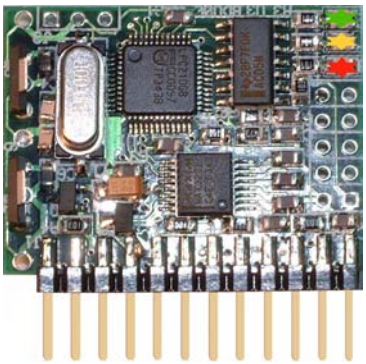
GETTING STARTED

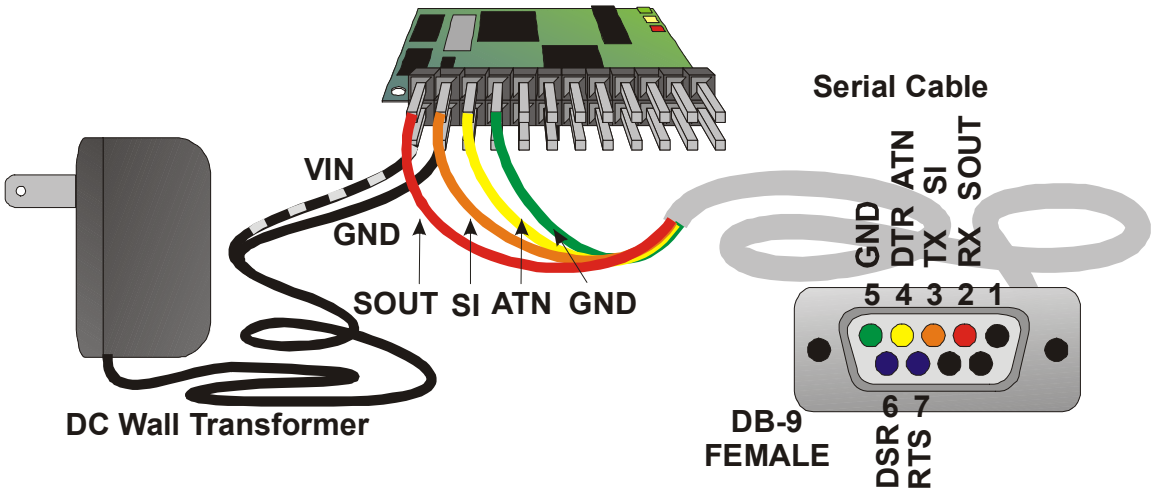
Thank you for buying the TiniARM™. We hope you will find the TiniARM™ to be the incredibly useful small controller board we intended it to be, and easy to use as possible.



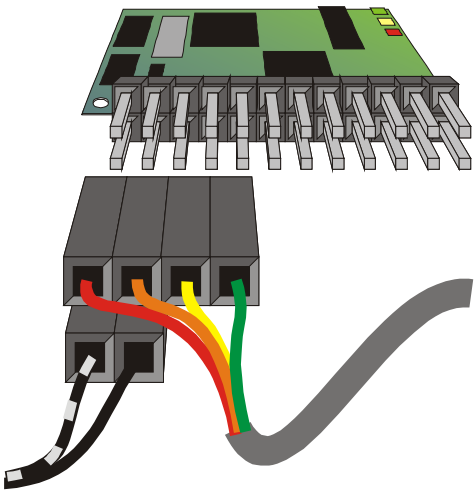
If you are new to the TiniARM™, we know you will be in a hurry to see it working. Once we've got communications, then we can make some lights blink and know for sure we're in business. Let's make this TiniARM™ talks to us!

If you have the development interface board, which can come with the TiniARM™ you are probably ahead, because the wiring to the power connector and the RS-232 connector is done for you. If not, you will have to make some special cabling

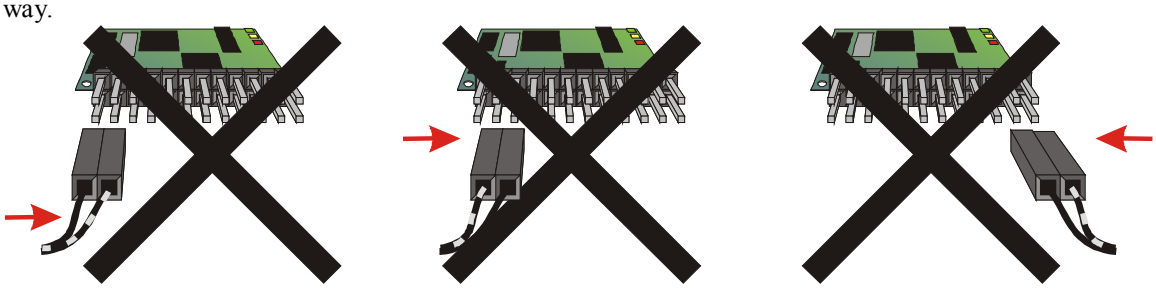
We'll need PC running a terminal program. Then we'll need a serial cable to connect from the PC to the TiniARM™ (which, hopefully, you've already gotten from us). Then we need power, such as from a 6VDC wall transformer (which, hopefully, you've already gotten from us). (If not, you can build your own cable, and supply your own power supply. Instructions are in the back of this manual in Connectors.) If we have those connections correct, we will be able to talk to the TiniARM™ interactively.



These connections are all made on a few pins of J1, which is a male .1" dual row connector. Download from http://www.newmicros.com/store/product_manual/TiniARM.zip the manual and read the rest if you haven't yet.
Generally, an intermediate double male header strip will be used to mate from J1 to the Wall transformer single row female connector, and to the Serial Cable single row female connector.

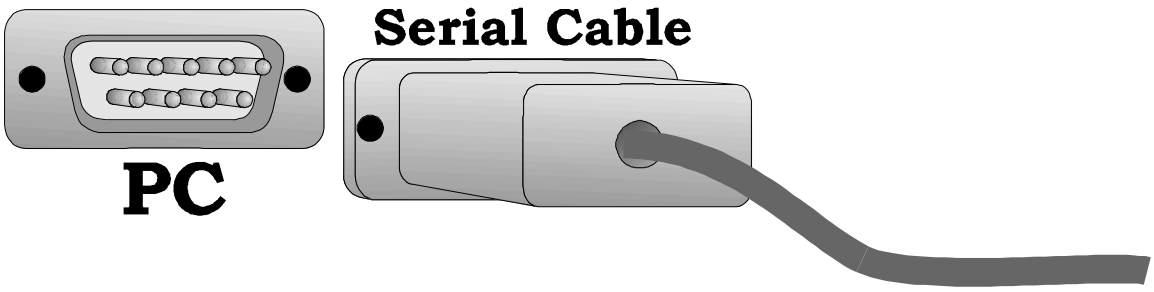


(There are other options we'll discuss later. If you are using your TiniARM™ with our Prototyping Board, these connections will be a little simpler. Follow directions in the Prototyping Board Manual if you are using it.)
Your chief concern now, is not hooking the serial cable or power cable up on the wrong connector; the wrong pins on the right connector; or backwards or rotated on the right connector. Pay close attention how the connectors go on. There is no protection to prevent plugging in on the .1" dual row headers the wrong way.

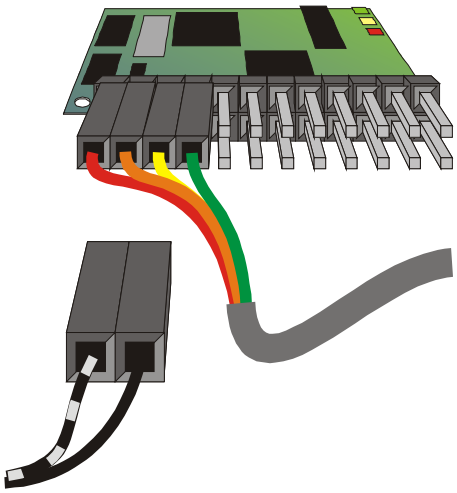


Once you have your serial cable and connectors, and wall transformer and connectors, ready, follow these steps.

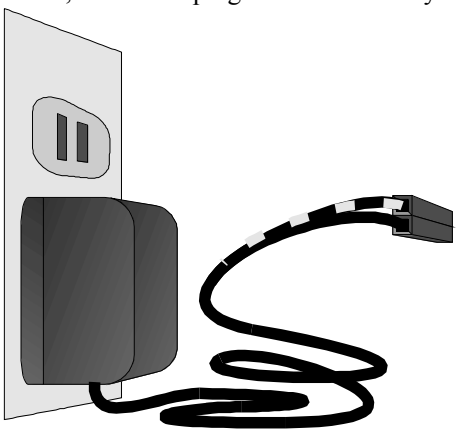
Start with the PC: Install and run the MaxTerm program, or, find and start Hyperterm. Set the terminal program for communications channel (COMM1, COMM2, etc.) you wish to use, and set communications settings to (115200, 8N1). Operate the program to get past the opening set ups and to the terminal screen, so it is ready to communicate. (If necessary, visit the chapters on MaxTerm and Hyperterm if you have trouble understanding how to accomplish any of this.)
Hook the computer end of the serial cable (usually a DB-9 connector, but may be a



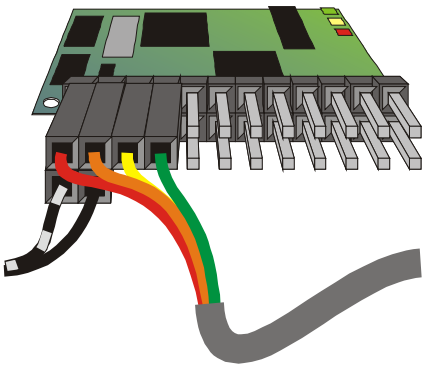
Now hook the TiniARM™ end of the serial cable to the TiniARM™ with connections as shown in the instructions. See the illustration here:



Plug the wall transformer into the wall, but do not plug it into the board yet.



Now, while watching the LED's plug in the wall transformer connector to the power pins on the TiniARM™ board. Be *very* careful not to get a misalignment here, because it will likely kill the board. See the illustration here:



All three LED's should come on. If the LED's do not light, unplug the power to the TiniARM™ quickly.

Hook the computer end of the serial cable (usually a DB-9 connector, but may be a DB-25, or other, on older PC's) to the PC's communication channel selected in the terminal program.

Plug the wall transformer into the wall, you will see the message below display on the terminal,

```
**************************
MPE ARM Stamp ROM PowerForth v6.20 [build 0014]
**************************
56408 bytes free
 ok
```

and each time you press the ENTER key it will response with,
"**ok**"

Seeing this message means the communication is established.

Now you can manually enter and execute the LED program below,

```
HEX

( Define Constant Registers/Ports )
E0028000 CONSTANT PIN
E0028004 CONSTANT SET
E002800C CONSTANT CLR
E0028008 CONSTANT DIR
E002C000 CONSTANT SEL
00800000 CONSTANT RED
01000000 CONSTANT YEL
02000000 CONSTANT GRN

 ( Configs all pins as I/O's, except UART0: RxD0 & TxD0 )
00000005 SEL !

( Configs all other TiniARM pins as outputs, except P0.22 & P0.26 for RS-232 )
E381FFFC DIR !

: DLY 40000 0 DO LOOP ;

: LED
   BEGIN
     RED SET ! YEL CLR ! GRN CLR !  DLY
      RED CLR ! YEL SET !  DLY
     YEL CLR ! GRN SET !  DLY
     YEL SET ! GRN CLR !  DLY
   KEY? UNTIL
   RED CLR ! YEL CLR ! GRN CLR !
;

LED

( Leds are now flashing. To quit, hit any key )
```