp" with vid=0x16c0 pid=0x5dc
```

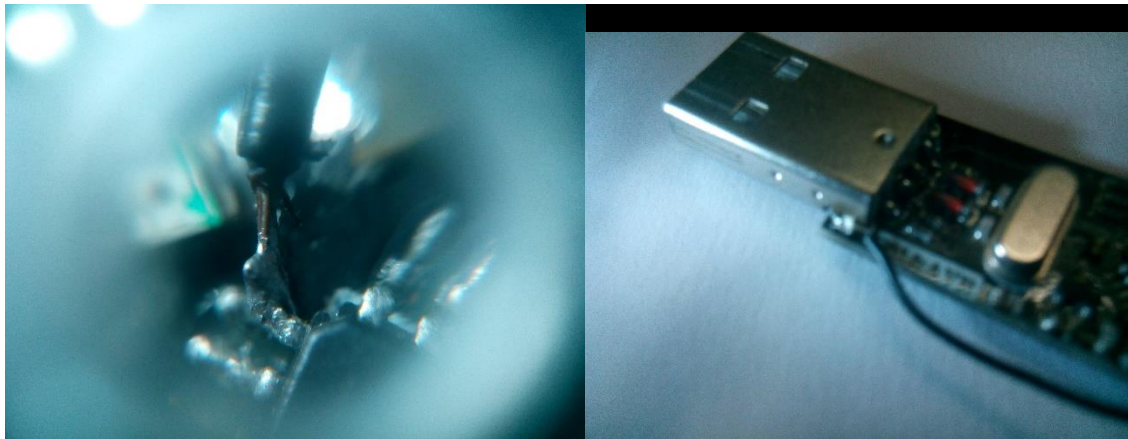 - Make sure usbasp is connected to PC & drivers are installed
- It shows following error

```
avrdude: error: programm enable: target doesn't answer. 1
avrdude: initialization failed, rc=-1
        Double check connections and try again, or use -F to override
        this check.

avrdude done.  Thank you.
```

  - Make sure u have selected **slow clock** by setting a jumper (if jumper not available , follow next)
  - Check connections to Board
  - Make sure soldering does not short the programming connections

- Make connections by connecting PC2 pin of atmega8 on usbasp to ground
- (u may look at http://txyzinfo.blogspot.in/2012/11/how-to-program-attiny2313-with-usbasp.html)

Closeup View of wire