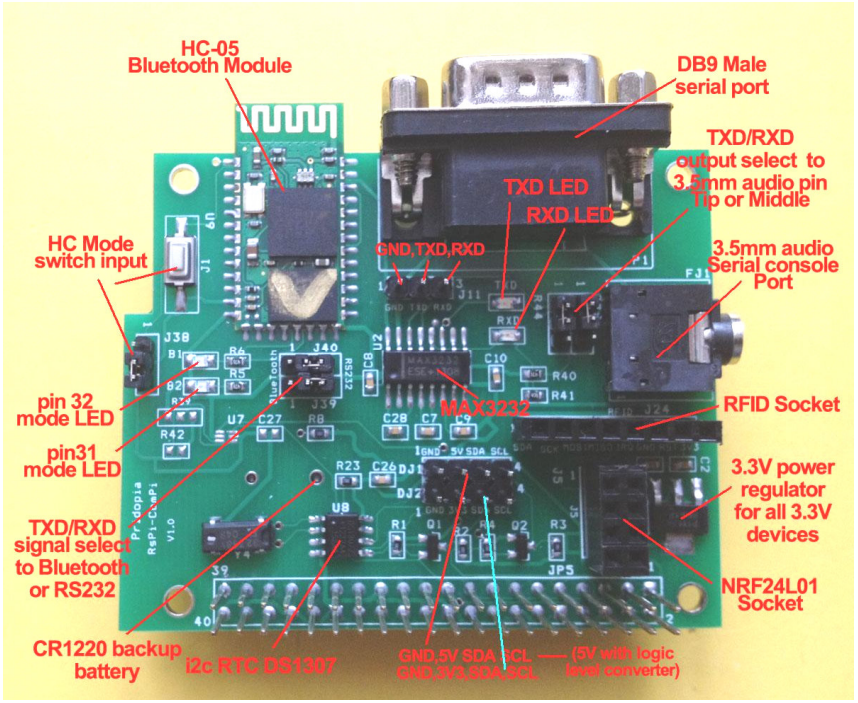
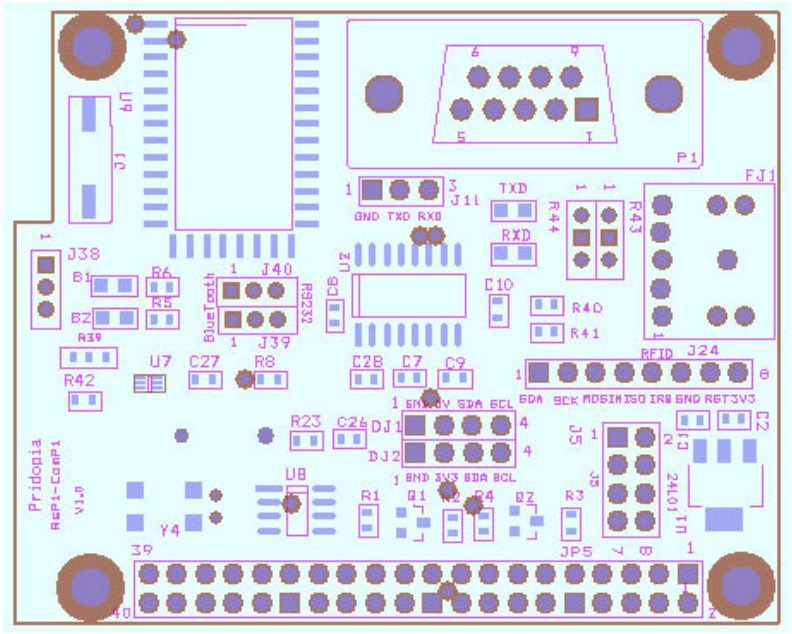
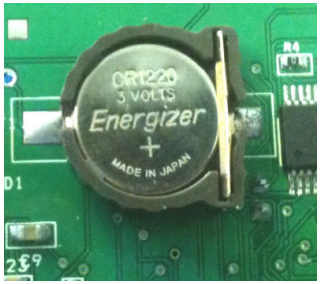
Rs-Pi RTC & COM Port board User Manual





Raspberry Pi - RS232 COM & Serial console Board

1. provide DB9 male COM port
2. provide i2c DS1307 RTC with CR1220 bauk-up battery
3. provide RFID socket (SPI signal) / NRF24L01 socket (SPI signal)
   you can choose use RFID or NRF24L01 (both use SPI signal)
4. Provide 2 extra i2c device input port, one for 3.3V, one for 5V (with Logic Level converter)
5. provide 3.3V power Regulator for 3.3V device (RFID/ NRF24L01) i2c device
6. provide 3.5mm serial console cable socket,
7. provide jumper setting can change 3.5mm output TX, RX position.



First Install battery for RTC , " + " mark on top

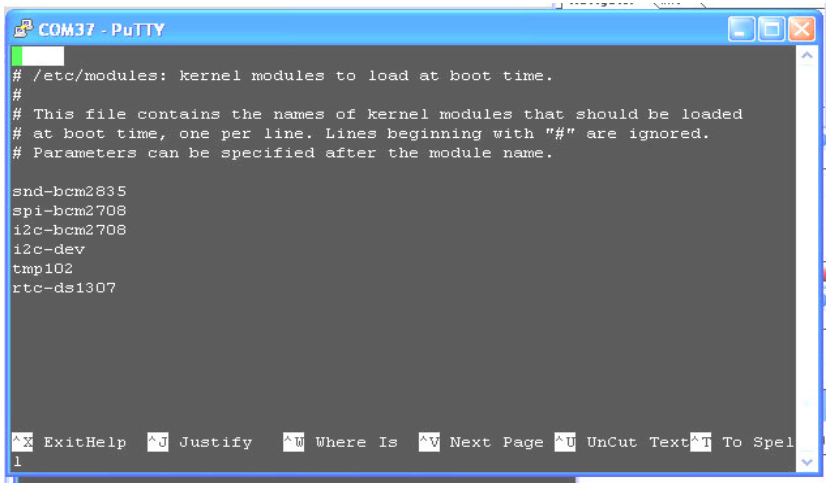
RTC DS1307 - 68 in i2cdetect –y 0 or i2cdetect –y 1 for Rs-Pi V2 you will see 68 in the screen 68 -> RTC DS1307

This requires a Raspberry Pi running a kernel with the RTC module and DS1307 module included.

then, load up the RTC module by running
sudo modprobe rtc-ds1307
Then, as root (type in **sudo bash**) run
echo ds1307 0x68 > /sys/class/i2c-adapter/i2c-0/new_device (if you have a rev 1 Pi)
echo ds1307 0x68 > /sys/class/i2c-adapter/i2c-1/new_device (if you have a rev 2 Pi)

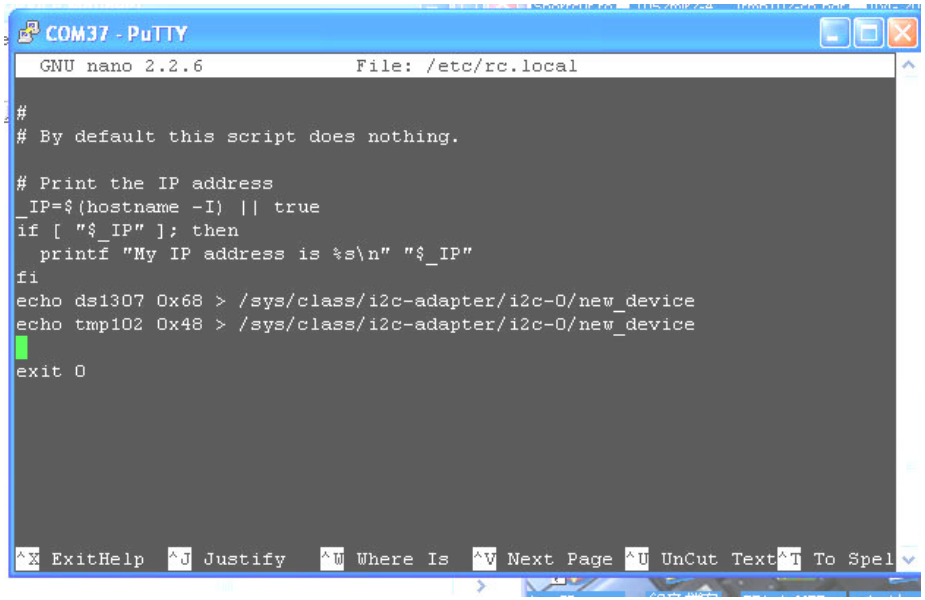
hwclock –r **read time**
hwclock –w **write time in RTC**
hwclock –s **write time in System**
hwclock --set --date="2013-08-21 08:00:12" --utc
write in custom Time in RTC

you'll want to add the RTC kernel module to the /etc/modules list, so its loaded when the machine boots. Run **sudo nano /etc/modules** and add **rtc-ds1307** at the end of the file



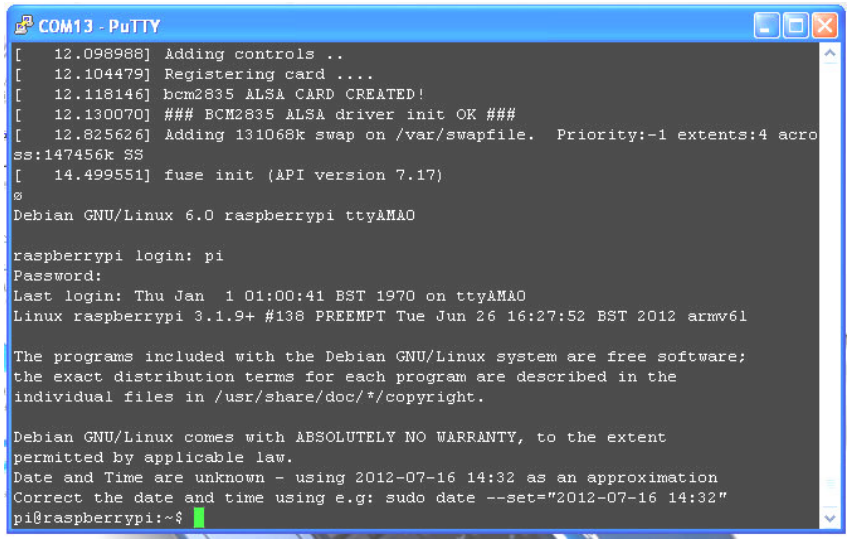
Then you'll want to create the DS1307 device creation at boot, edit /etc/rc.local by running
sudo nano /etc/rc.local

and add **echo ds1307 0x68 > /sys/class/i2c-adapter/i2c-0/new_device** before **exit 0**

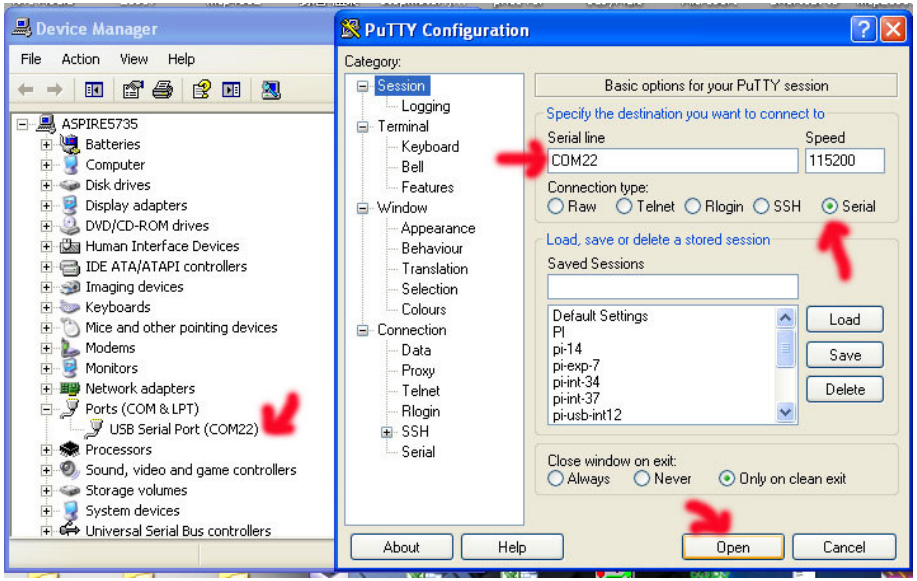


The necessary settings are:

- **Speed: 115200 baud Data bits: 8 Stop bits: 1**
- **Parity: None Flow control: None**



In PuTTY



Setting in Putty

Raspberry Pi Serial Port Usage

The serial port on the Raspberry Pi is configured as default for console input/output. This allows you to login and interact with the Raspberry Pi via the serial port but you cannot use the serial port with your programs.
To use the serial port with other programs and hardware such as modems, arduino boards etc you need to disable the console login.

To Disable Serial Port Login

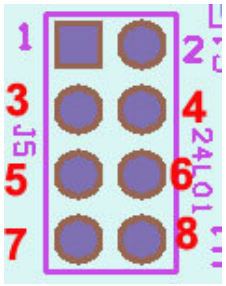
You need to edit two files in order to use the serial port with your own programs.
When the Raspberry Pi boots, the bootup information is sent to the serial port. You can disable this by editing the/**boot/cmdline.txt** file
The contents of the file look like this
dwc_otg.lpm_enable=0 console=ttyAMA0,115200 kgdboc=ttyAMA0,115200 console=tty1 root=/dev/mmcblk0p2 rootfstype=ext4 elevator=deadline rootwait
Remove all references to ttyAMA0 so the file looks like this:
dwc_otg.lpm_enable=0 console=tty1 root=/dev/mmcblk0p2 rootfstype=ext4 elevator=deadline rootwait
Save the file to save your changes.
The second file to edit is **/etc/inittab**
Edit using: **sudo nano /etc/inittab**
The /etc/ inittab file has the command which enables the login prompt which needs to be disabled.
Near the end of the file will be a line similar to this:
respawn:/sbin/getty -L ttyAMA0 115200 vt100
Disable this line by adding a # character to the beginning.
#respawn:/sbin/getty -L ttyAMA0 115200 vt100
Save the file.
You should then reboot your raspberry pi with the following command

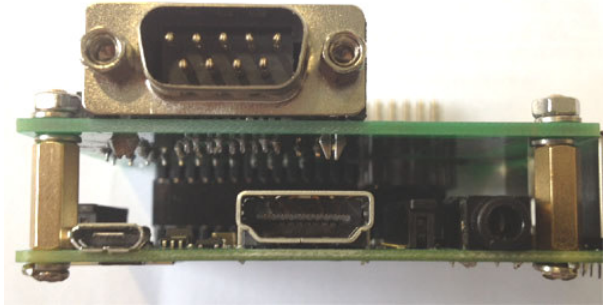
sudo shutdown -r now

You can now use your serial port with other applications on your Raspberry Pi.

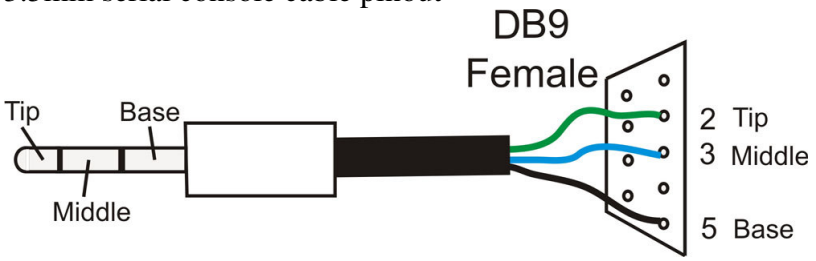
RFID socket
From pin1 (SDA,SCK,MOSI,MISO,IRQ,GND,RST,3V3

NRF24L01 socket
From pin1 (GND,3V3,GPIO25,CE0,SCLK,MOSI,MISO,X)





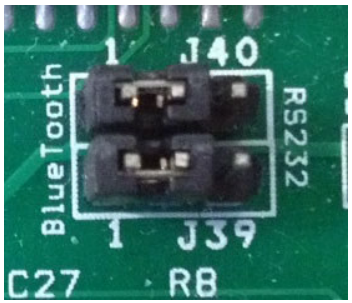
3.5mm serial console cable pinout

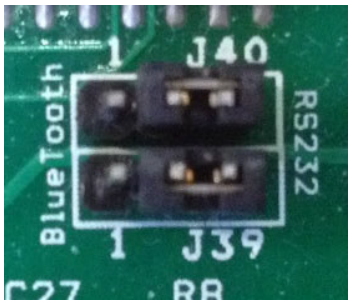


Detail information

http://www.pridopia.co.uk/pi-com-bt-bp.html

*. Pi Setting serial console port for bluetooth





If you use RS232 or COM port change setting to RS232

If you need use Bluetooth change the RXD-TXD to Bluetooth

Step 1. Modify the inittab File:

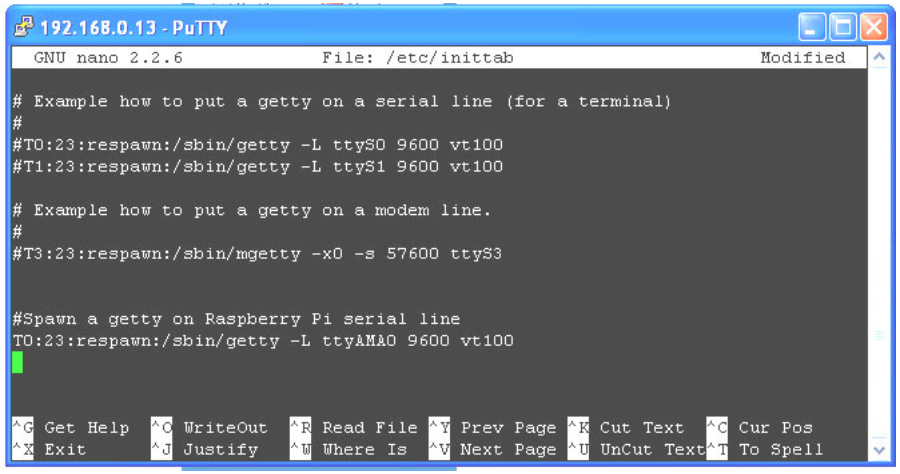
At a terminal command prompt issue this command:
sudo nano /etc/inittab

Look near the end of the file and find the lines that look like this:

#Spawn a getty on Raspberry Pi serial line
T0:23:respawn:/sbin/getty -L ttyAMA0 115200 vt100

change to

#Spawn a getty on Raspberry Pi serial line
T0:23:respawn:/sbin/getty -L ttyAMA0 9600 vt100



Step 2.

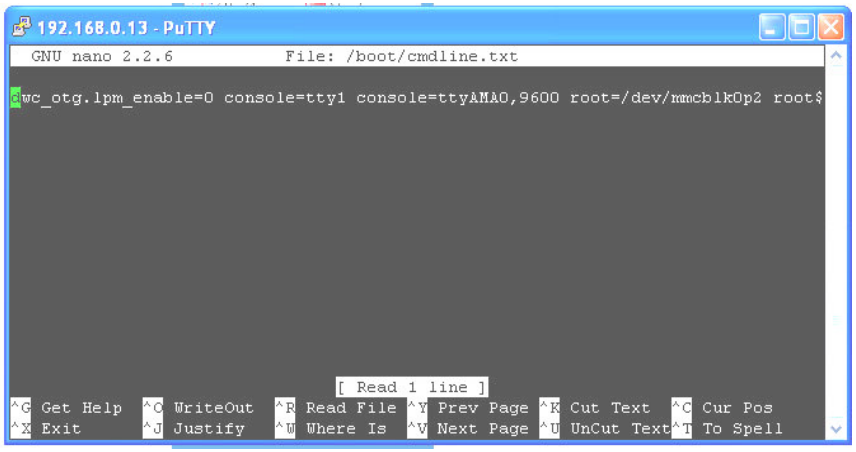
sudo nano /boot/cmdline.txt

The entire contents of the file look like this:

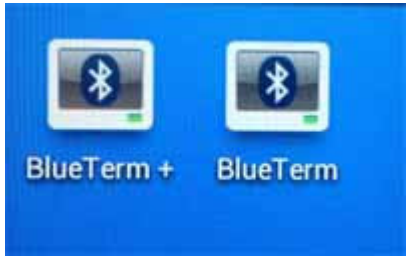
dwc_otg.lpm_enable=0 console=ttyAMA0,115200 kgdboc=ttyAMA0,115200 console=tty1 root=/dev/mmcblk0p2 rootfstype=ext4 elevator=deadline rootwait

change to

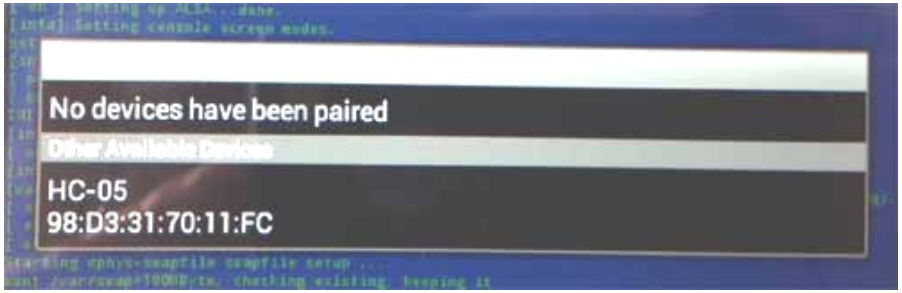
dwc_otg.lpm_enable=0 console=ttyAMA0,9600 kgdboc=ttyAMA0,9600 console=tty1 root=/dev/mmcblk0p2 rootfstype=ext4 elevator=deadline rootwait



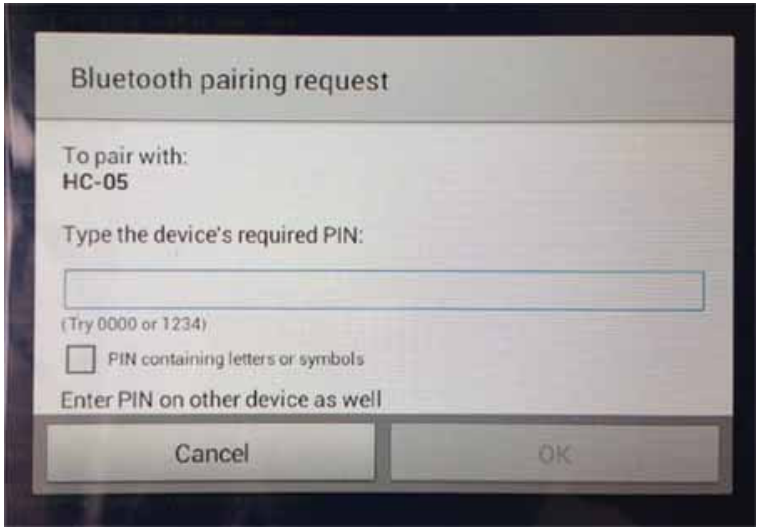
Step 3 .Bluetooth setting for console port



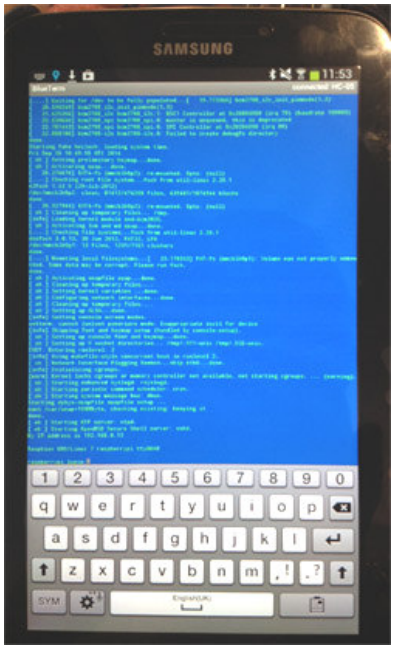
use Android Tablet BlueTerm+ or BlueTerm



find "HC-05" bluetooth device



input pin "1234" for pair



you will see raspberry pi boot from Android Tablet screen

B2 LED flashing, B1 always On