Using GadgetPC with Matrix Orbital and Other Displays

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Overview

GadgetPC supports many displays including Matrix Orbital Displays with the use of **LCDproc**.

LCDproc is a client/server suite including drivers for LCD displays with serial interface.

The server **LCDd** makes it possible to display data in the form of text on an LCD display.

Client programs can connect to **LCDd** through common TCP sockets. Various clients are available. The *main* client is **lcdproc**, which is included with the **LCDproc** distribution.

lcdproc can connect to an **LCDproc** server either on the local system or on a remote system. It gathers statistics such as CPU utilization, memory utilization, disk utilization, network utilization, system uptime, time, and date displaying this information in customizable ways.

Parts Required

1 x GadgetPC
1 x ADP-5V1A-MiniUSB Power Adapter
1 x DUB-E100 Ethernet card or WUA-1340 Wi-Fi card (optional)
1 x Ethernet Cable (if using DUB-E100)
1 x LK204-24-USB-WB or similar Matrix Orbital Displays

Connect the various components as shown in *Figure 1*.

- The GadgetPC should be connected to a power source such as a computer or a ADP-5V1A-MiniUSB Power Adapter via a Mini-USB to USB Cable.

- The LK204-24-USB-WB Matrix Orbital Display should be connected to any one of GadgetPC's USB ports with a B-type to A-type USB cable.

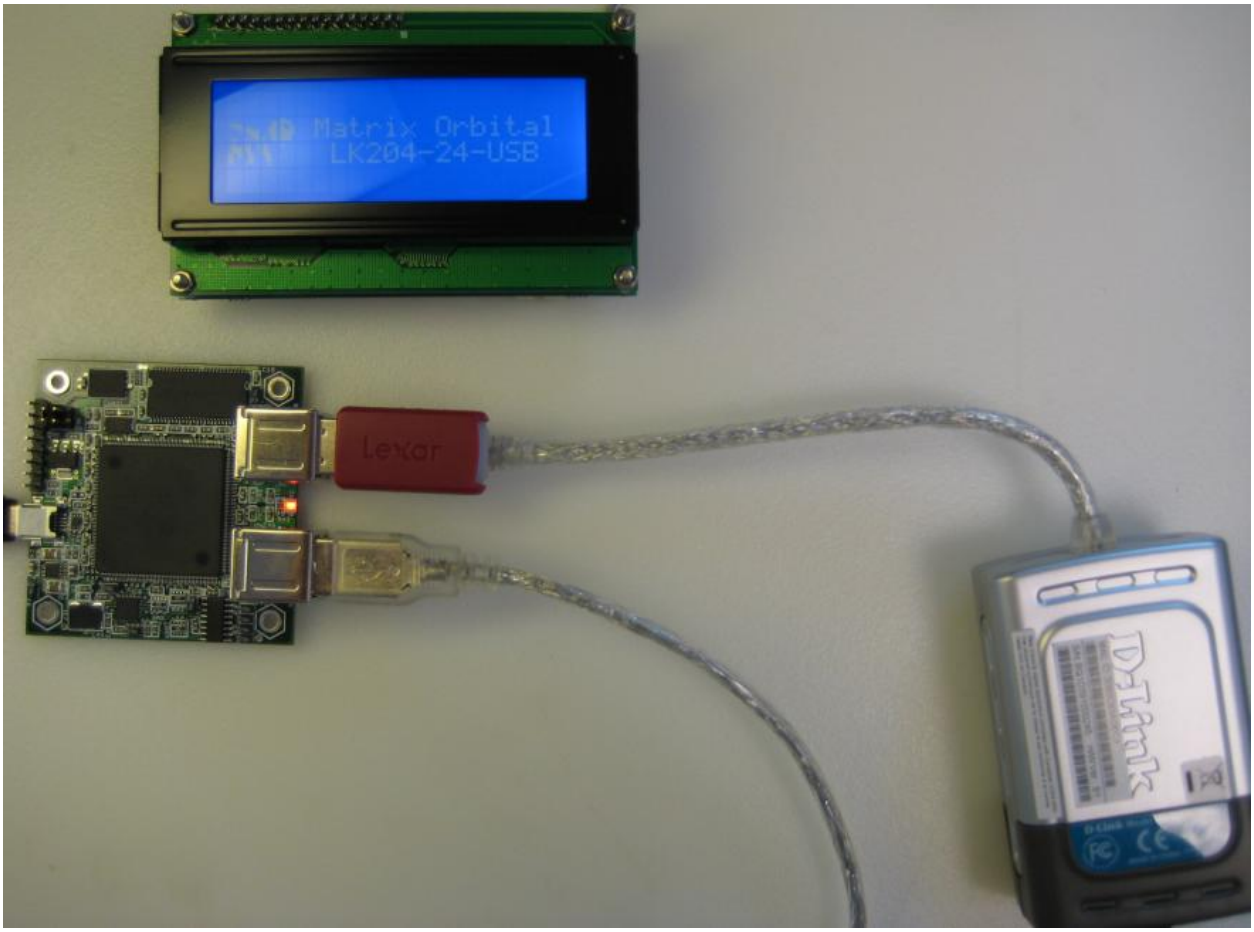
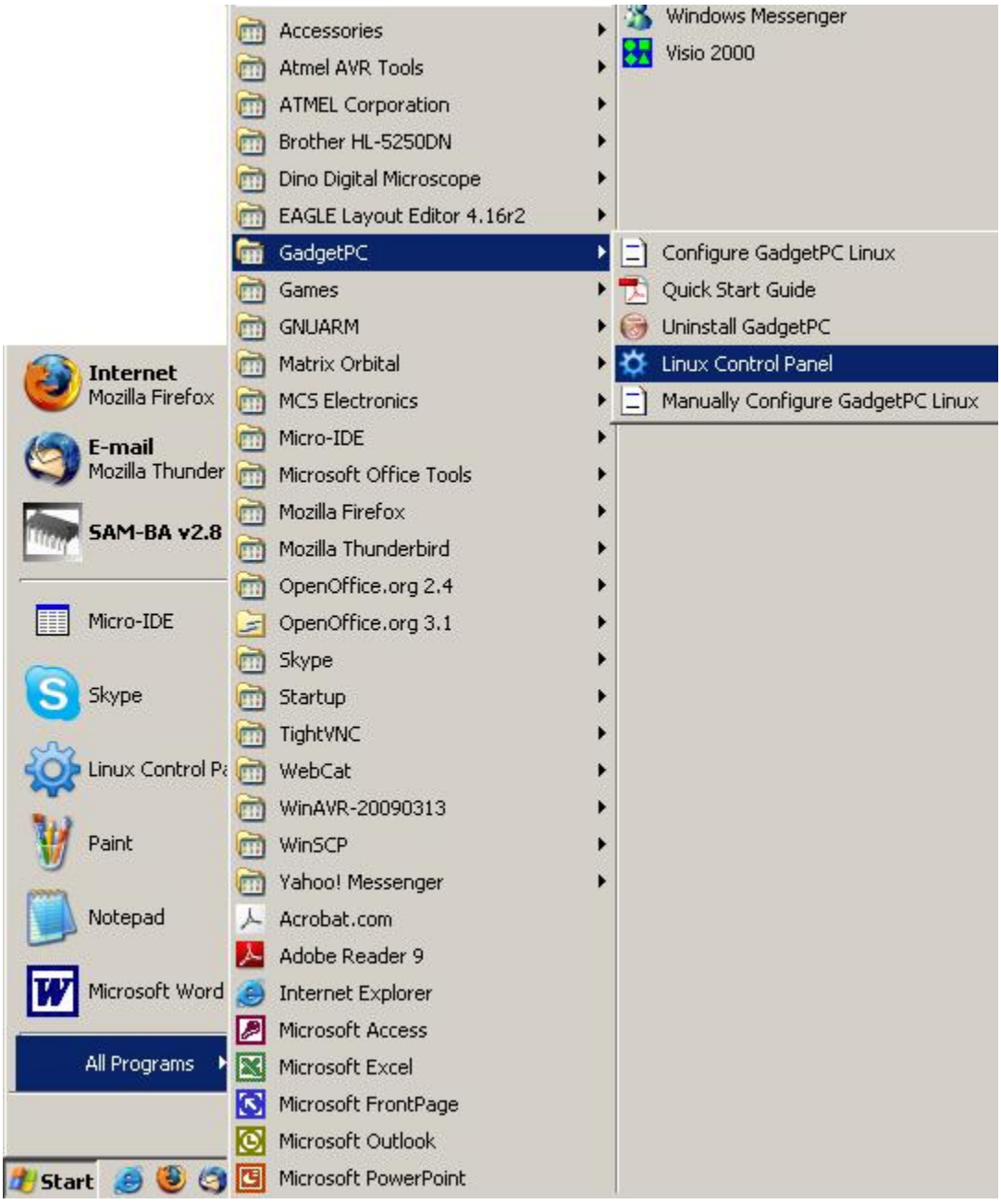


Figure 1.

Software Setup

We need to edit the Linux vars.sh file to enable certain configuration options.

1) Open **Linux Control Panel** that comes with GadgetPC setup. (Start Menu -> All Programs -> GadgetPC -> Linux Control Panel)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E-mail
Mozilla Thunder
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All Programs
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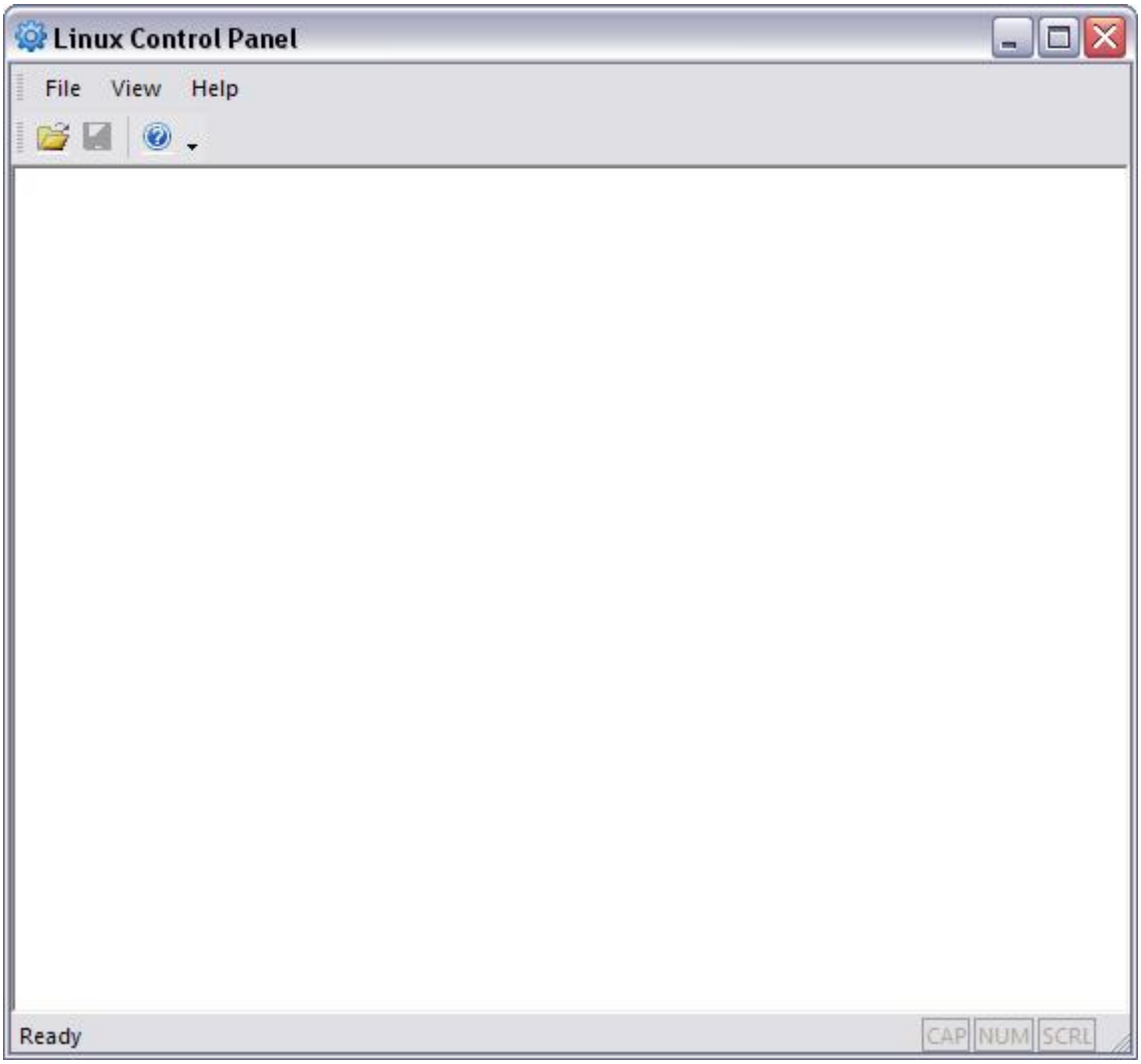
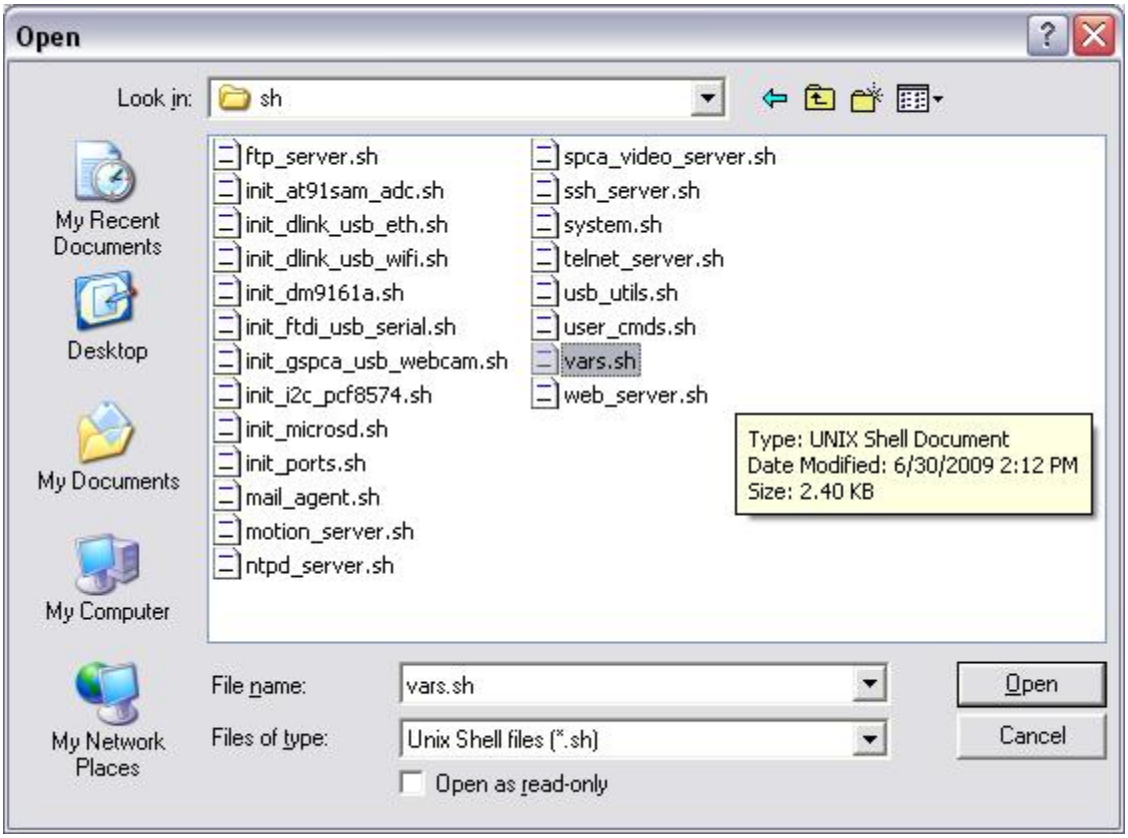
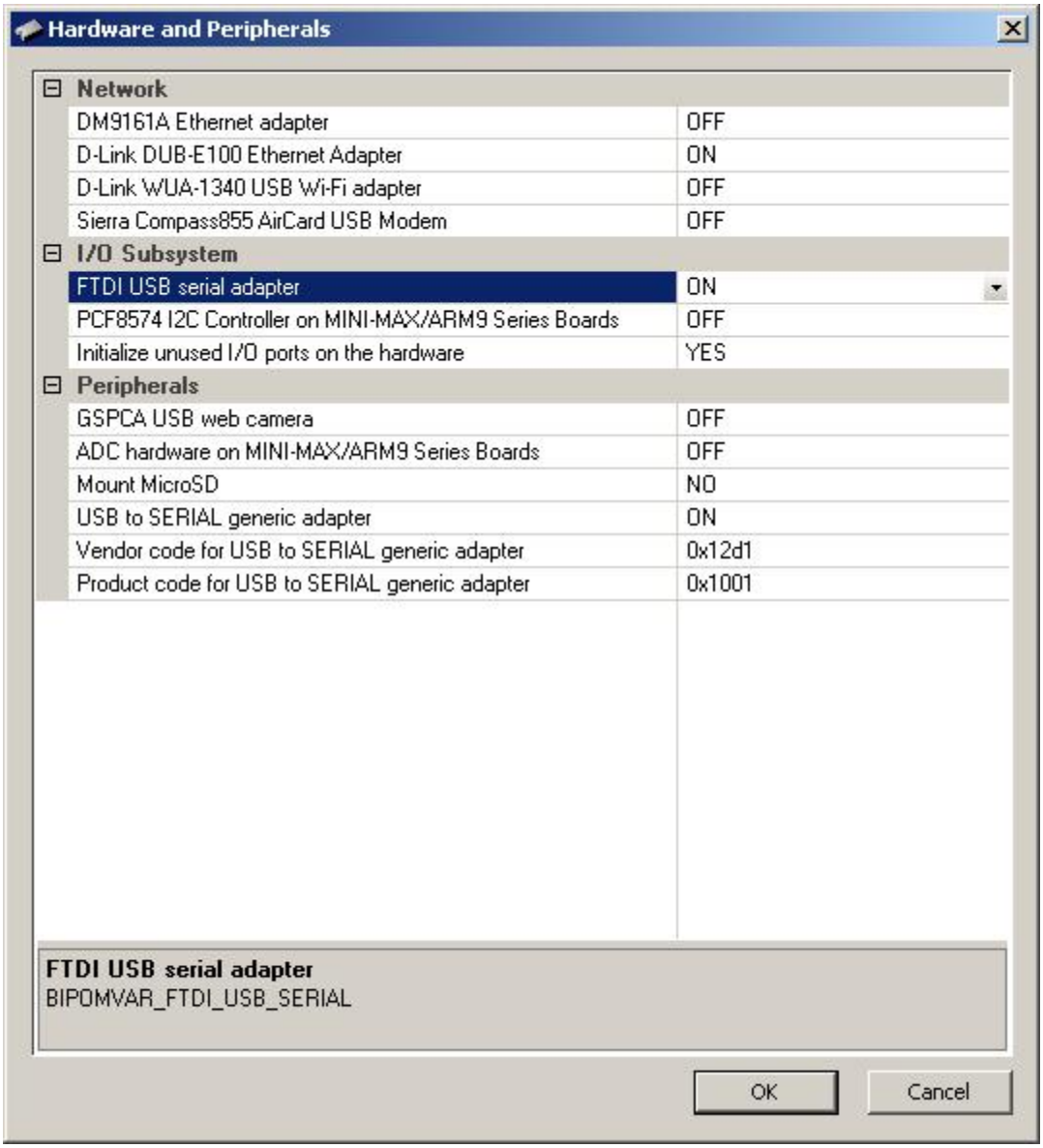
Accessories
Atmel AVR Tools
ATMEL Corporation
Brother HL-5250DN
Dino Digital Microscope
EAGLE Layout Editor 4.16r2
GadgetPC
Games
GNUARM
Matrix Orbital
MCS Electronics
Micro-IDE
Microsoft Office Tools
Mozilla Firefox
Mozilla Thunderbird
OpenOffice.org 2.4
OpenOffice.org 3.1
Skype
Startup
TightVNC
WebCat
WinAVR-20090313
WinSCP
Yahoo! Messenger
Acrobat.com
Adobe Reader 9
Internet Explorer
Microsoft Access
Microsoft Excel
Microsoft FrontPage
Microsoft Outlook
Microsoft PowerPoint
Windows Messenger
Visio 2000
Configure GadgetPC Linux
Quick Start Guide
Uninstall GadgetPC
Linux Control Panel
Manually Configure GadgetPC Linux



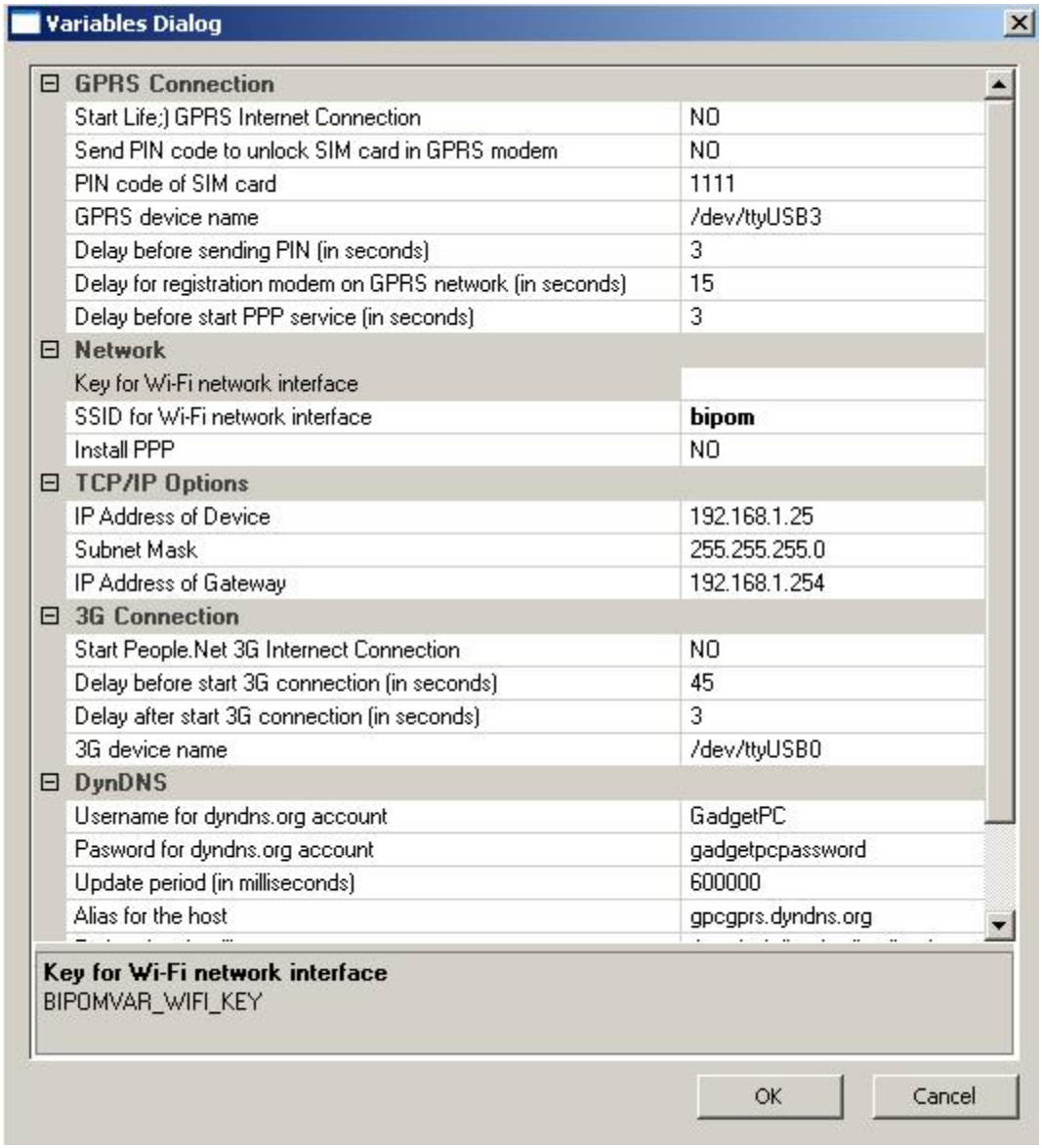
2) Click File -> Open. By default, program will start from folder where GadgetPC was installed. Go to **sh** folder and select **vars.sh** file.



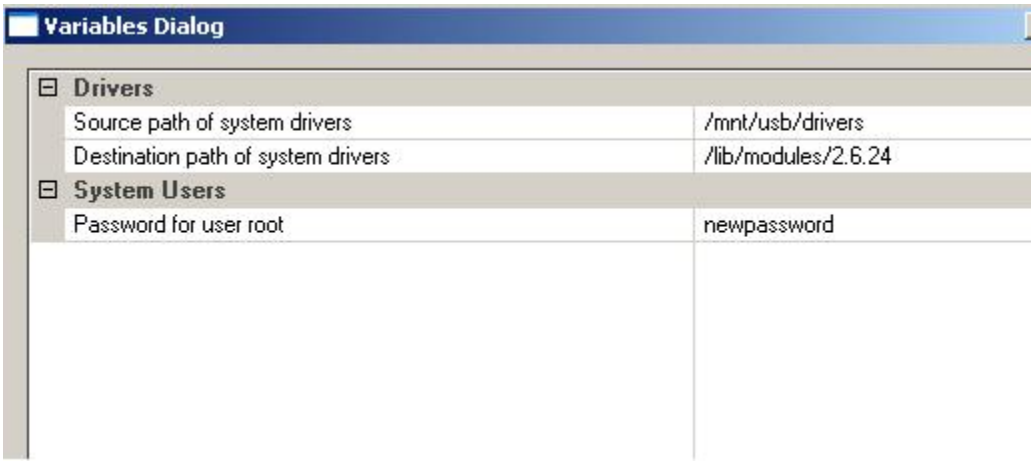
3) Double-click **Hardware and Peripherals** and enable **FTDI USB serial adapter** (Turned ON) and **DUB-E100** if using internet.



4) Assign an IP address, subnet mask, and gateway IP address under **TCP/IP Options**.



5) Double-click **System** and assign a root password.



6) Save the **vars.sh** file.

NOTE: Every time you access **vars.sh** file, you either need to have a temporary copy on your computer so that you can replace the actual copy on the USB Flash Drive or remove the USB Flash Drive from the GadgetPC and insert the USB Flash Drive into the computer for direct editing.

7) Insert the USB Flash drive to GadgetPC.

8) Apply or cycle power to GadgetPC (Turn OFF/ON).

9) After about 30-45 seconds, Linux will boot up and GadgetPC will be ready.

Using Matrix Orbital Display with LCDproc

1) Download **LCDproc** software from http://www.lcdproc.org/download.php3 (Other clients are available at http://www.lcdproc.org/clients.php3).

2) Log-in to the GadgetPC IP address you assigned by typing the following command:

- telnet xxx.xxx.xxx.xxx

  (where xxx.xxx.xxx.xxx is your IP address you assigned to the GadgetPC)

- Sign in with your username and password (default username/password: root/newpassword).

For a Splash Screen,

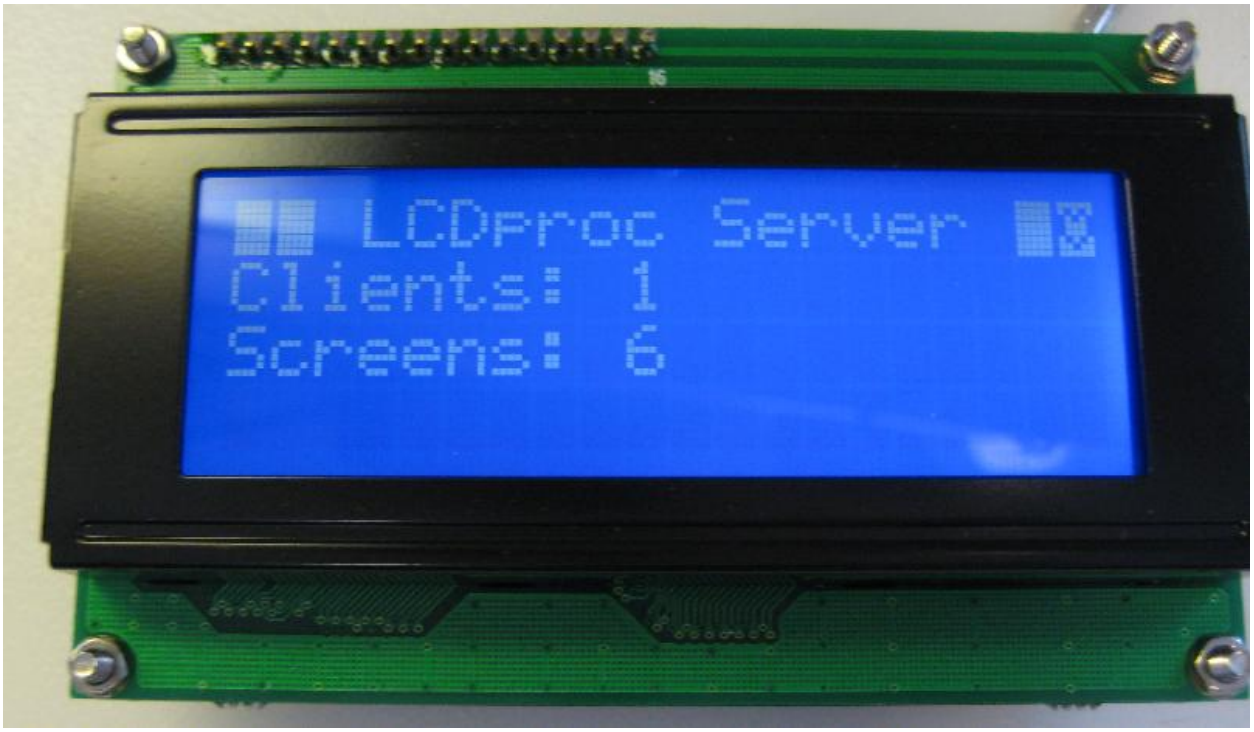
- Type the following commands exactly as follows:
  - cd /mnt/usb/lcdproc/sbin
  - **.**/LCDd

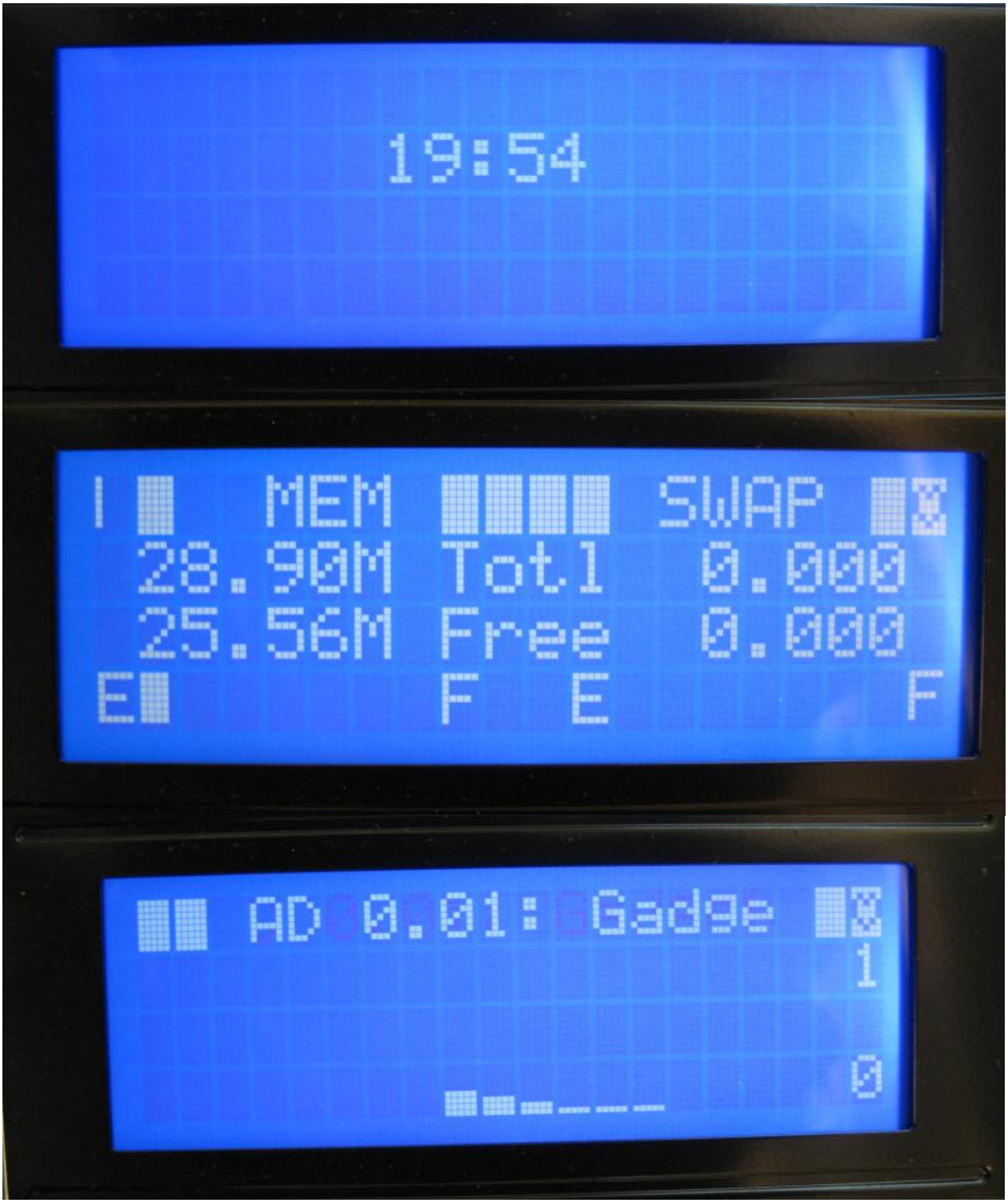
- The Matrix Orbital Display should show a splash screen with data on it.

For Rolling Updates*,

- Type the following command exactly as follows:
  - /mnt/usb/lcdproc/bin/lcdproc

- The Matrix Orbital Display should show rolling updates.

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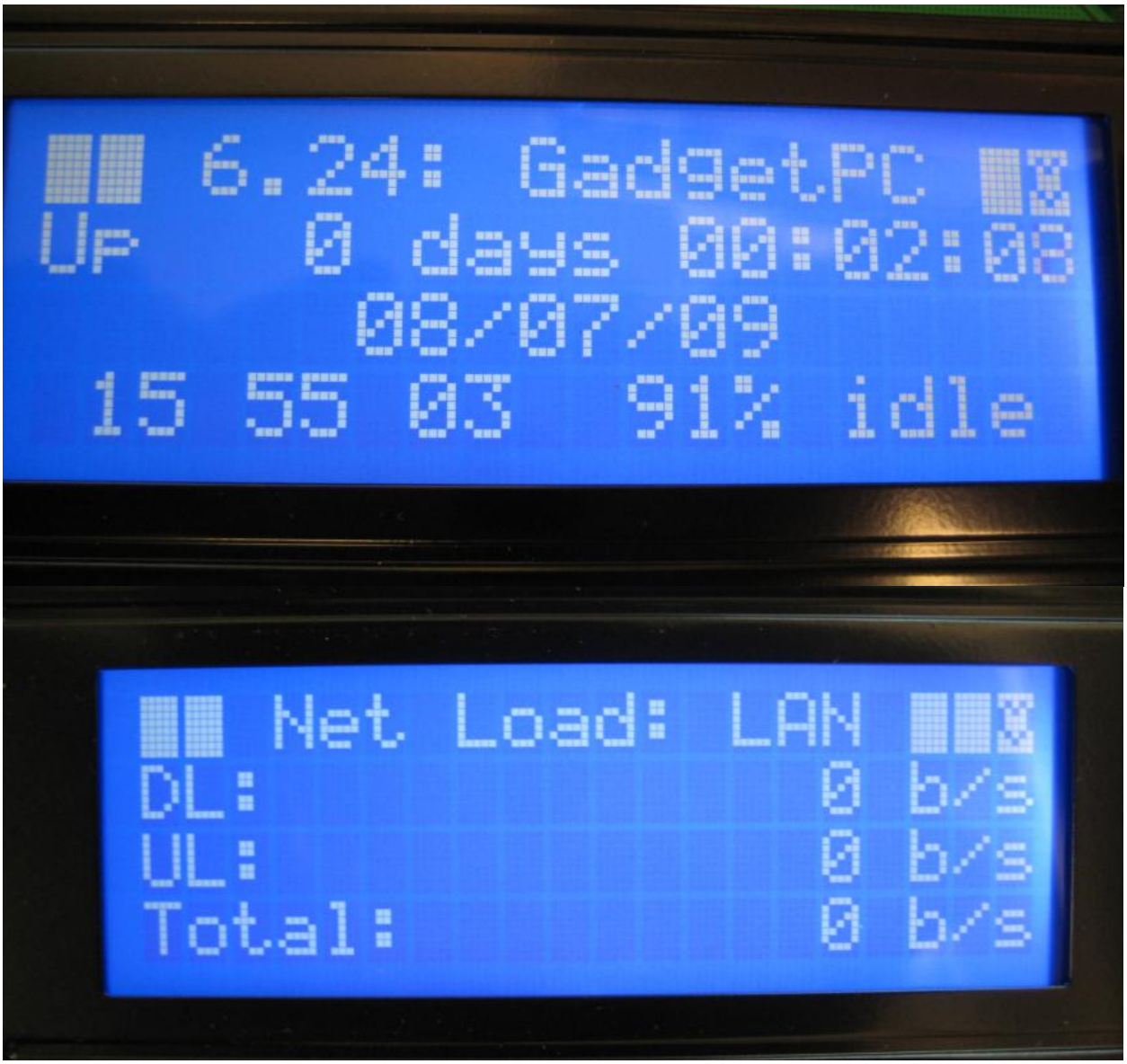
MEM
SWAP
28.90M Total
0.000
25.56M Free
0.000
AD 0.01: Gadge
1
0



*Rolling updates pertain to the LCD screen displaying unique data for a certain intervals. Each data screen transitions into the next with scrolling text.