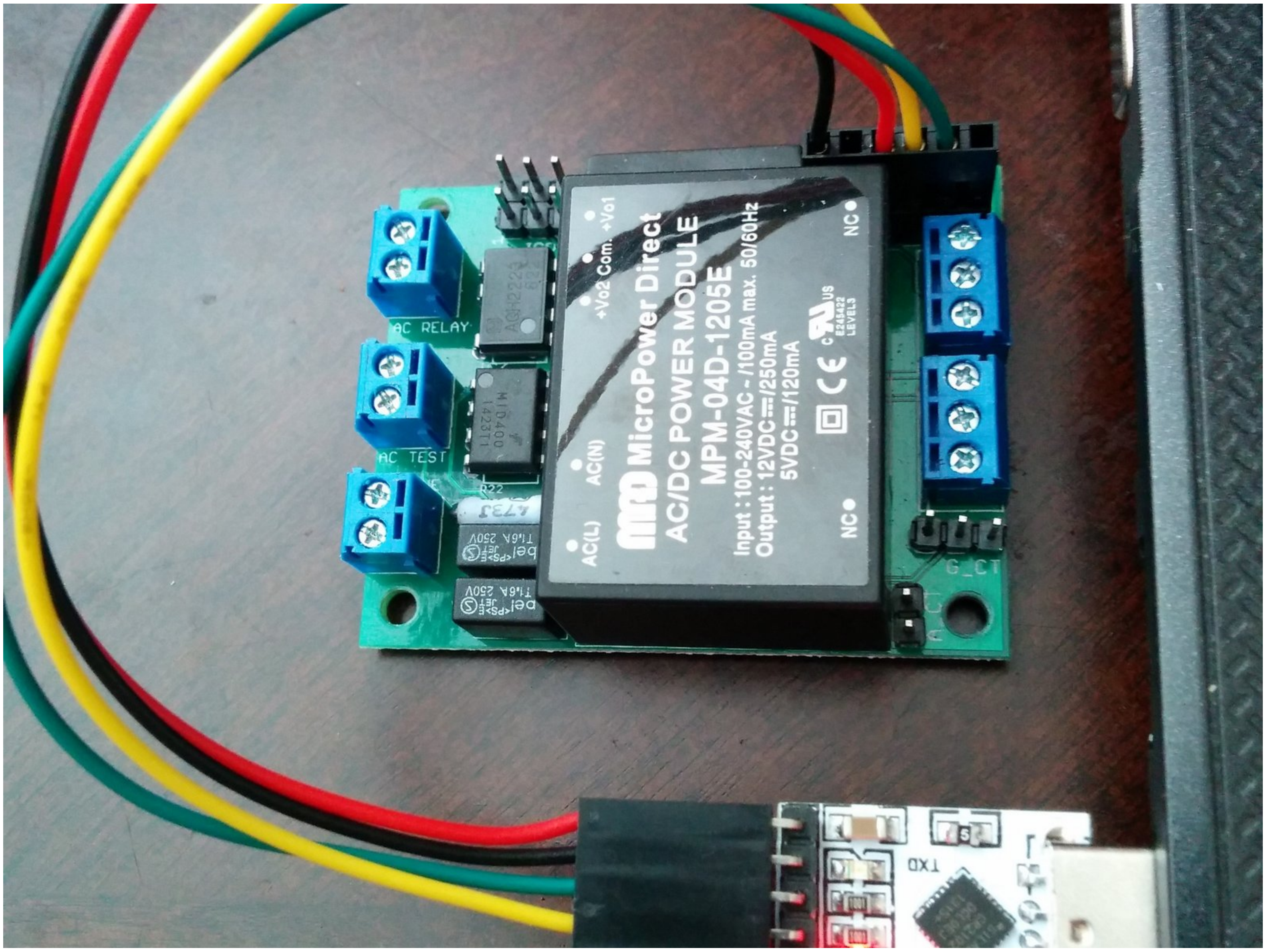
OpenEVSE

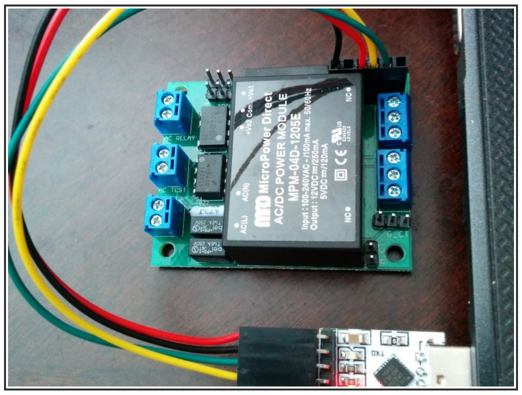
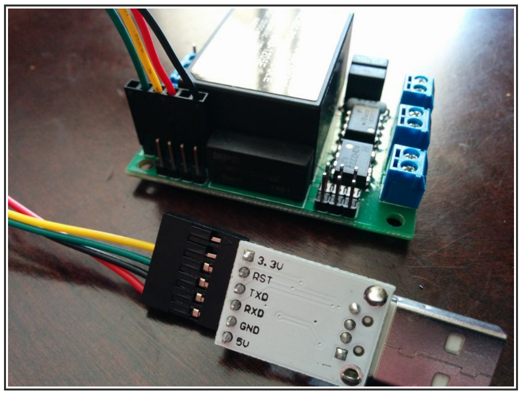
Serial Communications with OpenEVSE

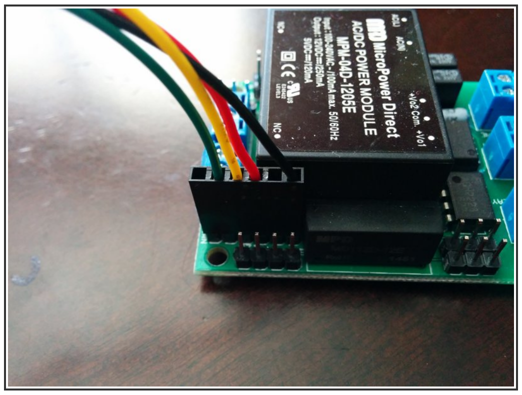
OpenEVSE has included serial communications for the life of the project. Early versions of firmware supported a Command Line Interface (CLI) newer versions include a Remote API.

Written By: Christopher Howell



Step 1 — Hardware

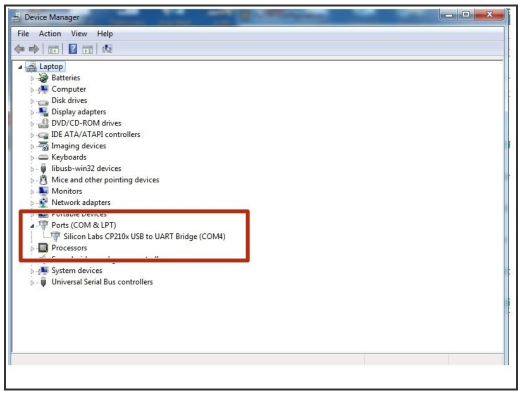



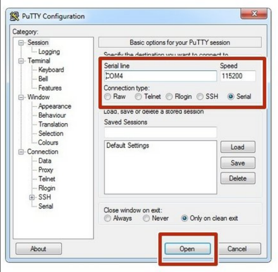


- OpenEVSE supports many Serial TTL Devices at 5v on the 6 pin header.
- The header is the common FTDI format.
  - Pin 1 - Ground (Black)
  - Pin 2 - No Connection
  - Pin 3 - 5v (Red) - **75ma max** Higher power devices must use external power.
  - Pin 4 - Recieve (Yellow) connects to transmit on the remote device.
  - Pin 5 - Transmit (Green) connects to receive on the remote device.

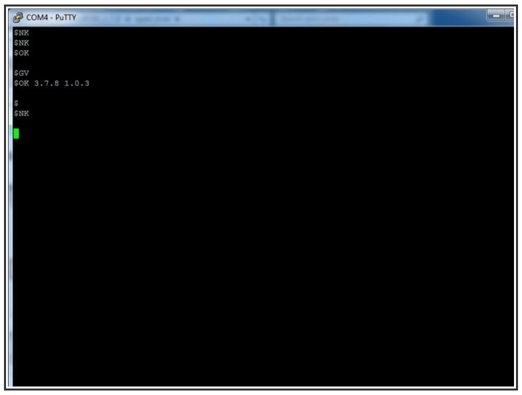
It is recommended to update the latest version of firmware. Many changes have been made over time. This guide was written with Firmware version 3.7.8.

Step 2 — USB-TTL - Serial Console





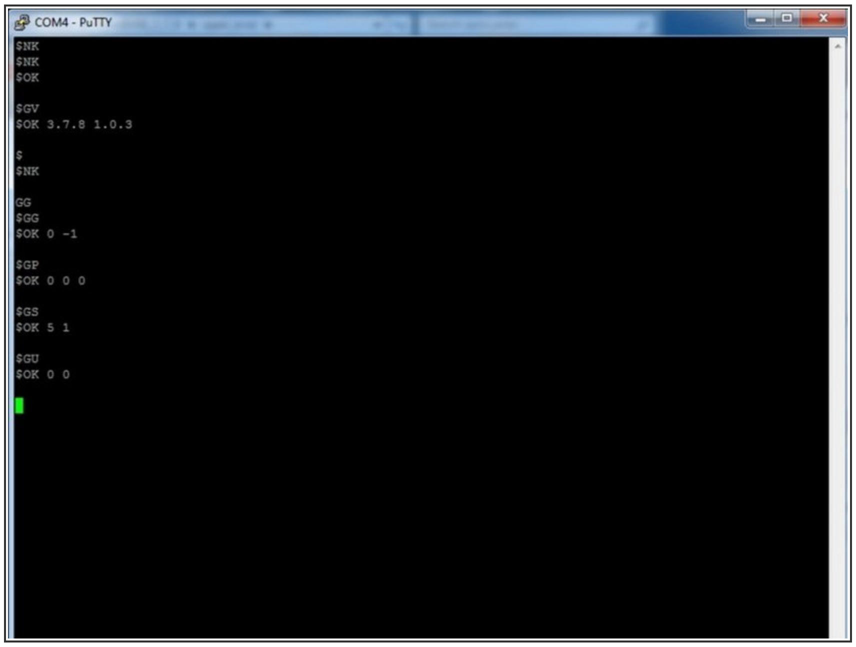
Specify the destination you want to connect to
Serial line: COM4
Speed: 115200
Connection type: Raw Telnet Rlogin SSH [✓ Serial]
Load, save or delete a stored session
Saved Sessions
Default Settings
Close window on exit: Always Never [✓ Only on clean exit]


COM4 - PuTTY

```
$NK
$NK
$OK

$GV
$OK 3.7.8 1.0.3

$
$NK
```

- Insert the serial to USB adapt or and install the appropriate driver
  - The windows driver for the adaptor sold in the OpenEV store is here: [Windows Driver]
- Using a terminal console (PuTTY recommended) set the COMM port to the USB-TTL adapter and the baud rate to 115200. Then click Open.
  - If you do not know the comm port you can go into the Device manager and look under Ports.
- In the console window enter $ and press enter. You should receive a $NK response.
- Next enter $SE 1. This will turn on local echo so you can see what you send. The response should be $OK.
- Now enter the command $GV. The response should be $OK followed by the Firmware version and the Remote API version.

Step 3 — Remote API Get commands

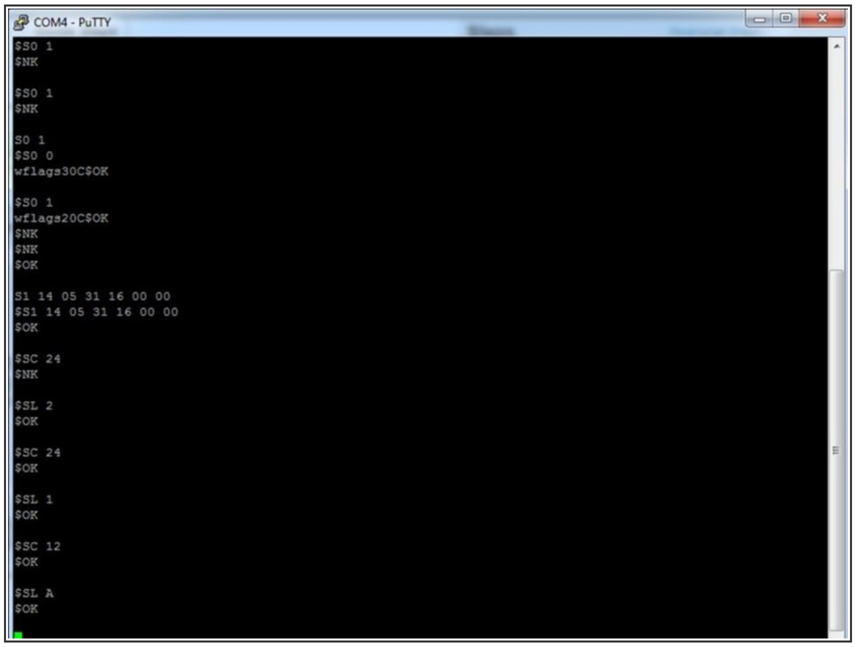


```
$NK
$NK
$OK

$GV
$OK 3.7.8 1.0.3

$
$NK

GG
$GG
$OK 0 -1

$GP
$OK 0 0 0

$GS
$OK 5 1

$GU
$OK 0 0
```

⚠ Full documentation of the Remote API is located in the rapi_proc.h file in the OpenEVSE Source code. The file is located here: [rapi_proc.h]

- The Remote API is a very powerful tool for extending OpenEVSE, useful for information, configuration and external applications.
- Here are some interesting Get commands:
  - $GG - Get real time charging current. Returns $OK current voltage(future hardware)
  - $GP - Get real time Temprature values from RTC chip, MCP9808 and TMP007 IR sensors. Returns $OK RTC, MCP9808, TMP007 - 0 is returned if sensor is not found.
  - $GS - Get EVSE State. Returns the current state $OK State - 1 Not Connected - 2 Connected - 3 Charging - 4 Error - 5 Error.
  - $GU - Get usage statistics. Returns $OK Energy used last session and lifetime

Step 4 — Remote API Set Commands



```
$S0 1
$NK

$S0 1
$NK

S0 1
$S0 0
wflags30C$OK

$S0 1
wflags20C$OK
$NK
$NK
$OK

S1 14 05 31 16 00 00
$S1 14 05 31 16 00 00
$OK

$SC 24
$NK

$SL 2
$OK

$SC 24
$OK

$SL 1
$OK

$SC 12
$OK

$SL A
$OK
```

Full documentation of the Remote API is located in the rapi_proc.h file in the OpenEVSE Source code. The file is located here: rapi_proc.h

- The Remote API is a very powerful tool for extending OpenEVSE, useful for information, configuration and external applications.
- Here are some interesting Set commands:
  - $SC amp - Set current value in amps. Subject to Mix and Max for each setting min 6A Max 80A.
  - $SL 1 or 2 or A - set service level L1 /L2 / Auto
  - Tip you can set Service level 1 set current for L1 then set Service Level 2 and set current. Each has its own setting.
  - S1 yr mo day hr min sec - Set current time 2 digit value for each hour 24 hour value.
  - $S0 0 or 1 - Set LCD Type 0 = Monochrome 1 = RGB.

This document was generated on 2021-12-21 04:42:03 AM (MST).

Step 5 — External Communications

- OpenEVSE can be extended with many devices using 5v TTL (or 3.3v with level shifting).

External power is required if device draws more than 75ma at 5v.