

# WiFi BBSing on the Atari 8bit Machines

## Part Two

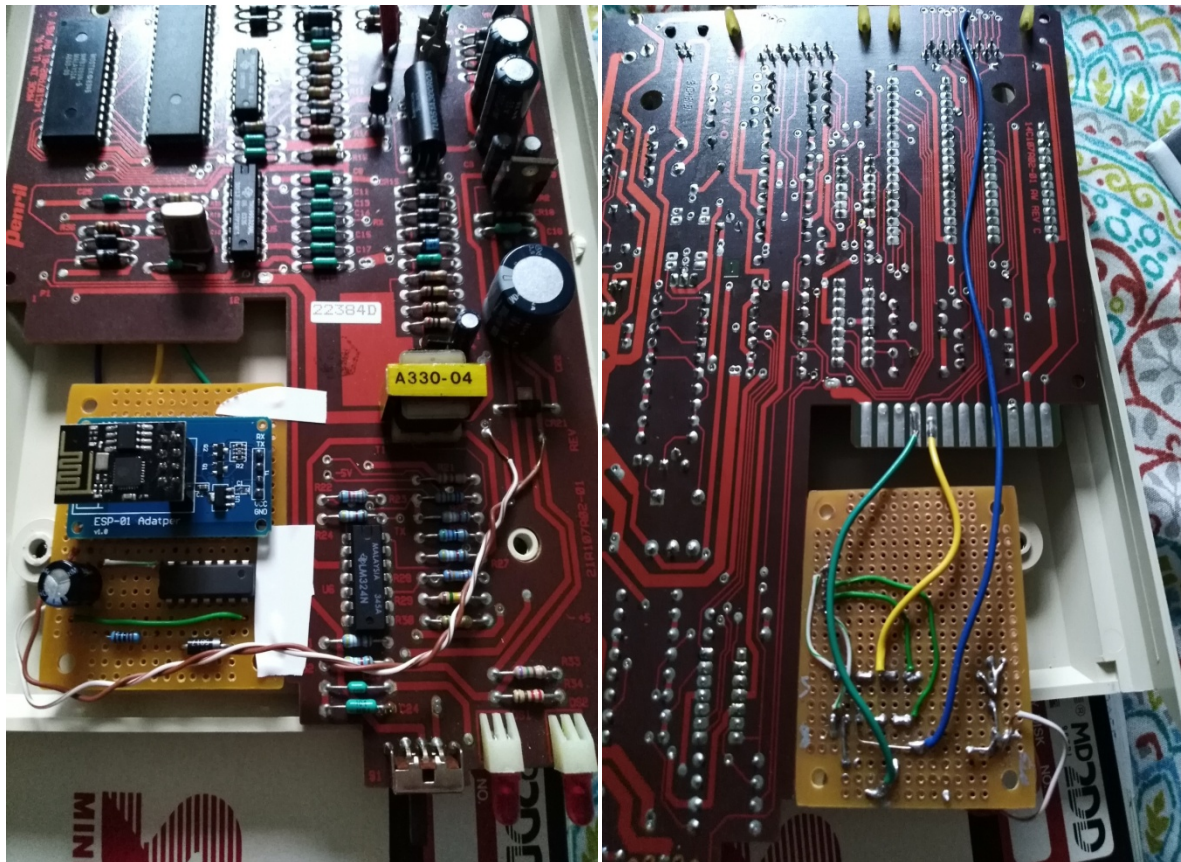
Now that we know we have a functioning ESP-01 module we can tackle the connection to an Atari 8bit machine. I am not going to go into depth on Atari term program usage, mainly this pdf will cover the various ways to connect the ESP module and how to verify it is working. There are other sources available to google that will help you with the actual program usage.

There are two types of ESP-01 module connection possible.

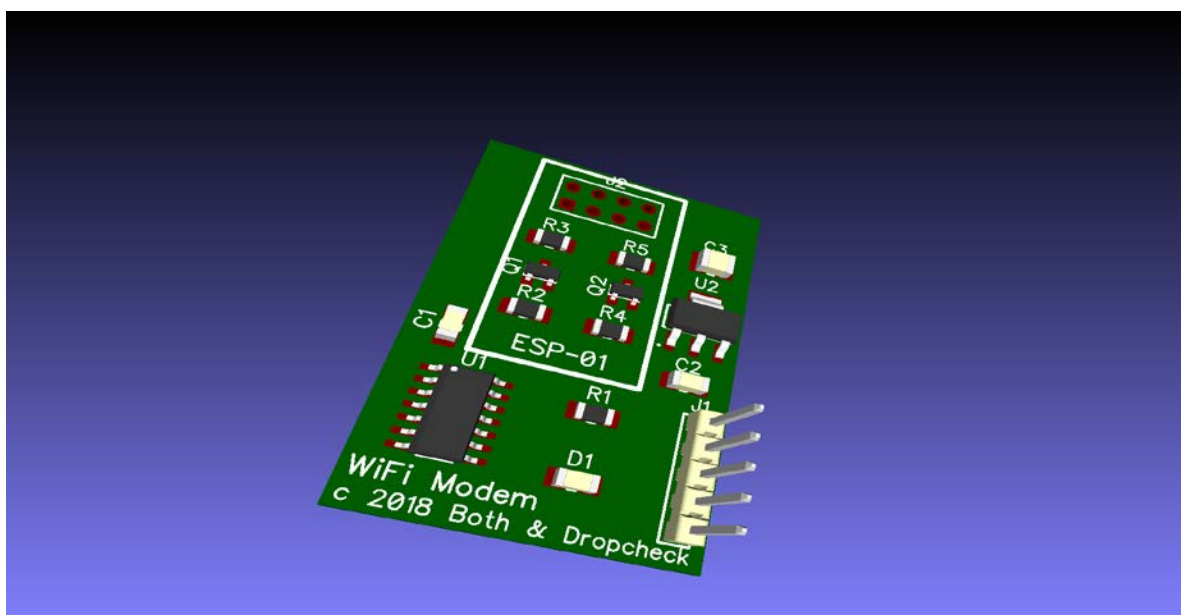
**External:** The ESP-01 module and associated circuitry is installed in a separate dedicated enclosure or internally installed in another Atari peripheral device such as an Atari 1030 modem.

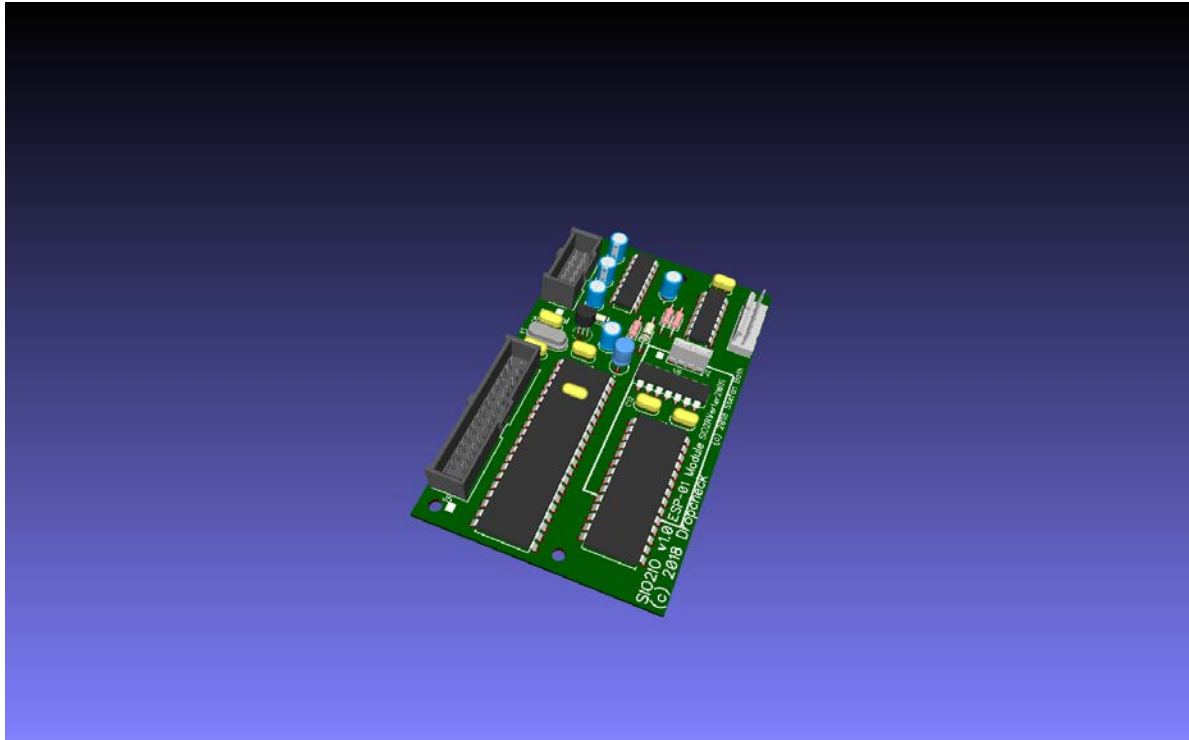
manterola from AtariAge.com has tried both options and says he prefers the Atari 1030 modem installation for a more authentic vibe.





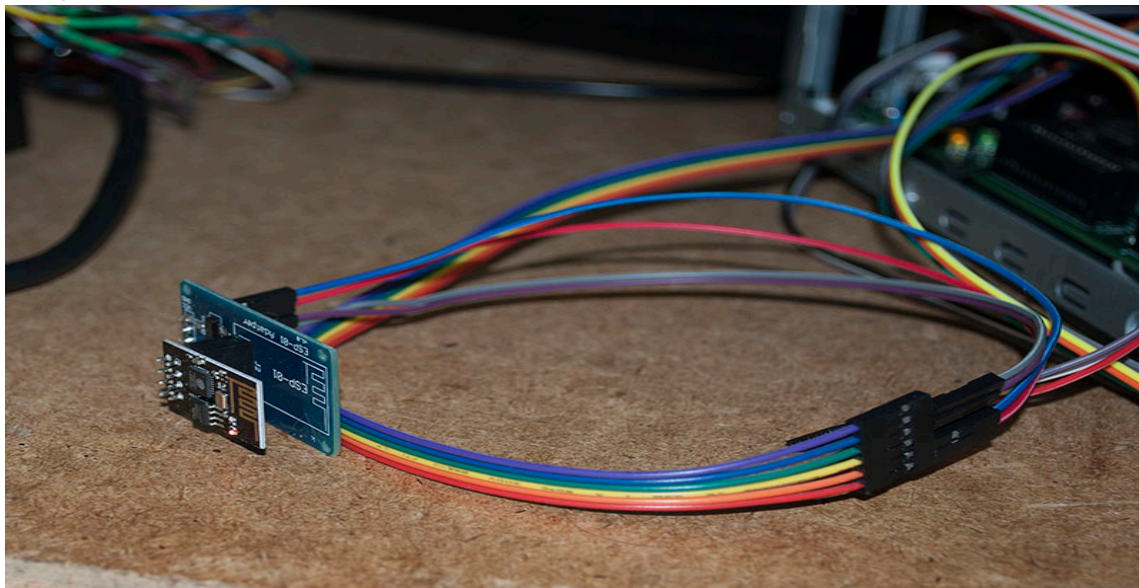
**Internal:** The ESP-01 module and associated circuitry is installed internally to the Atari 8bit drawing power and TX/RX signals from the computer directly. I have several examples of that type of connection in the works, including a WiFi modem board and a combo SIO2IO (Serial & Parallel) board for the 1088XEL.





There are two methods of ESP-01 module connection possible.

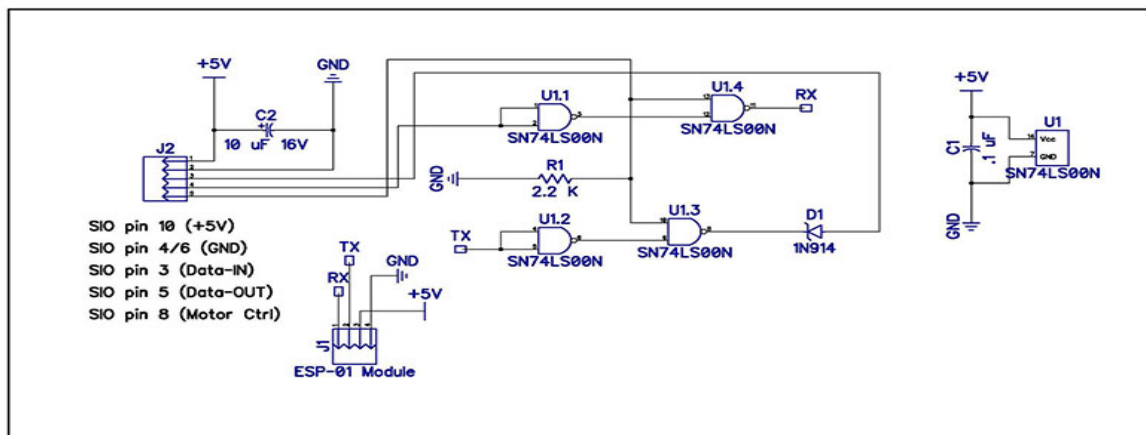
**Direct SIO connection:** Not recommended as usage tends to interfere with other SIO operations. It is okay for testing purposes only. One example is this connection to the SIO Aux connector on the 1088XEL motherboard. Another would be using a SIO breakout cable to connect directly with the SIO port on the back of an original Atari 8bit computer.



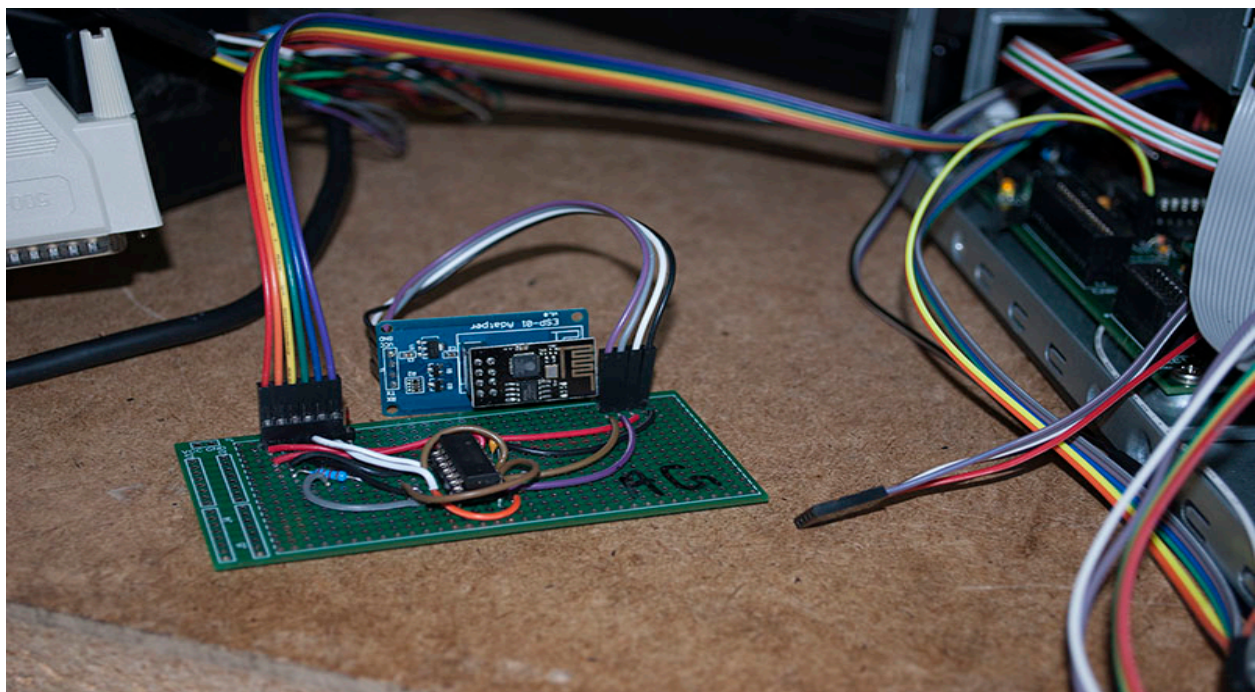
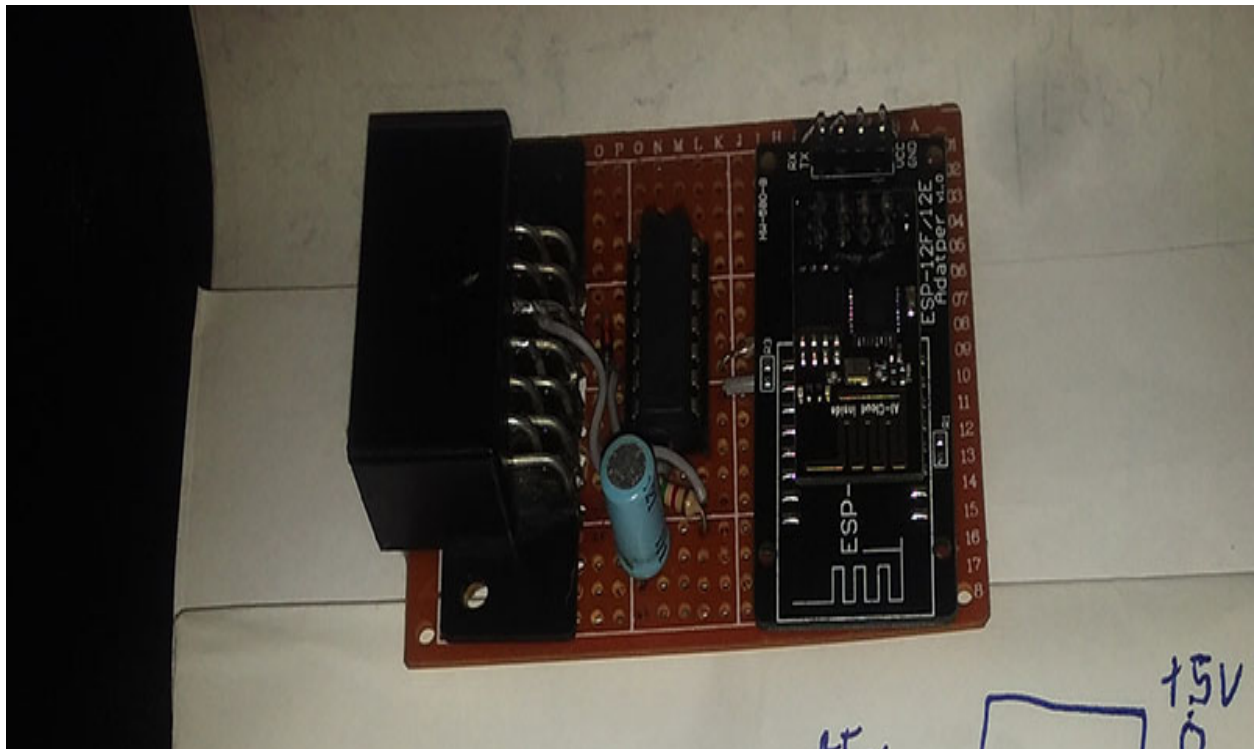




**Half Rverter Circuit to SIO connection:** This would be the normal method of connecting the ESP-01 module to the Atari. The addition of the blocking diode and the motor control signal essentially turn off the ESP-01 module when not in use. This allows normal SIO usage.



Here are a couple of examples of that circuit. Some rougher than others. ☺



However you connect the ESP-01 module to your Atari 8bit a few basic things must happen.

You will need a .atr or real floppy disk with an autorun setup to load the Rverter.hnd handler file prior to loading the terminal program itself. The terminal program needs to

be able to understand the Rverter handler and do 9600 baud. Currently the most frequently used terminal programs are Bobterm v1.21 and ICE-T.

I received these [files](#) from manterola on AtariAge.com and am making them available for download. The files are also available on AtariAge.com on this [thread](#). I have used both the BobTerm and ICET .atrs, but have not used the Flick80rverterMM.atr. BobTermRverter1.21.atr automatically loads the Rverter handler, but you will have to load it manually and then run ICET on the ICETMM.atr.

Next you will need either a real 1050/XF551 floppy drive to load the software or a floppy disk emulation device such as a SIDE 1 or 2 or the like. In my example I will be using the [XEL-CF3](#) device installed on the 1088XEL.

You will need also either a direct SIO connection or combo Rverter circuit/ESP-01 module and a wireless network.

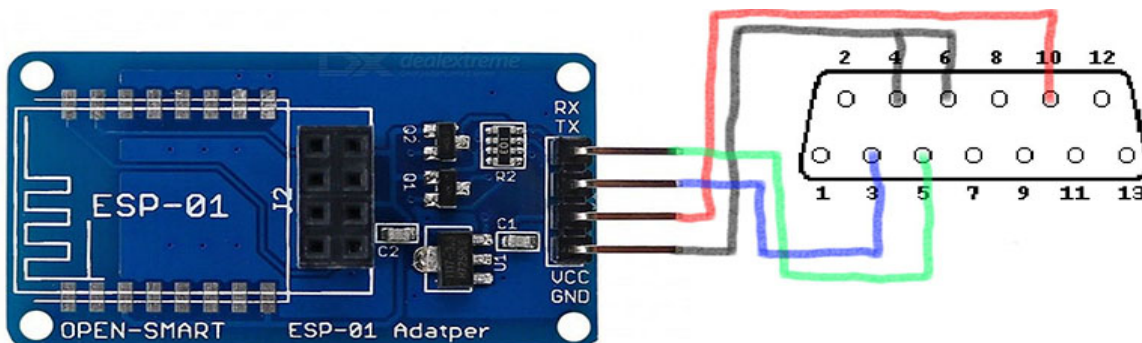
In this particular case I will keep it simple and use a direct SIO connection to the SIO Aux connector on a 1088XEL. This of course means that I will not be able to use the SIO for other uses without conflict.

Okay now to setup everything up:

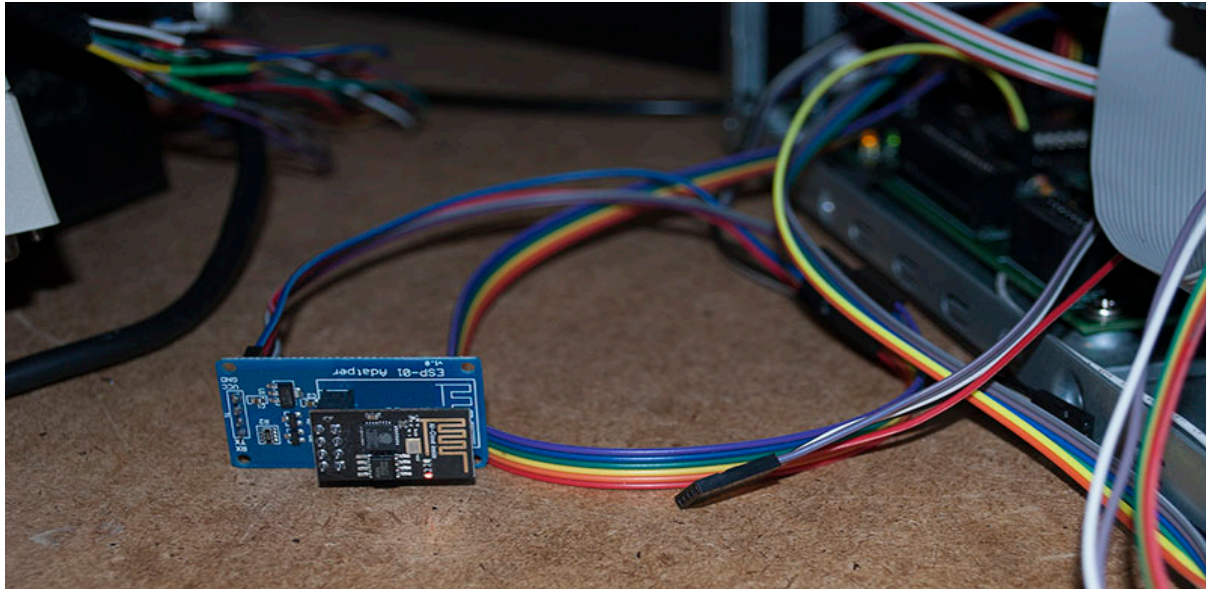
There four signals that you will need to provide the ESP-01 adapter from the Atari.

They are:

ESP-01	Atari SIO
GND	SIO pin 4 or 6
+5V	SIO pin 10
TX	SIO pin 3 (Data_IN)
RX	SIO pin 5 (Data_OUT)







Now we set the 1088XEL to boot to the XEL Loader and select the Bobterm program to load up.

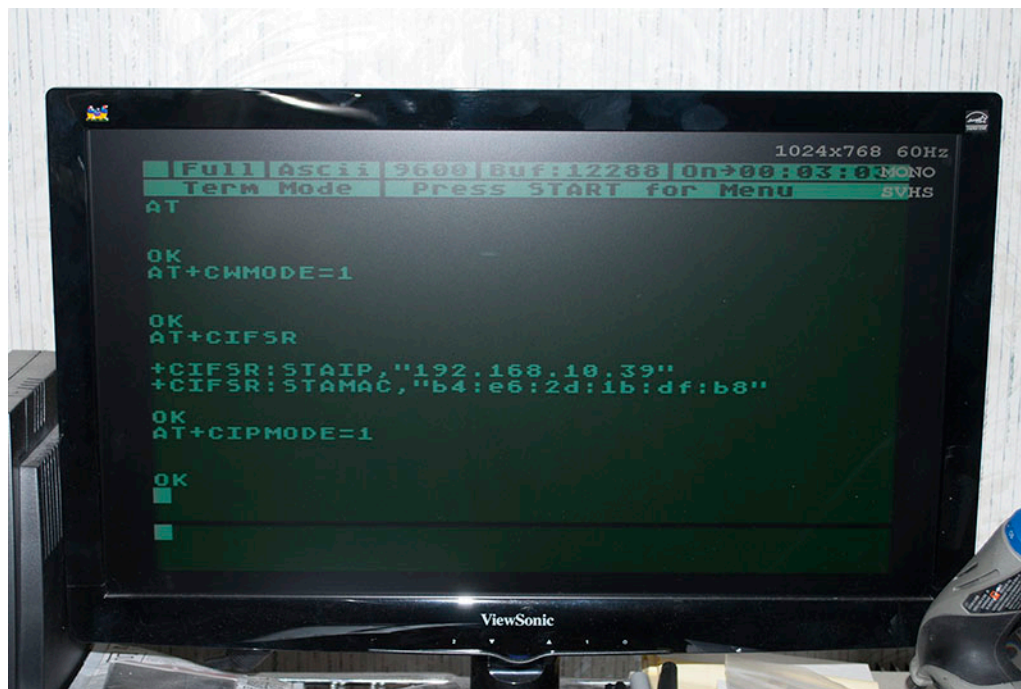


Once the program has loaded and displayed the menu screen, you should hear a high pitched squeal. You will need to press the B key until the baud rate reaches 9600. The squeal should go away when you reach the previously set baud.

Now we will enter the terminal mode and repeat a few of the commands we set earlier when we were testing on the Windows pc. There is a bit of a difference though. On

the Atari with Bobterm and probably other terminal programs as well when you hit the return key you are not sending an end of line character that the ESP-01 is expecting. A second keystroke is needed to alert the ESP-01 that we are in fact at the end of the line and to actually process the command. That bedeviled me for the longest time and I thought that something was wrong with either the ESP-01 module, Bobterm's configuration or with the Rverter circuit. But no, it appears that is one of particular quirks of the original firmware when used with the Atari software.

The keystroke you need to follow EVERY AT command is to hold down the CTRL key and then press the J key and release both.



We've already set our ESP-01 module to autoconnect to our wireless network and configured the connection settings. Now we just need to revive some of the settings and verify we have a valid IP address before we try to connect to a bbs.

That is taken care of by typing these commands in and remember following each command with the CTRL J keypress.

AT+CWMODE=1 --- WiFi mode should already be set previously

AT+CIFSR --- What is the current IP address of the ESP-01

AT+CIPMODE=1 --- Set transmission mode

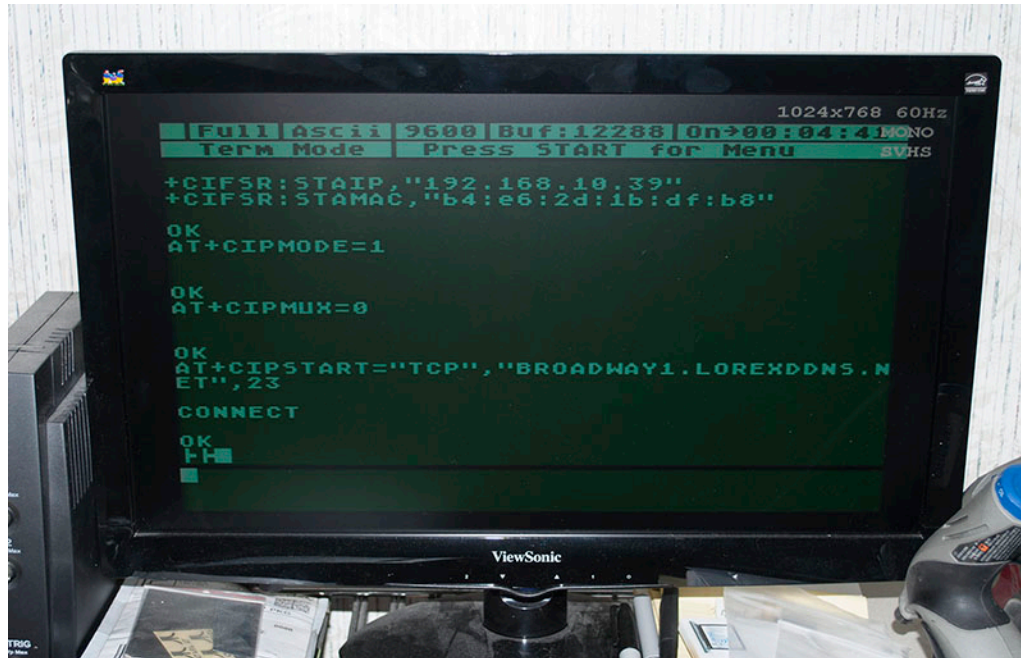
AT+CIPMUX=0 --- Set single connection mode



Now we are ready to try connecting to a BBS. For a simple test type in this command.

```
AT+CIPSTART="TCP","Broadway1.lorexddns.net",23
```

And then the CTRL J keypress



This should reward you with the "Connect" message.

At this point the big hurdle is over. It becomes a case of getting comfortable with Bobterm and it's quirks.

The initial process of configuring the ESP-01 module is not complicated, but does require either a dedicated USB programmer designed for the ESP-01 or the use of an Arduino Development board to communicate with the ESP-01 module. Once the module is programmed then you can connect it to your Atari in your preferred manner, based on what you want to do and how often you want to do it.

I do recommend flashing the ESP-01 firmware to something that is a little less tedious to use than the original firmware. Zimodem, originally programmed for Commodore's 64 computer, has been modified for the Atari 8bit machines by manterola on AtariAge.com and makes the connection process to a BBS much simpler. That flashing process maybe the subject of a third pdf lesson if there is a demand.

## Attributes:

AtariGeezer: I used several of the pictures he posted on AtariAge.com to illustrate various options. He also has a slight modification of Stefan Both's original half Rverter circuit that I have verified works as intended.

manterola: He was instrumental in solving many problems I ran across in trying to get my WiFi BBS system up and running. He provided various versions of Atari term programs and modified firmware for the ESP-01. I also used several of the pictures he posted on AtariAge.com as illustrations as well. He also bludgeoned the CTRL J keypress into my head until I realized that was the missing piece of my efforts to get connected.

Stefan Both: He originated the half Rverter circuit and paired it with his version of the ESP8266 module to get the Atari 8bit connecting to a BBS through the internet.