![EFI Inkjet Solutions logo]

Field Technical Procedure

Document #	**FTP-00171, rev. F**
Issue Date	**July 5, 2016**
Affected Printer	**GS2000 and GS3200**

GS Series Software Installation Guide

Follow this procedure when installing the latest software revision on the affected printer

Caution! It is extremely important to backup the printer data tables prior to upgrading printer software.

Before Starting

Follow the instructions in this section prior to starting the procedure.

- For safety concerns, please read and understand the EFI Ink Jet Printer Safety Guide located at http://inkjet.support.efi.com/doc.php?doc=683 prior to attempting any service work on your printer.
- Verify you have the correct software revision to complete this procedure.
- This procedure takes approximately **45** minutes to complete.

Required Materials and Documents

The following materials are required:

45087086	GS2000 & GS3200 SOFTWARE INSTALLER DISC
FTP-00304	Ink RFID Tag Update https://inkjet.support.efi.com/doc.php?doc=1668

Revision History

Rev E	5/2/16	Added new Stage 2 in section "Print-side Installation" to cross-reference uploading motherboard drivers via section 7. Upgrading Software, New Motherboard Configuration
Rev F	7/5/16	Added note about FTP-00304 Ink RFID Tag Update in Required Materials and on pg. 13.

1. Pre-Installation

Before software installation, verify that the following parts of the system are properly configured.

A. BIOS Settings

The BIOS settings are configured on both the Control and the Print-side systems. To configure the BIOS, do the following:

1. Power up the system (control-side is on the left, print-side is on the right).
2. During boot up press **F2** to enter setup.
3. When the BIOS configuration screen appears, navigate to the **Exit** menu.
4. Select **Load Setup Defaults** and press **Enter**.
5. When the pop up window appears, select **Yes** and press **Enter**.
6. Navigate to the **Boot** menu. Set the boot order to the following list:
   1. USB CDROM
   2. All PCI SCSCI
   3. USB Key
7. Press **F10** to save these settings and exit BIOS configuration.
8. When the Popup window appears select **Yes** and press **Enter**.

B. OS Drive and RAID

Each system is attached to a group of six hard disks. The first hard disk is used to store the OS and VUTEk printer software. The remaining five hard disks are striped together into the RAID0 configuration. The RAID acts as the data drive and stores all of the user's image files and associated metadata.

It is extremely important that the RAID be correctly configured. Failure to properly configure the RAID will most likely result in a failed installation. One common issue with the RAID is loose/missing power or data connections. Therefore, it is essential to verify that each system recognizes all six of its hard drives during bootup.

C. Configure the OS and RAID Drives

1. Power-up the system.
2. During bootup, the system lists all of the drives it sees and prompts you to enter RAID setup. When the prompt appears, press **CTRL-I** to enter RAID setup.

   Note: If CTRL-I is not pressed within a few seconds, the system continues its boot process. If the prompt is missed, hit CTL-ALT-DEL and try again.

3. At the bottom of the screen, there is a list of all the hard disks attached and visible to the system.

   Note: If six disks do not appear, this means one or more drives are missing a power or data connection. Power off the system and verify that all power and data connections are properly connected and seated. Verify the data connections at the Motherboard as well as at the disks themselves. Do not continue to the next step until all six disks are reported during bootup.

4. In the RAID setup screen, select **Create RAID Volume.**
   a. On the Control-Side systems, name the RAID: RAID_CTL.
   b. On the Print-Side systems, name the RAID: RAID_PRN.
5. Select RAID0 (Stripe).
6. Select Disks:
   a. Select disks one through five as part of the RAID by highlighting the entry for each disk and pressing the Space bar (a small green triangle will appear next to drives that are selected).
7. Select a stripe size of 128 Kb.
8. Create the volume.
9. The system pauses for a few seconds while the RAID volume is being created.
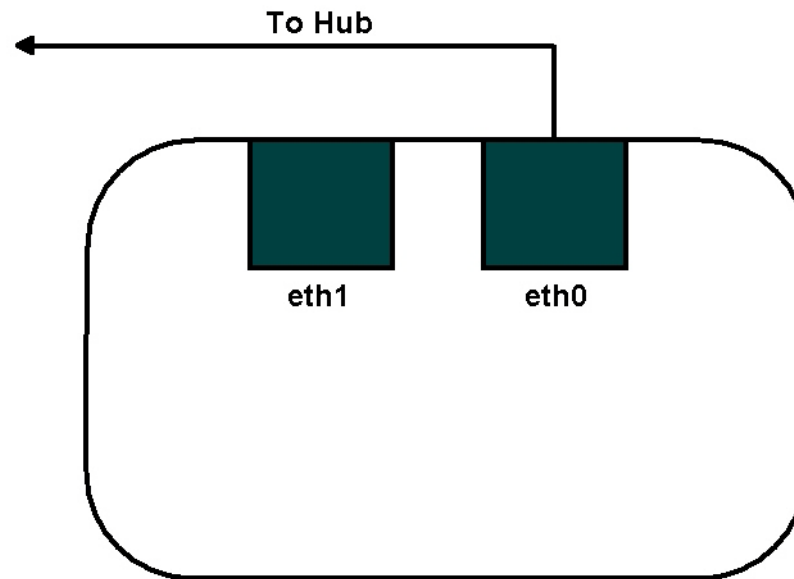10. Once the RAID volume is created, click **Exit** from the **Configuration** menu.

D. Serial Server

The Serial Server is used by the Control-side system and is configured during the control-side installation process only. Before installing, ensure that the Serial Server is online by performing the following steps:

1. Proceed to the ink cabinet and verify that the Serial Server is on.
2. Verify that the Serial Server is connected to the hub via an Ethernet connection located in the Electronics cabinet.

   Note: The serial server is typically connected to the hub with a purple Ethernet cable.

3. Look at the back of the Serial Server (access through the waste cabinet) and note its MAC address.
   a. The MAC address is on a small white tag that is labeled *MAC Address.*
   b. The MAC address is 12 characters long and typically starts with: 00409D.
   c. Be sure to write down all 12 characters shown in the MAC address (this information will be necessary during the install).
4. In the Electronics cabinet, verify that the ethernet connection from the Serial Server is attached to the Ethernet hub.
5. Verify that the Control system's **eth0** network interface is connected through the ethernet to the network hub. The **eth0** interface is the right-most network port as shown in Figure 1-1:

Figure 1-1: Control/Print System

    6.   Verify that the Ethernet hub has power.

2. Installation

Installing software on GS Series printers must be done on both the Control and Print systems. The Control system is located on the left-side of the Electronics cabinet; the print system is located on the right.

Installation is a two stage process. During Stage 1, the base Linux Operating system is installed from the DVD to the OS drive. During stage 2, the VUTEk software is installed. At the end of each stage, the system must be re-booted. Each version of software may or may not require installation of the operating system. Use the table below to determine if the current version requires a complete installation. If the version does not require a complete install, refer to Appendix A: Update Software Procedure for the upgrade only installation process.

Version #	OS Install	VUTEk Software Install
01.07.03	X	X

Time to complete a full install is approximately 30 minutes per system.

Before you Begin

1. Verify that all pre-installation steps described in 1.Pre-Installation are complete.
2. Power off **both** control and print systems.

   Important: Disconnect any external USB storage devices (e.g., USB Hard Drive, USB Keys) from the system before installing. Failure to do so may result in the Linux OS being installed on the external USB storage device rather than the OS hard drive.

A. Control-Side Installation

Stage One

1. Verify that Port One on the KVM switch is active.

   Notes: The KVM switch is located inside the right side of the Electronics cabinet.

   Notes: Port 1 is active when the top LED on the KVM switch is illuminated.
2. Turn the Control-side system **On**.
3. Insert the installation DVD into the Control-side CD/DVD drive in the bottom of the Electronics cabinet.
4. Re-boot the system by pressing **CTL-ALT-DEL**.
5. The System will boot off the disk and the Boot screen appears.

Figure 1-2: Initial GS Installer Boot Screen

6. Press **ESC** or **ENTER** to select **English** and close the language menu.

   Note: Only English is currently supported by the installer.

7. After the language menu closes, the installer boot menu is visible. Navigate to the Install **GS2000/GS3200 Control Software** menu and press **Enter**.

Figure 1-3: GS Installer Main Menu

8. Stage one of the install process will begin. This process takes approximately 20-30 minutes.

9. During the install, the InkPathGraph Installation Utility dialog will open. Select the top radio button to indicate that the printer uses a 2nd generation tank configuration, i.e., heated secondary ink tanks. Select the bottom radio button if your printer uses the original secondary ink tank configuration.
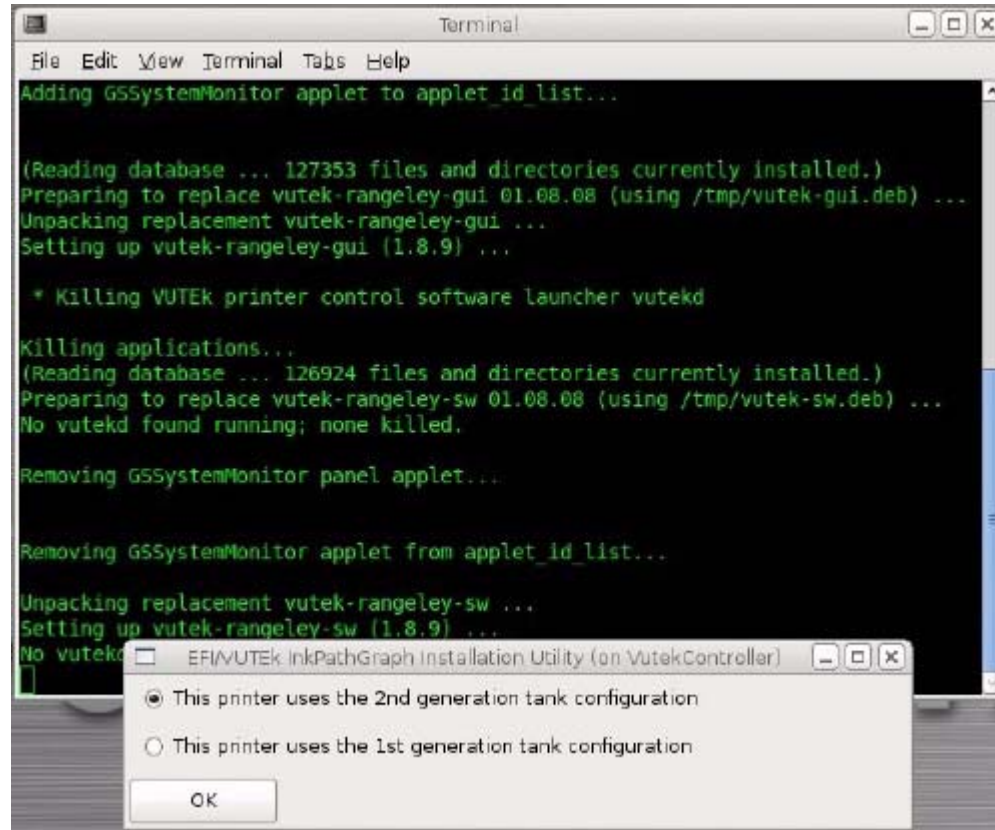
Figure 1-4: EFI/VUTEk InkPathGraph Installation Utility

Stage Two

After Stage One is complete, the system ejects the disk from the drive and restarts. The system then boots into the Linux OS that was just installed. Once the booting process is complete : VUTEk Control screen appears.

Figure 1-5: VUTEk Control screen

1. Insert the installer disc back into the CD/DVD drive.
2. Wait approximately 15-45 seconds while the system detects the disc. When the system has detected the disc, an icon appears on the desktop labeled **VUTEk SW Install DVD**.
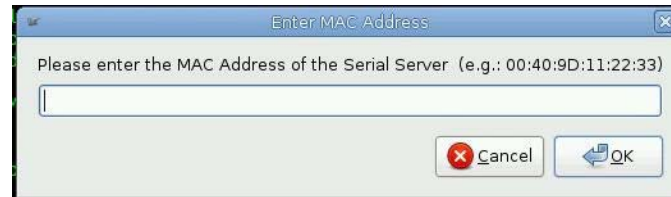3. Once the VUTEk SW Install DVD icon appears, double-click on **GS2000/GS3200 Installer** to run the installer.

Figure 1-6: Vutek Control screen showing the VUTEk SW Install DVD

4. After double-clicking on the **GS2000/GS3200 Installer** icon, the installer will run and prompt for confirmation to begin the install.

Figure 1-7: VUTEk Control screen DOS prompt

5. Select **OK** to start the install.
6. During installation of the Control-side system, the installer will prompt for the MAC address of the serial server.
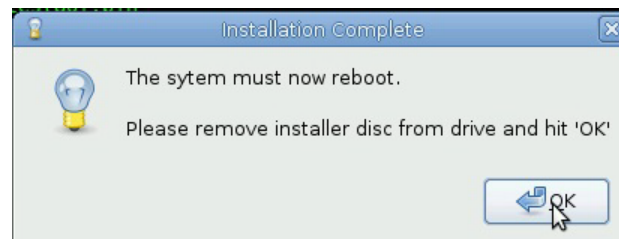

Figure 1-8: Enter MAC Address screen

Enter the MAC address you wrote down during the pre-installation steps. Be sure to enter the MAC address in the following format: xx:xx:xx:xx:xx:xx

Example: MAC Address: 00409D112233

Enter: 00:40:9D:11:22:33

7. When stage two of the installation is complete, the Installer disc is ejected from the CD/DVD drive and the following dialog box appears.

Figure 1-9: System must now re-boot screen

8. Remove the Installer disc from the drive and click **OK** in the dialog box. This will cause the system to automatically reboot.

B. Print-Side Installation

Stage One

1. Make sure that Port two on the KVM switch is active.

   Note 1: The KVM switch is located inside the right side of the electronics cabinet.

   Note 2: Port 2 is active when the bottom LED on the KVM switch is illuminated.

2. Insert the installation DVD into the print-side's CD/DVD drive. This drive is located in the printer's dashboard just below where the Monitor and keyboard sit.
3. Reboot the system by pressing **CTL-ALT-DEL**.
4. As described in Serial Server, the system will boot off of the installation disc and bring up the language selection screen. As before, press **ESC** and **ENTER** to select **English**.
5. Select **Install GS2000/GS3200 Print software** to begin the Stage one install.

Stage Two

1. Load drivers for the motherboard. See 7. Upgrading Software, New Motherboard Configuration

Stage Three

Stage two installation of the Print-Side system is almost identical to the Control-Side installation. The only difference is that the installer does not prompt for the serial server MAC address. Once the Print-Side installation of Stage two is started, it will run to completion without prompting the user until it is complete.

When the Stage two Print-Side install is complete, the Installer disc is ejected and the system automatically restarts. Upon restart the VUTEk software automatically starts and the GUI opens.

Important! See **FTP-00304 Ink RFID Tag Update** for instructions on installing the RFID Tag software update for GS3200 printers.

https://inkjet.support.efi.com/doc.php?doc=1668

3. Post-Installation

Once installation is complete and both the Control and Print systems have been re-booted, the printer is ready to use.

4. Known Issues

While every effort has been made to make the installer as stable and error-free as possible, there are a small number of outstanding known issues. These issues (with work-arounds if they exist) are described below.

5. Error Starting the GNOME Setting Daemon

Issue

Occasionally on the first re-boot after an install, the following error dialog boxwill appear.

Figure 1-10: Error dialog box

Workaround

This warning message can be safely ignored. Click **Close** to close the dialog and resume operation.

6. Appendix A: Update Software Procedure

The install procedure described in this document explains what is termed a "full install." During a full install, the system's hard drives are formatted and the operating system and VUTEk printer software is reinstalled using factory defaults. Under this type of install, all customized settings and user data is destroyed. Typically, a full install is only necessary when the Linux operating system needs to be updated, in the case of a catastrophic data corruption, or hard drive failure.

Moving to an updated version of just the VUTEk printer software rarely requires a full reinstall. Instead, users may perform what is called an "update install." During an update install, only the VUTEk printer software is changed. The system hard drives are not formatted and user data such as image files and customized settings are preserved. Since an updated install only changes a small subset of software components on the system, it is very quick to do; a typical upgrade install takes only a few minutes.

The following steps explain how to perform an update install. All steps should be performed using the Print-Side system.

1. Stop all active print jobs.
2. Insert the OS/Printer Software DVD into the DVD drive mounted in the printer's dashboard (this is the drive that connected to the print-side system).
3. The system will automatically mount the disc. After 5-15 seconds, the system will present the following dialog box appears.

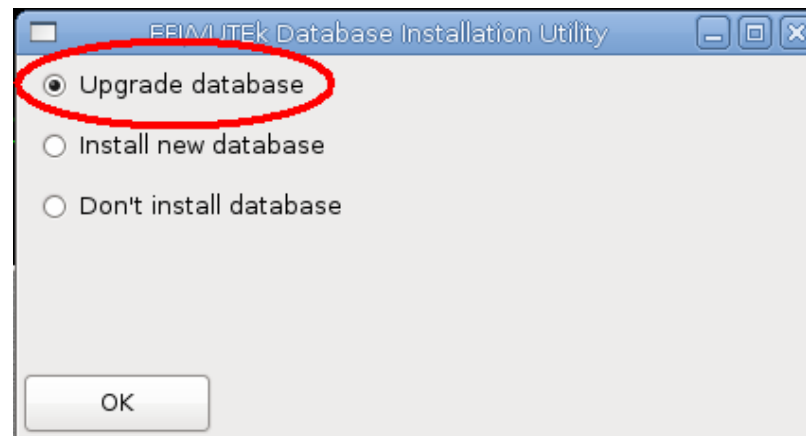**Figure 1-11: VUTEk SW Install DVD screen**

> **Note:** When upgrading from releases before 00.06.05, you may also see the following dialog box appear after inserting the DVD.

Figure 1-12: Upgrade volume detected screen

If presented with this dialog box, dismiss it by clicking on the "cancel" button or by closing the dialog box by clicking the **X** in the upper-right corner of the window.
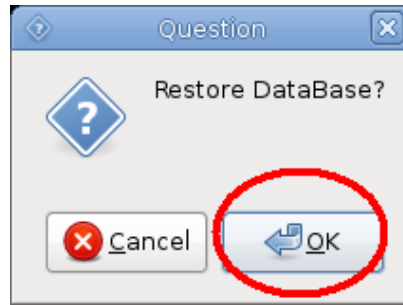
4. The upgrade process will ask the user for confirmation to do the update, and then will begin by upgrading the software on the print-side system. During this process, the user will be prompted to specify how the database should be updated. In almost all cases, the user should select **Upgrade Database**. This will backup the contents for the existing database (e.g., voltage settings, head settings, etc.) and import any database tables new to the updated release.

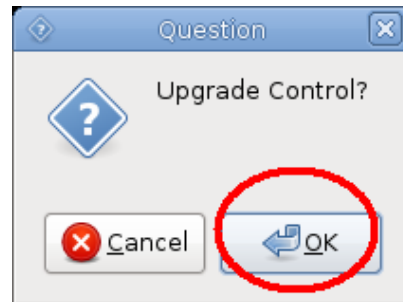**Figure 1-13: Database installation utility screen**

5. Once the databases have been upgraded, the user will be asked whether or not to restore the database with the backed up database with the backed up data. Always click **OK** in response to this question.
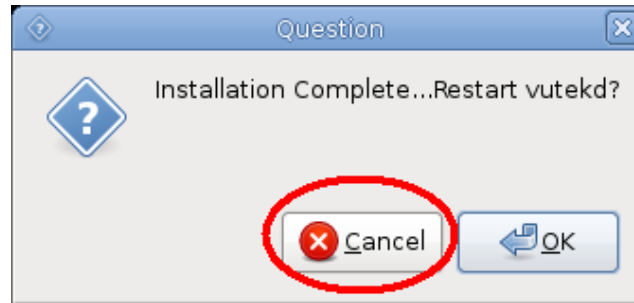
Figure 1-14: Restore database screen

6. Next, the update script will ask the user whether or not to update the software on the control-side system as well. Users should always click **OK** here to ensure that both Print and Control side systems are running the same version of software.

Figure 1-15: Upgrade control screen

7. The user is asked how to proceed with the control system's database. Again, the user should select **Upgrade Database** then click **OK** when prompted to restore the database.

8. At this point, the upgrade is complete and the VUTEk software needs to be restarted in order for the newly updated software to run. The updater script will offer to restart the software (on both the control and print systems). However, this feature is not currently functioning. Therefore, when prompted with the dialog box shown below the user should select **Cancel**.
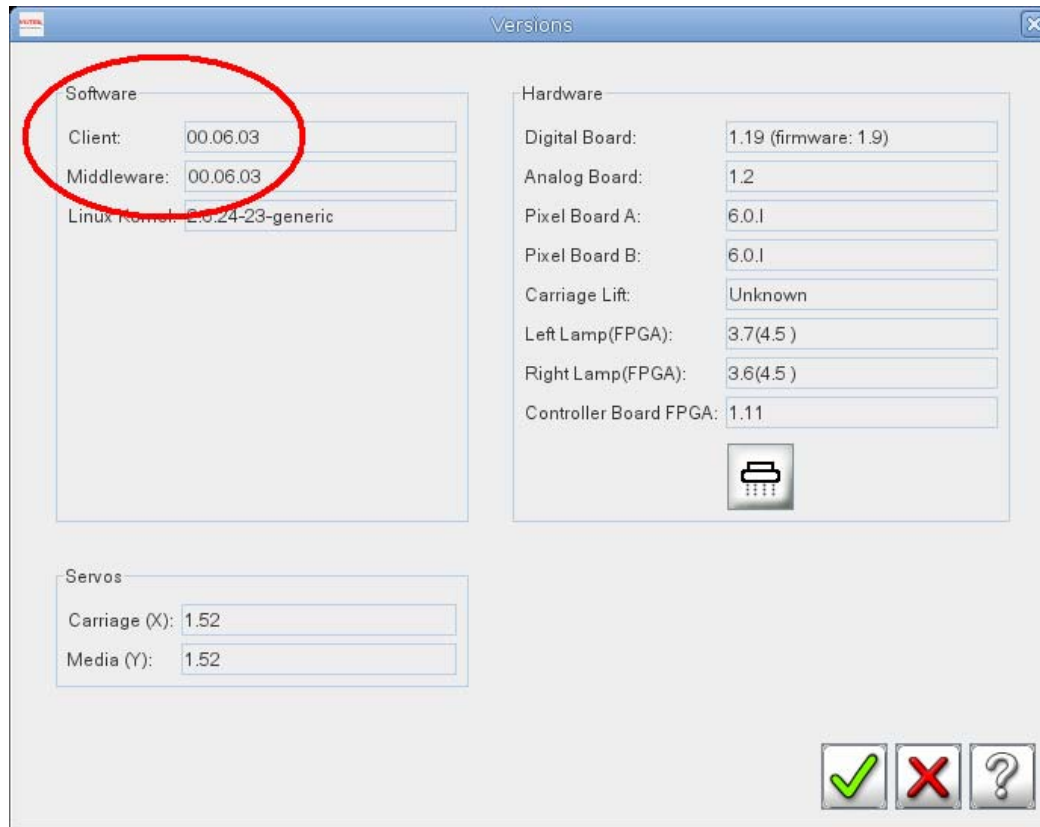
Figure 1-16: Installation complete screen

9. To manually restart the VUTEk software, double-click on the **Print VUTEkd** and **Control VUTEKd** icons on the desktop. Clicking on each of these icons will prompt a dialog box to appear that is identical to the one shown in step 8. At this point, the upgrade is complete and the VUTEk software needs to be restarted in order for the newly updated software to run. The updater script will offer to restart the software (on both the control and print systems). However, this feature is not currently functioning. Therefore, when prompted with the dialog box shown below the user should select Cancel.. However, in this case, the user should select **OK**. The VUTEk software on both the Print and Control-side systems should restart within a minute or two.

Figure 1-17: Control VUTEkd and Print VUTEkd icons

10. To verify the new version of software is running, select **Service** > **Versions** from the VUI. The software version that is currently running is displayed in the Software section on the left side of the dialog box as shown.

Figure 1-18: Software versions screen

11. Once the new software is running, remove the installation disc from the DVD drive.
12. Proceed to Upgrading Software, New Motherboard Configuration.

7. Upgrading Software, New Motherboard Configuration

Follow these instructions if one or both motherboards have been replaced and are a newer revision than the existing motherboards.

1. Insert **Motherboard Update CD** and double click on **UpdateVideoConfig.sh**.

    Note: This Motherboard Update portion only needs to be completed when a new motherboard is installed into printer.

2. Click on **Run in Terminal**, Figure 1-19 : Run in Terminal selection. This updates the Video Configuration file used by the GUI and will provide the correct screen resolutions.
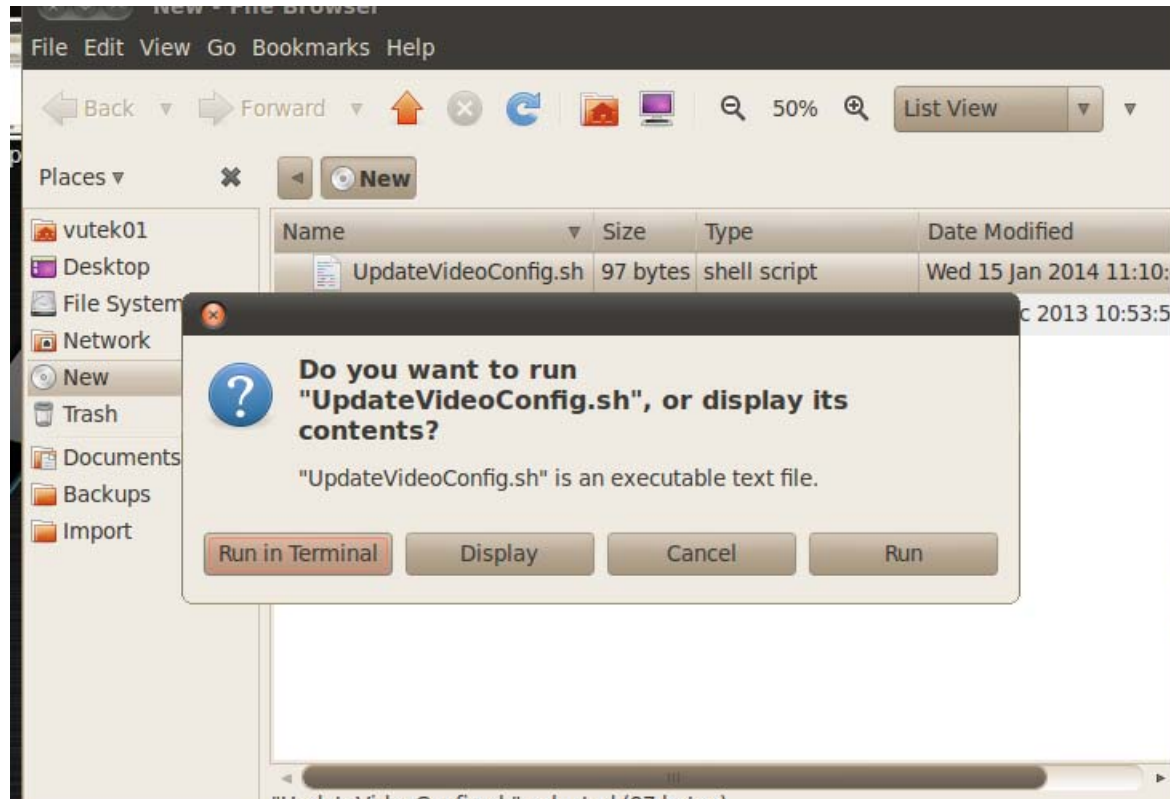

Figure 1-19: Run in Terminal selection

3. Eject CD and click **OK** to reboot the system.
4. When printer restarts, VUI software automatically starts.
5. Repeat the process for dual motherboard configurations; this procedure must be performed on both **Print** and **Control** sides.

    Note: The file **UpdateVideoConfig.sh** is also available from the FTP site.

Upgrading Ethernet Drivers, New Motherboard Configuration – Print and Control Side

Follow these instructions if one or both motherboards have been replaced and are a newer revision than the existing motherboards.

1. Insert **Motherboard Update CD** and double click on **Installethernetdrivers.sh**.

   Note: This update portion only needs to be completed when a new motherboard is installed into printer.

2. Click on **Run in Terminal**. This will update the Ethernet Configuration file used by the system and will provide the correct Ethernet connections.
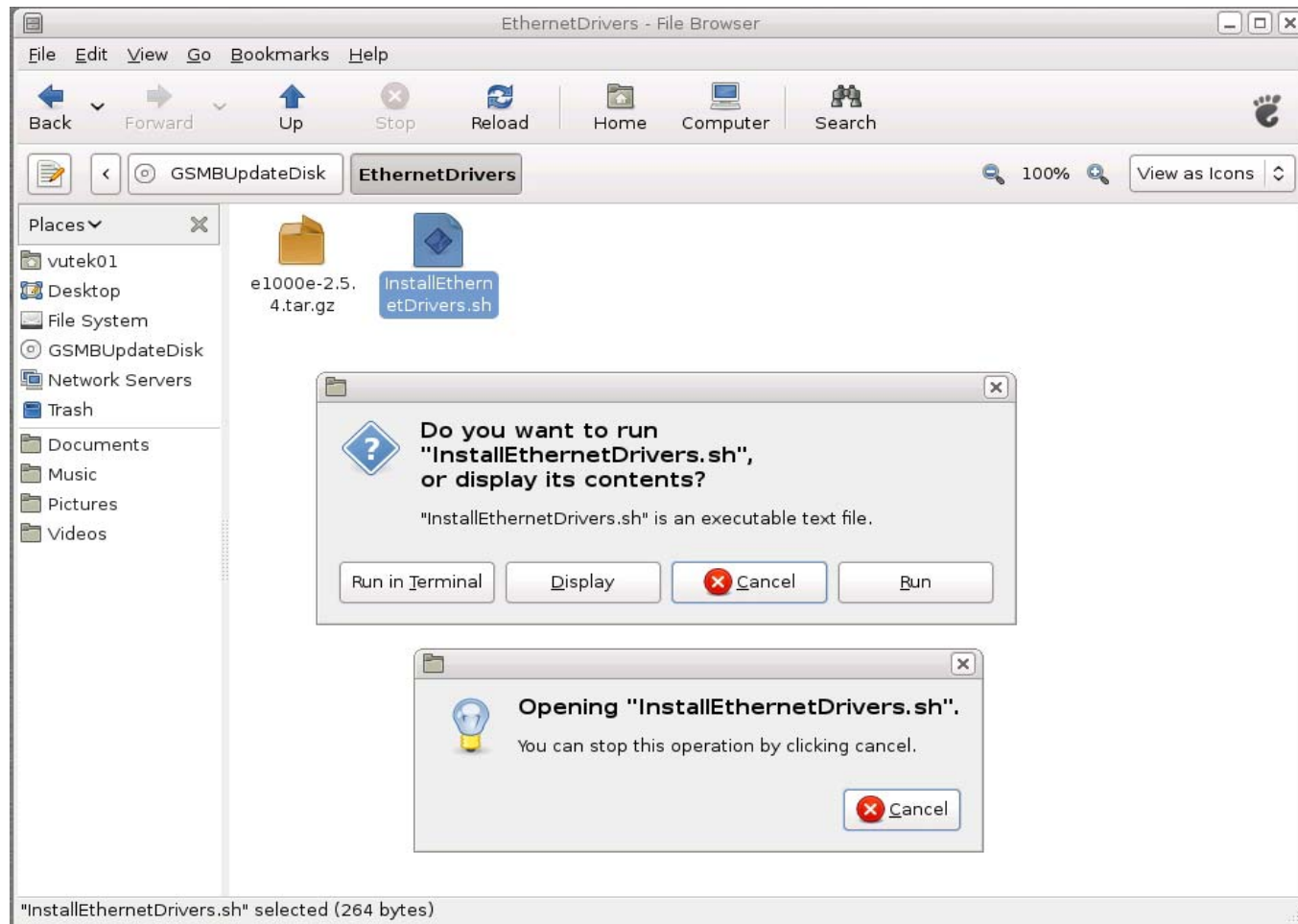
Figure 1-20: Run in Terminal selection

3. Eject CD and click **OK** to reboot the system.
4. When printer restarts, VUTEk software automatically starts.
5. For dual motherboard configurations, this procedure must be performed on both Print and Control sides.

Note: The file **Installethernetdrivers.sh** is also available from the FTP site.