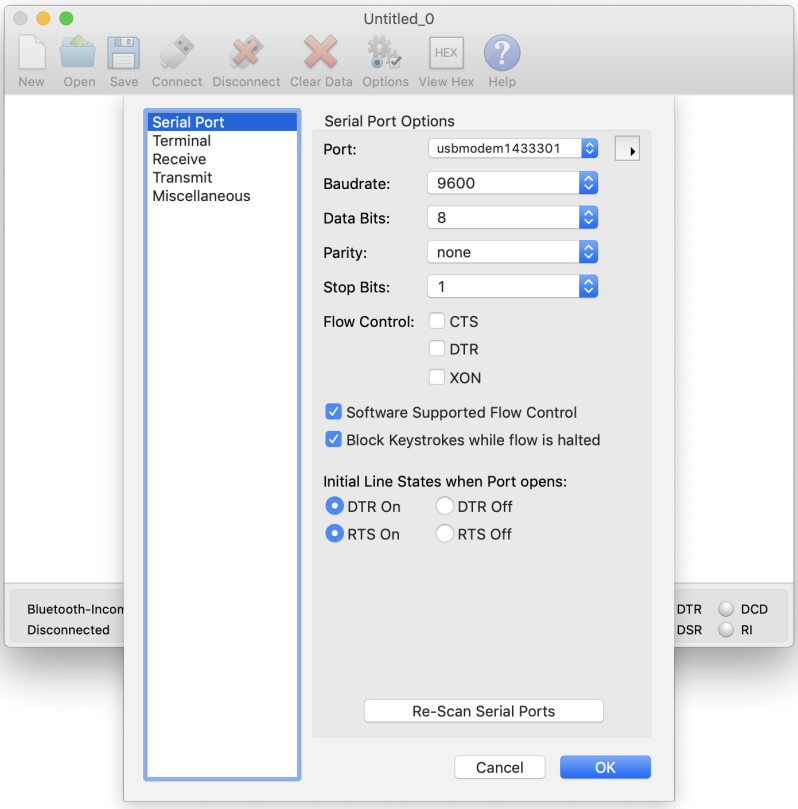
Instructions for Interfacing to the Outdoor Controller Software V1.0

This software running on the outdoor controller has a simple command line interface which is accessible by running a Terminal program on the host computer which communicates via a UART serial interface using the COM or virtual serial port on the host computer. This interface is compatible with any Terminal emulation program which can access the virtual COM port provided by a USB-> virtual COM interface on a Macintosh or Windows computer

One of the better Terminal programs is Coolterrm. It's free and available for Macintosh, Windows, or Linux. Here's a link to download Coolterm.

If you are using Coolterm, the host configuration is as follows:

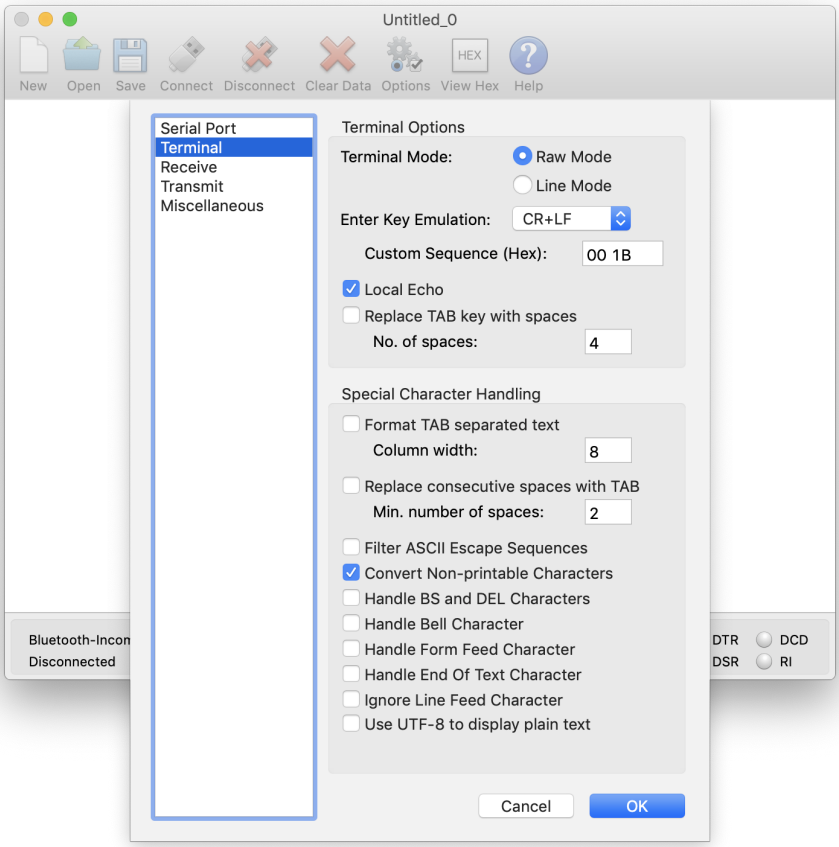
Serial Port Options:



Make sure the Arduino is connect to the USB port. If you don't see the correct Ardiuno interface or you are having trouble connecting to the Arduino, press the "Re-Scan Serial Ports" button. Select the COM Port that appears after you connect to the Ardiuno. Then change the Baud Rate to be 115200. The other options should be configured as follows:

Parameter	Value
Baud rate	115200
Data bits	8
Parity	None
Stop bits	1
Flow Control	None of the boxes should be checked

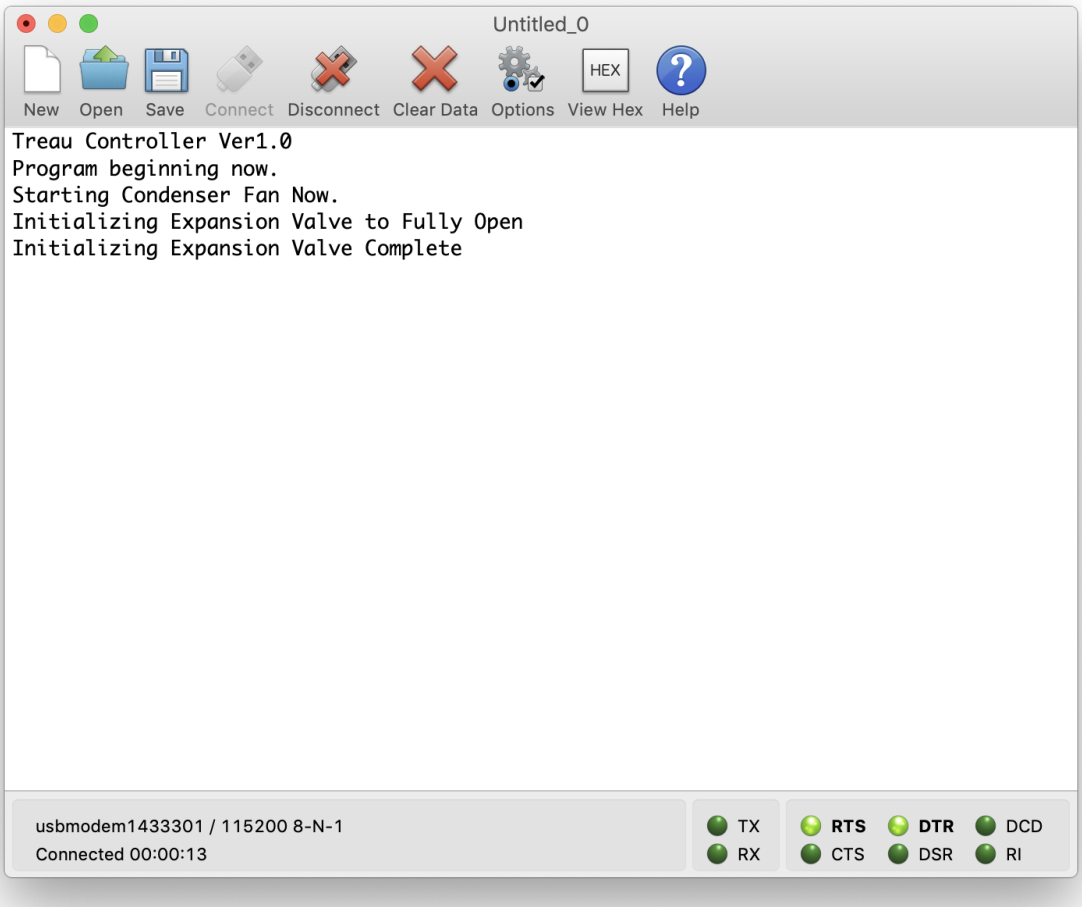
Terminal Options:



Additional useful Terminal program configurations are as follows:

Parameter	Value
Enter Key Emulation	CR+LF (\r\n)
Local Echo	Enabled (check box)

Connecting:
After configuring the port and the terminal, in the main program window, click “Connect”. You should see the following output in the terminal



At this point, the command line interface is active. The format of the commands are:

x
or
x###

where (x) is a single lowercase or uppercase letter, and (###) is a number between 0-255.

The summary of the current commands are as follows:

Action	Command	Argument	System Affected
Set Valve Position	**v**	0-250	TEV
Report current valve position	**c**		TEV
Set Fan Speed	**r**	0-255	Fan
Increase fan speed 4%	**f**		Fan
Decrease fan speed 4%	**s**		Fan
Heating mode on	**h**		Reversing Valve
Heating mode off	**g**		Reversing Valve

Command details are listed below:
The current commands and controller responses are as follows:

SET VALVE POSITION
This command will cause the position of the expansion valve to change. The expansion valve will move to the commanded position and report this new position back.

Command	Argument	Terminal Response
v	0-250	Serial Port Value is: ### New Valve Position is: ###

Example (with local echo on):
send: v123
reply: Serial Port Value is: 123
reply: New Valve Position is: 123

READ VALVE POSITION

This command will return the current value of the valve position. The valve position will not be affected by this command.

Command	Argument	Terminal Response
c		Current Valve Position is: ###

Example (with local echo on):

send: c

reply: Current Valve Position is: 123

SET FAN SPEED

This command will cause the speed of the fan to change. The new fan speed will be equal to the maximum fan speed * (Argument/250)

Command	Argument	Terminal Response
r	0-250	Serial Port Value is: ### Fan Speed is: ###

Example (with local echo on):

send: r123

reply: Serial Port Value is: 123

reply: Fan Speed is: 123

INCREASE FAN SPEED

This command will cause the speed of the fan to increase by 4%

Command	Argument	Terminal Response
f		Fan SPEED UP

Example (with local echo on):

send: f

reply: Fan SPEED UP

DECREASE FAN SPEED

This command will cause the speed of the fan to decrease by 4%

Command	Argument	Terminal Response
s		Fan SLOW DOWN

Example (with local echo on):
send: s
reply: Fan SLOW DOWN

TURN ON HEATING MODE
This command will cause the reversing valve to activate

Command	Argument	Terminal Response
h		Heating Mode ON

Example (with local echo on):
send: h
reply: Heating Mode ON

TURN OFF HEATING MODE
This command will cause the reversing valve to activate

Command	Argument	Terminal Response
g		Heating Mode OFF

Example (with local echo on):
send: g
reply: Heating Mode OFF