

**How 'bout them hobbyists,
Ain't they the thing?
Building them computers,
Outa' little bits of string,
Little bits of hardware
And a whole lotta luck,
Time it's all together,
It costs a pretty buck!
Them daredevil hobbyists
Listen to 'em moan
Trying to build computers
Right there in them homes
Buying them poly-paks
Building them kits
Some buy a sphere
And some buy a mits.
Look at them hobbyists
Straining their wits
Peering in the innards
Looking for them bits.
Looking for the loose wires
Looking for the cracks
Coupla hours later
They're looking for an axe
How to be a hobbyist
I'm gonna let you know
Git yerselfa micro
And watch it start to grow.**

**There'll be computers of size,
and some they will miniaturize
to do the small tasks
that everyone asks,
from scratching, to knotting of ties.**

**A computer invited to sup,
fumbled with platter and cup,
with fork and with knife,
and, asked about life,
mumbled, "It doesn't add up! "**

Starting with some basic concepts ...

With the Altair-Duino computer and most others, the user connects and controls the computer via the “console”.

The console is the screen display and the keyboard.

There are three primary console connections:

- USB cable to a PC/TeraTerm or other, terminal program
- Back of the computer VT-100 board I/O to VGA monitor and keyboard
- Back of the computer VT-100 RS-232 Port B to an external terminal that has a keyboard and display

The first connection normally used is the USB cable to the PC/TeraTerm. This is where you need to setup TeraTerm correctly, to connect to the Altair-Duino computer.

1. First, after connecting the USB cable to the PC, goto the Windows “Device Manager” ... Right-Click on Windows ICON in lower left of the Windows desktop.
2. Select “Device Manager” from the list
3. Click on the arrow next to the Ports (COM & LPT)
4. Find the “Arduino Due Programming Port (COM x) to get that port number

After running TeraTerm on your PC do the following from the top menus:

Setup – Serial port – Port: and select that COM port number from the list

Speed: Select 115200

Click “New Setting” and now TeraTerm is ready to communicate with the Altair-Duino computer.

Typically, the console is “Port A” on a vintage computer . . . On the Altair-Duino computer Port A is the “USB Programming Port” on the Arduino DUE board.

The RS-232 port on the back of the computer would typically be the “Port B”

In the “Configuration Editor” you can reconfigure all the ports to accommodate other devices and other software. Some of this will come up a little later in this document.

The Altair-Duino Pro I/O Ports:



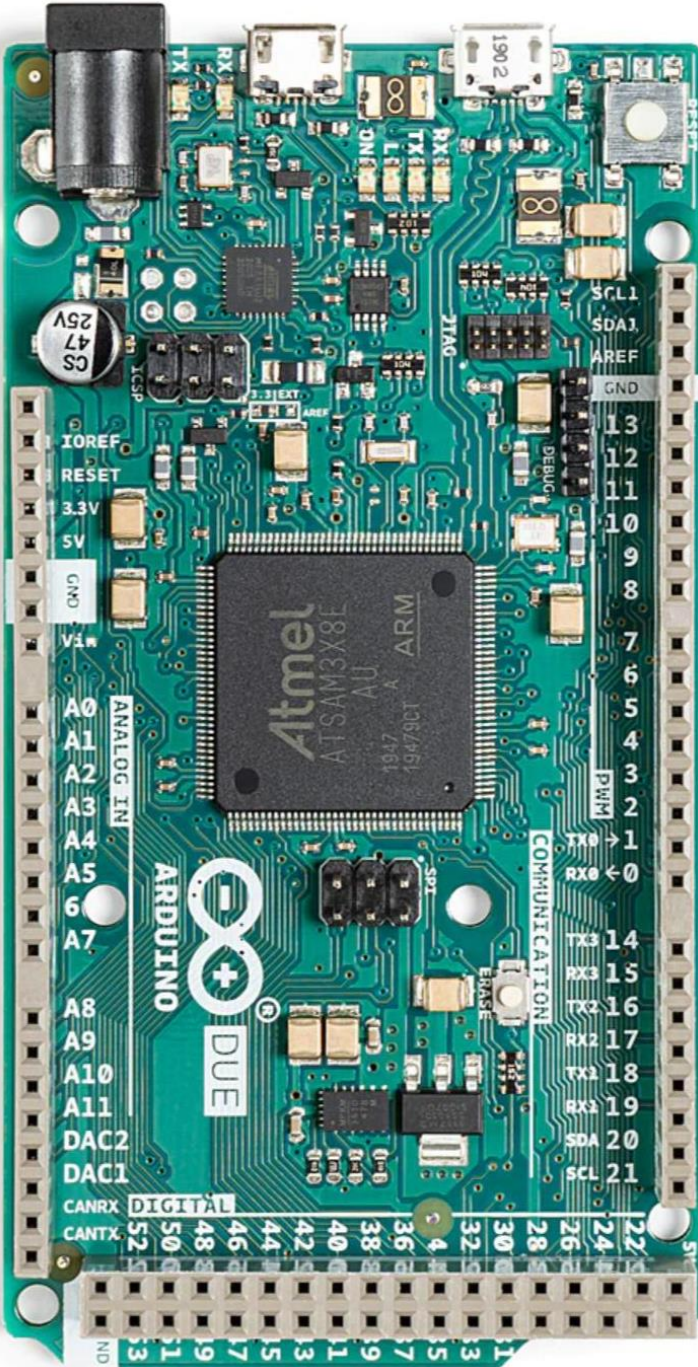
The top center USB Programming Port Cables to the PC/TeraTerm or PuTTY (**Arduino Programming Port**)

The RS-232 Port is typically set to: **(A6/A7)**

The Native Port internal to the Altair-Duino typically connects to a DAZZLER or Processor Technology VDM-1 Terminal Emulator)

Physical Serial Ports on the Due	Virtual Serial Ports on the Altair Simulator
Programming port USB connection -> Due Pins 0 and 1	SIO -> I/O address 0/1
Native port USB connection -> USB connection (No Pins)	2SIO Port 1 -> I/O address 16/17
Serial port -> Due Pins 18 and 19	2SIO Port 2 -> I/O address 18/19
Serial port -> Due Pins A6 and A7	ACR -> I/O address 6/7

9Vdc IN Programming Port Native Port .



Native Port Programming Port 9Vdc IN



Setting Up the Terminal for a Vintage 9600 BAUD Experience

The simplest setup in the beginning is using the USB Programming Port at 115200 8N1 BAUD, but for a more “vintage” feel, dropping the BAUD down to 9600 8N1 is common with users.

This means setting the TeraTerm: [**Setup – Serial port – Speed**] to 9600 then [**New setting**]

Then in the Altair-Duino Configuration Editor [**STOP + AUX1 UP**]

Then type an ‘s’ on the keyboard to enter **Configure host (s)erial settings**

Then type a “0” (zero) on the keyboard over and over to change the **USB Programming Port** to 9600

When you type an “x”, to go back, then “S” to Save as the default (0) configuration, you will see a message telling you to confirm.

Setting Up the Drives

IF using CP/M you can use 5MB or 8MB HDDs on drive A: and/or B:

You could also use two 8MB FDDs on drives A: and/or B:

Drives C: and D: only support 360K FDDs.

These choices are just an example of choices, personally, for Drive (1) you might want to use a blank 360K FDD .DSK for your own collection of software.

In the Configuration editor:

```
[D] (controls drives C: and D:)
```

```
Drive (0) mounted disk image : DISK05.DSK: Games (CP/M programs)
```

```
Drive (1) mounted disk image : DISK14.DSK: CP/M 3.0 disk 2 (utilities)
```

```
[H] (controls drives A: and B:)
```

```
(F)orce real-time mode : no
```

```
(0) Hard disk platter 0 image : HDSK03.DSK: Mike Douglas' 88-HDSK CP/M
```

```
(1) Hard disk platter 1 image : HDSK04.DSK: Infocom Adventures CP/M
```

Floppy Disk Listings

SENS Switch Positions:

Address Data

0 000 000 000 000 000

AUX1 DOWN

```
00000000) [print this directory]
00000001) Calculator
00000010) Kill-the-Bit
00000011) Pong (LEDs)
00000100) Pong (Terminal)
00000101) 4k Basic
00000110) 16k ROM Basic
00000111) MITS Programming System II
00001000) Disk boot ROM
00001001) ALTAIR Turnkey Monitor
00001010) Music ('Daisy')
00001011) CPU Diagnostic
00001100) CPU Exerciser
00001101) Music system
00001110) Hard disk boot ROM
00001111) Multi-boot loader ROM
00010000) Tarbell disk boot ROM
00010001) Cromemco RDOS 1.0 ROM
01xxxxxx) [Read Intel HEX data from primary host interface]
10nnnnnn) [load memory page, nnnnnn=file number]
11nnnnnn) [save memory page, nnnnnn=file number]
```

Hard Disk Listings

SENS Switch Positions:

Address	Data
0 001 000 000 000 000	

AUX2 DOWN

Available disks images:

00001) DISK01.DSK: CP/M (63k)
00010) DISK02.DSK: ALTAIR DOS 1.0
00011) DISK03.DSK: ALTAIR Disk Basic
00100) DISK04.DSK: ALTAIR Disk Basic programs
00101) DISK05.DSK: Games (CP/M programs)
00110) DISK06.DSK: SuperCalc II (CP/M program)
00111) DISK07.DSK: WordStar (CP/M program)
01000) DISK08.DSK: Zork (CP/M game)
01001) DISK09.DSK: Time Sharing Basic V1.1
01010) DISK0A.DSK: Time Sharing Basic V2
01011) DISK0B.DSK: Time Sharing Basic V2 programs
01100) DISK0C.DSK: Altair Mini-Disk Basic
01101) DISK0D.DSK: Altair Mini-Disk Basic programs
01110) DISK0E.DSK: Altair Mini-Disk DOS
01111) DISK0F.DSK: Altair Mini-Disk DOS programs
10000) DISK10.DSK: Dazzler programs (boots CP/M)
10001) DISK11.DSK: VDM-1 programs (boots CP/M)
10010) DISK12.DSK: IMP modem executive (CP/M)

Example to BOOT a Disk to Run a Program

SENS Switch Positions:

```
Address    Data  
0 000 000 000 000 010
```

AUX1 DOWN

This runs the "Kill-the-Bit" game, and you should see the upper address LEDs streaming across the front panel
00000010) Kill-the-Bit

The object is to toggle an address switch just as the LED lights to "Kill the Bit" ... IF you miss, more LEDs begin streaming across the front panel. Makes for a fun entertaining LED show for others.

Example to MOUNT and BOOT a Disk

SENS Switch Positions:

```
Address    Data  
0 001 000 000 000 101
```

AUX2 DOWN

This mounts the disk image into drive A:

```
[mounted disk image 'DISK05.DSK: Games (CP/M Programs)' in drive 0]  
00101) DISK05.DSK: Games (CP/M programs)
```

SENS Switch Positions:

```
Address    Data  
0 000 000 000 001 000
```

AUX1 DOWN

Now you should see: on the screen:
[Running Disk boot ROM]

```
62K CP/M  
Version 2.2mits (07/28/80)  
Copyright 1980 by Burcom Inc.
```

A>

Quick BOOT SetUp

The idea is that IF you have set the desired HDDs and FDDs in the Configuration Editor, then all you need to do after Power ON is hit the AUX1 DOWN and you BOOT into the system you have setup in the Configuration Editor.

e.g.

(Configuration Editor Section: D)

Configure disk drive settings

```
(F)orce real-time mode : no
Drive (0) mounted disk image : DISK05.DSK: Games (CP/M programs)
Drive (1) mounted disk image : DISK18.DSK: Walt's BASIC Games1 Disk5 (utilities)
Drive (2) mounted disk image : DISK14.DSK: CP/M 3.0 disk 2
Drive (3) mounted disk image : DISK19.DSK
```

E(x)it to main menu

Command:

(Configuration Editor Section: H)

Configure hard disk settings

```
(F)orce real-time mode : no
(0) Hard disk platter 0 image : HDSK03.DSK: Mike Douglas' 88-HDSK CP/M
(1) Hard disk platter 1 image : HDSK02.DSK: Walt's Programs & Files
(2) Hard disk platter 2 image : HDSK04.DSK: Infocom Adventures CP/M
(3) Hard disk platter 3 image : HDSK01.DSK: Altair Hard Disk BASIC
```

(R)eset hard disk controller

E(x)it to main menu

Command:

Power the Altair-Duino computer ON

SENS Switch Positions always let in this position:

Address	Data
0 001 000 000 001 110	

AUX1 DOWN

This BOOTS the computer into CP/M and has these drives available for use:

Drive A:	(0) Hard disk platter 0	image : HDSK03.DSK: Mike Douglas' 88-HDSK CP/M
Drive B:	(1) Hard disk platter 1	image : HDSK02.DSK: Walt's Programs & Files
Drive C:	(0) mounted disk	image : DISK05.DSK: Games (CP/M programs)
Drive D:	(1) mounted disk	image : DISK18.DSK: Walt's BASIC Games1 Disk5 (utilities)

So, all you need to do is get to work playing or programming on your Altair-Duino computer is turn the computer ON and press AUX1 DOWN.

- Two Ways of BOOTing Drives - FDD or Floppy BOOTing

Address	Data
0 000 000 000 001 000	

SW3 UP - SW2 DOWN - SW1 DOWN - SW0 DOWN

HDD or Hard Drive BOOTing

Address	Data
0 000 000 000 001 110	

SW3 UP - SW2 UP - SW1 UP - SW0 DOWN

Adding the AMON Monitor ROM into the Altair-Duino Computer

da...@hansels.net

unread,

11:41 AM (24 minutes ago)

to Altair-Duino

I just tried it here, using AMON from [Mike's deramp.com](http://Mike's%20deramp.com)

It looks like this does not work if you just transfer AMON in as a HEX file
but it does work if you install it as a ROM:

- 1) In the configuration menu, select "m" for memory management**
 - 2) select "A" to add a ROM**
 - 3) paste the content of the AMON HEX file into the terminal**
 - 4) exit the configuration editor**
- set switches to F800, EXAMINE, RUN.**

That works for me.

What's a bit strange is that the ASM/PRN files seem to indicate that
AMON uses address region F800-FFFF (2k) but the HEX file actually uses
F000-FFFF (4k).

STOP + AUX1 UP

Default microSD card with default .DSKs and STORAGE.DAT

Original Configuration Editor #0

Enable pro(f)iling : no
Set throttle delay (t/T) : auto adjust
Enable serial (p)anel : no
Enable serial (i)nput : no
Enable serial (d)ebug : no
Configure (m)emory : 64 KB RAM, 0 ROMs
Pro(c)essor : Intel 8080
Aux1 shortcut program (u/U) : 16k ROM Basic
Configure host (s)erial : Primary: USB Programming Port
(E) Configure serial cards : SIO,2SIO-P1 mapped
(D) Configure disk drives : 0 mounted
(H) Configure hard disks : 0 mounted
(V) Configure VDM-1 : Disabled
(I) Configure interrupts : Interrupts connected directly to CPU

[s]

Configure host serial settings

(0) USB Programming Port : 115200 baud
(1) Serial (pin 18/19) : 9600 baud 8N1
(2) USB Native Port : 115200 baud
(3) Serial (pin A6/A7) : 9600 baud 8N1
(4) Serial (RXL/TXL) : 9600 baud 8N1
(P)rimary host serial : USB Programming Port

[E]

Configure serial cards

(1) Configure SIO : Primary (USB Programming Port)
(2) Configure ACR : Not mapped
(3) Configure 2SIO port 1 : Primary (USB Programming Port)
(4) Configure 2SIO port 2 : Not mapped
(5) Configure 2nd 2SIO port 1 : Not mapped
(6) Configure 2nd 2SIO port 2 : Not mapped

[1]

Configure serial device SIO

```
Map to host (i)nterface      : Primary (Serial (pin 18/19) (current: USB Programming Port))
Simulated (b)aud rate        : 1200
(F)orce baud rate           : no
Example playback (N)ULs      : 4
Use (7) bits                 : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to    : off
SIO board re(v)ision        : rev1
```

[3]

Configure serial device 2-SIO port 1

```
Map to host (i)nterface      : Primary (USB Programming Port)
Simulated (b)aud rate        : 1200
(F)orce baud rate           : no
Example playback (N)ULs      : 4
Use (7) bits                 : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to    : off
```

Default microSD card with default .DSKs and STORAGE.DAT

Original Configuration Editor #1

```
Enable pro(f)iling           : no
Set throttle delay (t/T)    : auto adjust
Enable serial (p)anel       : no
Enable serial (i)nput       : no
Enable serial (d)ebug       : no
Configure (m)emory         : 64 KB RAM, 0 ROMs
Pro(c)essor                 : Intel 8080
Aux1 shortcut program (u/U) : 16k ROM Basic
Configure host (s)erial     : Primary: Serial (pin 18/19)
                             Current: USB Programming Port
(E) Configure serial cards  : SIO,2SIO-P1 mapped
(D) Configure disk drives  : 0 mounted
(H) Configure hard disks   : 0 mounted
(V) Configure VDM-1        : Disabled
(I) Configure interrupts   : Interrupts connected directly to CPU
```

[s]

Configure host serial settings

```
(0) USB Programming Port : 115200 baud
(1) Serial (pin 18/19)   : 9600 baud 8N1
(2) USB Native Port     : 115200 baud
(3) Serial (pin A6/A7)   : 9600 baud 8N1
(4) Serial (RXL/TXL)    : 110 baud 5N1 (current: 9600 8N1)
(P)rimary host serial   : Serial (pin 18/19) (current: USB Programming Port)
```

[E]

Configure serial cards

```
(1) Configure SIO           : Primary (Serial (pin 18/19) (current: USB Programming Port))
(2) Configure ACR           : Not mapped
(3) Configure 2SIO port 1   : Primary (Serial (pin 18/19) (current: USB Programming Port))
(4) Configure 2SIO port 2   : Not mapped
(5) Configure 2nd 2SIO port 1 : Not mapped
(6) Configure 2nd 2SIO port 2 : Not mapped
```

[1]

Configure serial device SIO

```
Map to host (i)nterface      : Primary (Serial (pin 18/19) (current: USB Programming Port))
Simulated (b)aud rate        : 1200
(F)orce baud rate           : no
Example playback (N)ULs     : 4
Use (7) bits                 : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to    : off
SIO board re(v)ision        : rev1
```

[2]

Configure serial device ACR

```
Map to host (i)nterface      : Not mapped
Simulated (b)aud rate        : 1200
(F)orce baud rate           : no
Example playback (N)ULs     : 4
Use (7) bits                 : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to    : off
Enable CLOAD/CSAVE (t)raps  : on
```

[3]

Configure serial device 2-SIO port 1

```
Map to host (i)nterface      : Primary (Serial (pin 18/19) (current: USB Programming Port))
Simulated (b)aud rate        : 1200
(F)orce baud rate           : no
Example playback (N)ULs     : 4
Use (7) bits                 : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to    : off
```

[4]

Configure serial device 2-SIO port 2

Map to host (i)nterface : Not mapped
Simulated (b)aud rate : 1200
(F)orce baud rate : no
Example playback (N)ULs : 4
Use (7) bits : autodetect
Serial input (u)ppercase : autodetect
Translate (B)ackspace to : off

[5]

Configure serial device 2-SIO2 port 1

Map to host (i)nterface : Not mapped
Simulated (b)aud rate : 1200
(F)orce baud rate : no
Example playback (N)ULs : 4
Use (7) bits : autodetect
Serial input (u)ppercase : autodetect
Translate (B)ackspace to : off

[6]

Configure serial device 2-SIO2 port 2

Map to host (i)nterface : Not mapped
Simulated (b)aud rate : 1200
(F)orce baud rate : no
Example playback (N)ULs : 4
Use (7) bits : autodetect
Serial input (u)ppercase : autodetect
Translate (B)ackspace to : off

Default microSD card with default .DSKs and STORAGE.DAT

Original Configuration Editor #2

Enable pro(f)iling : no
Set throttle delay (t/T) : auto adjust
Enable serial (p)anel : no
Enable serial (i)nput : no
Enable serial (d)ebug : no
Configure (m)emory : 64 KB RAM, 0 ROMs
Pro(c)essor : Intel 8080
Aux1 shortcut program (u/U) : 16k ROM Basic
Configure host (s)erial : Primary: Serial (pin A6/A7)
Current: USB Programming Port
(E) Configure serial cards : SIO,2SIO-P1 mapped
(D) Configure disk drives : 0 mounted
(H) Configure hard disks : 0 mounted
(V) Configure VDM-1 : Disabled
(I) Configure interrupts : Interrupts connected directly to CPU

[s]

Configure host serial settings

(0) USB Programming Port : 115200 baud
(1) Serial (pin 18/19) : 9600 baud 8N1
(2) USB Native Port : 115200 baud
(3) Serial (pin A6/A7) : 9600 baud 8N1
(4) Serial (RXL/TXL) : 110 baud 5N1 (current: 9600 8N1)
(P)rimary host serial : Serial (pin A6/A7) (current: USB Programming Port)

[E]

Configure serial cards

(1) Configure SIO : Primary (Serial (pin A6/A7) (current: USB Programming Port))
(2) Configure ACR : Not mapped
(3) Configure 2SIO port 1 : Primary (Serial (pin A6/A7) (current: USB Programming Port))
(4) Configure 2SIO port 2 : Not mapped
(5) Configure 2nd 2SIO port 1 : Not mapped
(6) Configure 2nd 2SIO port 2 : Not mapped

[1]

Configure serial device SIO

```
Map to host (i)nterface      : Primary (Serial (pin A6/A7) (current: USB Programming Port))
Simulated (b)aud rate        : 1200
(F)orce baud rate            : no
Example playback (N)ULs      : 4
Use (7) bits                  : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to     : off
SIO board re(v)ision         : rev1
```

[2]

Configure serial device ACR

```
Map to host (i)nterface      : Not mapped
Simulated (b)aud rate        : 1200
(F)orce baud rate            : no
Example playback (N)ULs      : 4
Use (7) bits                  : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to     : off
Enable CLOAD/CSAVE (t)raps   : on
```

[3]

Configure serial device 2-SIO port 1

```
Map to host (i)nterface      : Primary (Serial (pin A6/A7) (current: USB Programming Port))
Simulated (b)aud rate        : 1200
(F)orce baud rate            : no
Example playback (N)ULs      : 4
Use (7) bits                  : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to     : off
```

[4]

Configure serial device 2-SIO port 2

Map to host (i)nterface : Not mapped
Simulated (b)aud rate : 1200
(F)orce baud rate : no
Example playback (N)ULs : 4
Use (7) bits : autodetect
Serial input (u)ppercase : autodetect
Translate (B)ackspace to : off

[5]

Configure serial device 2-SIO2 port 1

Map to host (i)nterface : Not mapped
Simulated (b)aud rate : 1200
(F)orce baud rate : no
Example playback (N)ULs : 4
Use (7) bits : autodetect
Serial input (u)ppercase : autodetect
Translate (B)ackspace to : off

[6]

Configure serial device 2-SIO2 port 2

Map to host (i)nterface : Not mapped
Simulated (b)aud rate : 1200
(F)orce baud rate : no
Example playback (N)ULs : 4
Use (7) bits : autodetect
Serial input (u)ppercase : autodetect
Translate (B)ackspace to : off

Configuring the Altair-Duino to a Processor Technology Sol-20 microSD card with default .DSKs and STORAGE.DAT Altair-Duino Pro #2 SetUp for Processor Technology Sol-20 Configuration Editor #4 & 8

```
Enable pro(f)iling           : no
Set throttle delay (t/T)    : auto adjust
Enable serial (p)anel       : no
Enable serial (i)nput       : no
Enable serial (d)ebug       : no
Configure (m)emory          : 64 KB RAM, 0 ROMs
Pro(c)essor                 : Zilog Z80
Aux1 shortcut program (u/U) : 16k ROM Basic
Configure host (s)erial     : Primary: USB Programming Port

(E) Configure serial cards  : SIO,2SIO-P1,2SIO-P2 mapped
(D) Configure disk drives   : 3 mounted
(H) Configure hard disks    : 2 mounted
(V) Configure VDM-1        : On USB Native Port
(I) Configure interrupts    : Interrupts connected directly to CPU
```

[s]

Configure host serial settings

```
(0) USB Programming Port : 9600 baud
(1) Serial (pin 18/19)   : 9600 baud 8N1
(2) USB Native Port     : 750000 baud
(3) Serial (pin A6/A7)  : 9600 baud 8N1
(4) Serial (RXL/TXL)    : 9600 baud 8N1

(P)rimary host serial : USB Programming Port
```

[E]

Configure serial cards

- (1) Configure SIO : Primary (USB Programming Port)
- (2) Configure ACR : Not mapped
- (3) Configure 2SIO port 1 : Primary (USB Programming Port)
- (4) Configure 2SIO port 2 : Serial (pin A6/A7)
- (5) Configure 2nd 2SIO port 1 : Not mapped
- (6) Configure 2nd 2SIO port 2 : Not mapped

[1]

Configure serial device SIO

Map to host (i)nterface : Primary (USB Programming Port)
Simulated (b)aud rate : 9600
(F)orce baud rate : no
Example playback (N)ULs : 4
Use (7) bits : autodetect
Serial input (u)ppercase : autodetect
Translate (B)ackspace to : off
SIO board re(v)ision : rev1

[2]

Configure serial device ACR

Map to host (i)nterface : Not mapped
Simulated (b)aud rate : 1200
(F)orce baud rate : no
Example playback (N)ULs : 4
Use (7) bits : autodetect
Serial input (u)ppercase : autodetect
Translate (B)ackspace to : off
Enable CLOAD/CSAVE (t)raps : on

[3]

Configure serial device 2-SIO port 1

```
Map to host (i)nterface      : Primary (USB Programming Port)
Simulated (b)aud rate        : 1200
(F)orce baud rate           : no
Example playback (N)ULs     : 4
Use (7) bits                 : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to    : off
```

[4]

Configure serial device 2-SIO port 2

```
Map to host (i)nterface      : Serial (pin A6/A7)
Simulated (b)aud rate        : 9600
(F)orce baud rate           : no
Example playback (N)ULs     : 4
Use (7) bits                 : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to    : off
```

[5]

Configure serial device 2-SIO2 port 1

```
Map to host (i)nterface      : Not mapped
Simulated (b)aud rate        : 9600
(F)orce baud rate           : no
Example playback (N)ULs     : 4
Use (7) bits                 : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to    : off
```

[6]

Configure serial device 2-SIO2 port 2

Map to host (i)nterface : Not mapped
Simulated (b)aud rate : 9600
(F)orce baud rate : no
Example playback (N)ULs : 4
Use (7) bits : autodetect
Serial input (u)ppercase : autodetect
Translate (B)ackspace to : off

[D]

Configure disk drive settings

(F)orce real-time mode : no
Drive (0) mounted disk image : DISK11.DSK: VDM-1 programs (boots CP/M)
Drive (1) mounted disk image : DISK01.DSK: CP/M (63k)
Drive (2) mounted disk image : DISK05.DSK: Games (CP/M programs)
Drive (3) mounted disk image : none

[H]

Configure hard disk settings

(F)orce real-time mode : no
(0) Hard disk unit 1 platter 0 image : HDSK03.DSK: Mike Douglas' 88-HDSK CP/M
(1) Hard disk unit 1 platter 1 image : HDSK04.DSK: Infocom Adventures CP/M
(2) Hard disk unit 1 platter 2 image : none
(3) Hard disk unit 1 platter 3 image : none
(4) Hard disk unit 2 platter 0 image : none
(5) Hard disk unit 2 platter 1 image : none
(6) Hard disk unit 2 platter 2 image : none
(7) Hard disk unit 2 platter 3 image : none

[V]

Configure VDM-1 settings

Map to (i)nterface : On USB Native Port

Memory (a)ddress : CC00

DIP switch (1)+2 : off/on (normal video)

DIP switch (3)+4 : off/on (blinking cursor)

DIP switch (5)+6 : on /on (control characters shown, VT-CR blanking off)

Map (k)eyboard to : none

microSD card with default .DSKs and STORAGE.DAT
Altair-Duino Pro #2 SetUp for Processor Technology Sol-20
Original Configuration Editor #5 & 9

```
Enable pro(f)iling           : no
Set throttle delay (t/T)    : auto adjust
Enable serial (p)anel        : no
Enable serial (i)nput        : no
Enable serial (d)ebug        : no
Configure (m)emory           : 64 KB RAM, 0 ROMs
Pro(c)essor                  : Zilog Z80
Aux1 shortcut program (u/U)  : 16k ROM Basic
Configure host (s)erial      : Primary: USB Programming Port

(E) Configure serial cards   : SIO,2SIO-P1,2SIO-P2 mapped
(D) Configure disk drives    : 3 mounted
(H) Configure hard disks     : 2 mounted
(V) Configure VDM-1          : On USB Native Port
(I) Configure interrupts     : Interrupts connected directly to CPU
```

[s]

Configure host serial settings

```
(0) USB Programming Port : 9600 baud
(1) Serial (pin 18/19)   : 9600 baud 8N1
(2) USB Native Port      : 750000 baud
(3) Serial (pin A6/A7)   : 9600 baud 8N1
(4) Serial (RXL/TXL)     : 9600 baud 8N1

(P)rimary host serial : Serial (pin 18/19) (current: USB Programming Port)
```

[E]

Configure serial cards

- (1) Configure SIO : Primary (USB Programming Port)
- (2) Configure ACR : Not mapped
- (3) Configure 2SIO port 1 : Primary (USB Programming Port)
- (4) Configure 2SIO port 2 : Serial (pin A6/A7)
- (5) Configure 2nd 2SIO port 1 : Not mapped
- (6) Configure 2nd 2SIO port 2 : Not mapped

[1]

Configure serial device SIO

Map to host (i)nterface : Primary (USB Programming Port)
Simulated (b)aud rate : 9600
(F)orce baud rate : no
Example playback (N)ULs : 4
Use (7) bits : autodetect
Serial input (u)ppercase : autodetect
Translate (B)ackspace to : off
SIO board re(v)ision : rev1

[2]

Configure serial device ACR

Map to host (i)nterface : Not mapped
Simulated (b)aud rate : 1200
(F)orce baud rate : no
Example playback (N)ULs : 4
Use (7) bits : autodetect
Serial input (u)ppercase : autodetect
Translate (B)ackspace to : off
Enable CLOAD/CSAVE (t)raps : on

[3]

Configure serial device 2-SIO port 1

```
Map to host (i)nterface      : Primary (USB Programming Port)
Simulated (b)aud rate        : 1200
(F)orce baud rate           : no
Example playback (N)ULs     : 4
Use (7) bits                 : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to    : off
```

[4]

Configure serial device 2-SIO port 2

```
Map to host (i)nterface      : Serial (pin A6/A7)
Simulated (b)aud rate        : 9600
(F)orce baud rate           : no
Example playback (N)ULs     : 4
Use (7) bits                 : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to    : off
```

[5]

Configure serial device 2-SIO2 port 1

```
Map to host (i)nterface      : Not mapped
Simulated (b)aud rate        : 9600
(F)orce baud rate           : no
Example playback (N)ULs     : 4
Use (7) bits                 : autodetect
Serial input (u)ppercase     : autodetect
Translate (B)ackspace to    : off
```

[6]

Configure serial device 2-SIO2 port 2

Map to host (i)nterface : Not mapped
Simulated (b)aud rate : 9600
(F)orce baud rate : no
Example playback (N)ULs : 4
Use (7) bits : autodetect
Serial input (u)ppercase : autodetect
Translate (B)ackspace to : off

[D]

Configure disk drive settings

(F)orce real-time mode : no
Drive (0) mounted disk image : DISK11.DSK: VDM-1 programs (boots CP/M)
Drive (1) mounted disk image : DISK01.DSK: CP/M (63k)
Drive (2) mounted disk image : DISK05.DSK: Games (CP/M programs)
Drive (3) mounted disk image : none

[H]

Configure hard disk settings

(F)orce real-time mode : no
(0) Hard disk unit 1 platter 0 image : HDSK03.DSK: Mike Douglas' 88-HDSK CP/M
(1) Hard disk unit 1 platter 1 image : HDSK04.DSK: Infocom Adventures CP/M
(2) Hard disk unit 1 platter 2 image : none
(3) Hard disk unit 1 platter 3 image : none
(4) Hard disk unit 2 platter 0 image : none
(5) Hard disk unit 2 platter 1 image : none
(6) Hard disk unit 2 platter 2 image : none
(7) Hard disk unit 2 platter 3 image : none

[V]

Configure VDM-1 settings

Map to (i)nterface : On USB Native Port

Memory (a)ddress : CC00

DIP switch (1)+2 : off/on (normal video)

DIP switch (3)+4 : off/on (blinking cursor)

DIP switch (5)+6 : on /on (control characters shown, VT-CR blanking off)

Map (k)eyboard to : none

Load & Run Processor Technology VDM-1 System

Address & Data Switch Settings:

0 000 000 000 010 001

AUX2 DOWN

This loads the Processor Technology "CUTER" ROM into memory at C000_h

Altair-Duino Pro Terminal Display shows;

[Mounted Disk Image 'DISK11.DISK: VDM-1 programs (boot' CP/M) in drive 0]

0 000 000 000 001 000

AUX1 DOWN

VDM-1 Terminal Display shows the ">**A**:" CUTER Prompt.

Then I ran **TREK80, DEFLECT, PATTERN, RAIDERS, TARGET, CHASE** etc. and other programs, and everything seems to be working just fine!

> END OF PROCESSOR TECHNOLOGY <