Hi !

As many user ask me how to burn a genuine firmware of HM-10 on the CC41 board (which is a copy with less possibility), I have decided to write a tutorial.

Normally you must bought the "CC debugger" from TI for flash CC2541 chips, but it's also possible to use an Arduino as a programmer !

- - Required - -

Hardware

- Arduino (uno, pro mini...)
- USB to TTL converter for connect Arduino to the PC (in case of arduino pro mini or similar)
- CC2541 board: HM-10, CC41...
- Some wire
- Optionnaly a soldering iron

Software

- Arduino's IDE
- CCLoader Arduino sketch: link
- CCloader Windows programm: link
- HM-10 Firmware*: link

*You need the full firmware, not the firmware provided by the manufacturer as this firmware is only usefull for UPGRADE a genuine HM-10 wich have already a bootloader.

- - Step - -

1. You need to upload the CCloader sketch on your Arduino, using the Arduino's IDE
    - Open the sketch with the IDE
    - Check if the parameters in Tool's menu are correct: board, processor, com port
    - Upload the sketch to the Arduino's board

2. Now you need to wiring the HM-10/CC41 board to the Arduino as follow

Name	CC2541	Arduino
DEBUG_CLOCK	Pin 7	Pin 5
DEBUG_DATA	Pin 8	Pin 6
RESET_N	Pin 11	Pin 4

And also provide Vcc and GND to the CC2541.

Be carreful, the standalone CC2541 board is not 5V tolerant ! Vcc is 3.3V and digital pin is also 3.3V.

Some HM-10 breakout have 5V/3.3V regulator, so you can use the 5V of the Arduino for supply the board. If you

use 5V arduino (uno and similar) you need a voltage converter (not a voltage divider with some resistors) for digital pin)

Pinout of HM-10 standalone: see attachment

For the wiring you can solder wire to the pins or harder, you can use dupont wire and manually hold the wires on the pads (At the beginning it's difficult but is doable)

3. Now all is ready, you can burn the HM-10 firmware using Windows's CCloader.exe
   - Open a command prompt and navigate to the folder where CCloader.exe are located (cd /d C:\the\directory)
   - Write and execute this command: CCLoader.exe <COM Port> <Firmware.bin> 0
     (You must put the .bin firmware file in the same directory as CCloader.exe
   - Wait ...

All is done ! your CC2541 board have now a genuine HM-10 firmware !
For future update, the procedure are easier as you can now update the HM-10 via an USB to Serial converter, the firmware and the procedure are on the manufacturer website: www.jnhuamao.cn

Important: The hardware between an HM-10 and a CC41 are not the same, on CC41's boards, an externel crystal is missing. Normaly no problem with the HM-10 firmware, as the manufacturer say, the firmware check if the crystal is missing or not and use internal crystal instead.

Some links:
CC2541 Datasheet
Manufacturer's website

Thanks to:
https://github.com/bjoerke/HM-10-Firmware/wiki/flash-firmware
https://github.com/RedBearLab/CCLoader
And a German man for the firmware.

(Sorry for my english.... I'm French and doesn't speak English every day)