How to Test, Download, and Run a Program on the MDE 8051 Trainer Board

(This document is produced with contribution from Bryce Deshazo)

The 8051 Trainer manufactured by Digilent board comes with AC-to-DC power Adaptor (5V) and DB-9 connector cable in which one side is DB-9 female and the other side is DB-9 male.

Note: Windows Vista and Windows 7 do not come with HyperTerminal. You will need an alternative program. Tera Term works just fine and it is an open source project, so it is a free alternative. Go to <u>http://en.sourceforge.jp/projects/ttssh2/releases/</u> and you will see a place to download Tera Term below.

Summary - News - Downloads - Source Code - Wiki - Docs - Forum	ns 👻 Lists 👻 Ticket 👻	
Download		E
Fera Term is Tera Term Pro 2.3 & succession version and is being offi terminal emulator supporting SSH2 and UTF-8 protocol. You can download file releases of Tera Term project from here.	icially recognized by the original author	. Tera Term is open source free software
Operating System: Windows 95/98/ME, Windows NT/2000, Window	vs XP	
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Download and install Tera Term.

Connecting the 8051 Trainer to PC with Tera Term:

a) Connect the Serial 0 connector of the 8051 Trainer to COM port of the PC using DB-9 cable, as shown below. If your PC does not have any serial port then you must use a USB to serial cable available from Digilent website



- b) On your PC open Tera Term.
- c) Select the proper Com port then click OK

Note if you are using a USB to serial cable, then it will show up with a longer name like the one shown below

Tera Term: New	connection				•		
© TCP/IP	Host:	192.168.1.3			-		
	Service:	 History Telnet 	TCP por	t#: 22			
		SSH Other	SSH version: Protocol:	SSH2	*		
Serial	Port:	COM3			•		
	ОК	COM4: Prolif	ic USB-to-Serial	Comm P	Port (COM4	4)	

d) Connect the power



e) Put the Switch on PRG, as Shown bellow. (The PRG LED is turned on now)



f) Go to your Tera Term. Press Enter once and examine the Tera Term screen. You should now see the following message on the screen.

🦉 COM4:9600baud - Tera Term VT		
File Edit Setup Control Window	Resize Help	
DS89C420 LOADER VERSION 1.0	COPYRIGHT (C) 2000 DALLAS SEMICONDUCTOR	

You are now ready to load a HEX file into the trainer.

How to Load and Run Programs on 8051 Trainer:

g) Clear (Erase) the Flash by entering letter K followed by Enter.



h) Ready to download by entering letter L followed by Enter.

🐸 COM4:9600baud - Tera Term VT		
File Edit Setup Control Wind	ow Resize Help	
DS89C420 LOADER VERSION 1 > K > L	.0 COPYRIGHT (C) 2000 DALLAS SEMICONDUCTOR	

i) Using Tera Term send a text file to the trainer, like shown below.

	Edit Setup C	Control W	indow	Resize Help				
	New connection Duplicate session Cygwin connect	A n A ion A	lt+N lt+D lt+G	COPYRI GHT	(C) 20	00 DALLAS	SEMICONDUCTOR	
	Log Comment to Log	g						
	View Log <mark>Show Log dialog</mark>							
1	Send file							
1	Transfer		A					
	SSH SCP							
	Change director	y						
	Replay Log							
	TTY Record							
	TTY Replay							
	Print	A	lt+P					
	Disconnect		Alt+I					
	Exit	A	lt+0					

j) When the dialogue appears, select all files and navigate to find your HEX file to be sent to the trainer. (See the Proview Tutorial to create a HEX file test program.)

Click here to download toggle hex file

Tera Term	: Send file			×	
Look in:	SONY 4GB (H:)	-	3 🗊 😕 💷 •		
Name	*		Date modified		
ECET23)	10/29/2009 2:35 AM			
ENGL13	5		9/4/2009 10:08 AM		
Project			8/27/2009 2:11 PM		
) Softwar	e		5/4/2009 7:08 PM		
8051test	.hex		11/5/2009 6:56 PM		
•	m			F	
File name:	8051test		Open		
Files of type: Al(*.*)			▼ Cancel		
			Help		
Option					
Binary					

 k) You should see a series of Gs appear on your screen if the download is successful. Otherwise repeat the process.



 If the Download is successful, you can move the Switch to Run position and press RESET button to execute the code.



Check out the command list here.