TI-STARTER SETUP GUIDE

This guide was developed to help get your TI-99/4A connected to a modern PC quickly and relatively easy. Some level of experience is expected and more research on your part will, likely, be necessary. This is not a step-by-step guide, but rather a guide to get you pointed in the right direction. At the end of this document I have provided a number of additional resources for more information online. You're going to need it - so don't ignore it! And don't forget to Google, Google, Google!

Anyhow, I hope this TI-STARTER Kit will get you motivated and enjoying your TI-99/4A as much as I have, and do, with mine!

-Dano

"Long Live the TI-99/4A!"

TI-STARTER Package Includes:
TI-STARTER Disk
RJ-45 to 25-Pin Serial Adapter
RJ-45 to 9-Pin Serial Adapter
Ethernet Cable
Printed Guide (available on website in PDF format with clickable web links)
Website: http://www.CantStopClicking.com/ti994a/

System Requirements:
TI-99/4A with 32K RAM, Extended Basic, RS232, Disk Controller, and one floppy drive (two are highly recommended)

PC, Mac, or Other:
Terminal Emulator that supports Serial communications (RS232), and most importantly the **X-Modem** File Transfer Protocol.

Tera Term is used in this example, for the PC.
Zterm is a good alternative for Mac users.

Super Quick Steps:
Install Serial Adapters and Ethernet Cable between TI-99/4A and PC
Install Telecommunications software on PC
Start TI-99/4A with Extended Basic Inserted and TI-STARTER Disk in DSK1
Find some software to Transfer (refer to Internet resources, WHTECH is a good start!)
Kick back and have some fun!
If these quick steps are too quick, keep reading.

Installing the Serial Adapter Cable:
Install RJ-45 with 25-Pin Adapter on TI-99/4A
Install RJ-45 with 9-Pin Adapter on PC
If not already done, install Ethernet cable between RJ-45 adapters

*Note: USB Serial adapters DO work, some better than others. Find a model that uses the "**FTDI**" chipset. Avoid "Prolific" if at all possible. I no longer recommend Keyspan adapters as they have a nasty bug, when used in a "virtual" environment.*

Downloading Tera Term (PC Users):
You can find Tera Term at the following website:
http://logmett.com/index.php?/download/free-downloads.html

Downloading Zterm (Mac Users):
You can find Zterm at the following website:
http://www.dalverson.com/zterm/

Installing Tera Term (PC Users):
Download Tera Term and start Installer
You can choose **Standard** or **Compact**
Launch Tera Term
Select **Serial** 'Radio Button' *(if Serial is greyed out, stop and troubleshoot your com port)*
Configure Serial Port from Drop Down Menu
Select **Baud** rate of **19200** *(note: most TI apps only support 9600, MFM will do 19200)*
Click **Ok**
Proceed with MFM on the TI-99/4A

Starting Magic File Manipulator (MFM):
Insert **Extended Basic**
Insert **TI-STARTER** Disk in **DSK1** on the TI
Power on the TI-99/4A system
The TI-STARTER disk will AUTOLOAD from DSK1 and present you with a menu
Menu Options are: (1) for MFM and (2) for ARCHIVER
Choose **MFM** for File Transfers between PC and TI-99/4A

Once MFM has loaded, choosing the default options should be sufficient. You might want to change the default drive to suit your system. However, you should print out or at least read the documentation for MFM as I won't be getting into the functionality of MFM here. I have made a PDF available online, please download the MFM manual.

TECHNICAL INFORMATION

TI-STARTER Disk Contents:
Magic File Manipulator v3.2.5 by Ben Hatheway:
Program to exchange files, via XMODEM, between TI and PC.

Archiver III v3.04 by Barry Boone:
Program to pack and un-pack groups of files. Similar to ZIP on the PC.

Disk Manager 1000 by Bruce Caron:
Program to do file management on the TI. This file is archived on the disk.

Actual Disk Contents:
```
ARC304            32 PROGRAM       - Archiver III (EA5 File - NOT XB)
ARC303DOCS        51 DIS/VAR 80    - Archiver III Documentation
DM1000_V61       135 INT/FIX 128   - Disk Manager 1000 (ARC'd File)
LOAD               4 PROGRAM       - Extended Basic Auto-Loader
LOADMFM           34 PROGRAM       - MFM XB Loader (do not modify)
MFM               24 PROGRAM       - MFM XB Program (must use LOADMFM)
MFM-README        22 DIS/VAR 80    - MFM Readme File (READ IT!!!)
YLOAD              7 DIS/FIX 80    - Assembly Loader for ARC304 for XB
```

Working with TI File Types:
The TI has a number of different file types and can be a source of confusion on how they are loaded. Listed below are the typical ones you'll run across and typical usage - but nothing associates a file type to a program – you will have to experiment.

```
DIS/FIX 80    Typically an Editor/Assembler Option #3 file
DIS/VAR 80    Typically a text file
PROGRAM       Typically an executable for TI-Basic, XB, or Editor/Assembler #5 File
DIS/VAR 163   Typically a TI-Extended Basic program in merge format
INT/FIX 128   Typically an archived file for use with ARCHIVER
```

Printing Documentation:
To view or print the documentation for MFM (or any other DIS/FIX 80 file) use Archiver III on the TI-STARTER disk. Assuming you will be printing to your PC terminal; you will need to set the baud rate to 9600. The typical command set for most TI applications is "RS232.BA=9600.PA=N.DA=8", which is the maximum speed most TI apps can communicate with natively. You will need to open a terminal program on the PC and set the baud rate to 9600. You can print using the Archiver III 'List Text File' menu option.

Note: ARCHIVER is used for archiving or de-archiving of files (similar to ZIP). The TI-STARTER disk includes an archived file of Disk Manager 1000 v6.1 in the file labeled 'DM1000_V61', use ARCHIVER to extract the DM1000 files to a separate disk. ARCHIVER also has some other very useful features such as cataloging disks and printing of files. All output can be sent to; screen, printer, or terminal.

Working with Disk Images:

Disk Images are PC files that contain a virtual image of a real TI disk usually associated with emulators and have various extensions. Typical images extensions are: .DSK or .TIDISK, there are others, but those are most common. There are many different image formats and not all are necessarily compatible with each other. TI-99DIR by Fred Kaal is a great program to manage the different disk images on the PC (this is a Windows only application). It has the capability to open disk images, transfer between different types, manage archived files (for use with ARCHIVER), disk image conversions, view TI files and many more features. ***It is an invaluable tool and should be installed.***

Cable Pinout:

The cable included with the TI-STARTER disk is called a "Straight Thru" cable (it is straight through logically but not physically). See pinout below. The TI-STARTER cable consists of two RJ-45 serial adapters; one RJ-45 to 9-Pin and one RJ-45 to 25-Pin. A standard Ethernet cable is utilized between the two adapters (which *is* straight through physically). This allows for easy cable routing and variable length by simply replacing it with a standard Ethernet cable of your choice. There are limitations to length so keep it as short as required (less than 15 feet should be fine). Longer can be obtained but do your research on RS232 cable length specifications.

TI-99/4A side is a male, 25 Pin D-SUB. PC side is a female, 9 Pin D-SUB.

```
        TI-99/4A              PC
        =========          ========
        RD    (2)   <----  (3)  TX
        TX    (3)   ---->  (2)  RD
        DTR   (20)  <----  (4)  DTR
        DCD   (8)   ---->  (1)  DCD
        DSR   (6)   ---->  (6)  DSR
        CTS   (5)   ---->  (8)  CTS
        GND   (7)   -----  (5)  GND
```

Additional Programs for file exchange between TI-99/4A and PC:

TI-99Dir by Fred Kaal:
Invaluable tool for Windows that manages disk images on the PC. Great for working with content downloaded from the Internet.
http://www.ti99-geek.nl/

TI99-PC by Paolo Bagnaresi (website maintained by Ron Rueter):
DOS (PC) Application to read/write disk images to real Floppy Drives – Very Handy!
http://www.mainbyte.com/ti99/howto/ti99pc.html

Virtual Disk Manager 99 (VDM99) by Thierry Nouspikel:
Program to exchange files and disk images between TI and PC over RS232 (or PIO)
http://www.nouspikel.com/ti99/vdm99.htm

Internet Resources:
The best place to start your online research is Ernest Pegrem's website with many original manuals scanned in to PDF. Next, visit Western Horizons Technology for their very, very, large collection of just about everything one could collect for the TI, and then some. A great place to download software. The search engine is a must. There you will find editions of magazines, user group newsletters, software galore, specifications, and on and on. Again, that is WHTECH. From there visit the other websites and get a feel for which ones carry what information. They are ALL worth noting and that's why they're listed. Surely there are more but these will get you started.

Enjoy!

Websites of Interest:

The TI-99 Books Archive by Ernest Pegrem (hosted by HexBus)
HexBus by Jon Guidry:
http://www.hexbus.com/tibooks/

The TI-99/4A and Geneve Web Pages by Fred Kaal:
http://home.vodafonevast.nl/fgkaal/

Western Horizons Technology (WHTECH):
http://www.whtech.com/ti/   -   *Main Website*
ftp://ftp.whtech.com   -   *FTP Site for Files*

http://www.whtech.com/ti/ftp_search.html   -   *Search Engine for WHTECH*

TI-99 I.U.C. (Italian Users Club) by Ciro Barile
http://www.ti99iuc.it/

CaDD Electronics:
http://www.cadd99.com/

System-99 User Group (SNUG):
https://www.s-n-u-g.de/home/index_en.php

Mainbyte's Home of the TI Computers by Ron Reuter:
http://www.mainbyte.com/ti99/

The TI-99/4A Tech Pages by Thierry Nouspikel:
http://www.nouspikel.com/ti99/titech.htm

TI-99/4A Videogame House by Bryan Roppolo Boulder:
http://www.videogamehouse.net/

TI-99/4A Game Shelf by Walid Maalouli:
http://tigameshelf.net/

The TI-99/4A TImeline by Bill Gaskill and Tom Wills:
http://www.ti99ers.org/timeline/

The TI99ers Hall of Fame by Tom Wills:
http://ti99ers.org/hof/

TI99 Forever! by Fabrice Montupet:
http://www.ti99.com/

99er.net by Rich Polivka
http://www.99er.net/ti.shtml

Internet Forums (please consider joining, its free!):

Yahoo Groups; TI & Geneve e-mail forums:
https://groups.yahoo.com/neo/groups/ti99-4a/info
https://groups.yahoo.com/neo/groups/geneve9640/info

AtariAge – TI-99/4A Programming Forum:
http://atariage.com/forums/forum/164-ti-994a-computers/