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DCP HARDWARE/FIRMWARE FIELD UPDATE PROCEDURE

REVISION 3

DCP SETUP SOFTWARE

SOFTWARE VERSION 1.73, BUILD 1.736

5/6/97

INTRODUCTION

This document covers the installation of the DCP Setup Software and the procedure for upgrading the processor board and firmware in an operational DCP unit.

This upgrade procedure is intended for existing DCP units in the field which are running firmware version ~~1.37~~ 2.1 and using processor board A-8080-844-A. The DCP Setup Software is used to upload and download critical firmware files residing in the DCP unit.

This document only covers the field upgrade of existing DCP processors. For details on the use of the DCP processor and setup software, please consult the DCP Operations and Maintenance Manual.

FIELD UPGRADE OVERVIEW

The purpose of the DCP field upgrade is to replace the existing CPU card and upgrade the firmware to version 2.11 without destroying the existing tuning and calibration settings residing in the DCP unit. The DCP field upgrade consists of the following steps.

1. Installation of the DCP Setup Software on a laptop or desktop PC running Windows 3.1, Windows 3.11 or Windows 95.

2. Uploading the new DCP firmware version 2.11 into the existing DCP CPU card.

3. Downloading of the SETUP.DAT file from the DCP processor. SETUP.DAT contains the current tuning and calibration settings in the DCP processor.

4. Replace the CPU card. Upload new DCP firmware version 2.11 into the new DCP CPU if not already installed.

5. Upload the SETUP.DAT file (created in step 3) from the PC to the new DCP CPU card.

SETUP SOFTWARE INSTALLATION

PC INSTALLATION

To ensure proper operation of the DCP Setup Software, install the software using the following procedure.

1. Turn the PC on and allow Windows to start. If Windows doesn't automatically start when the PC is powered on, enter **WIN** at the MS-DOS prompt to start Windows. For additional details on starting Windows, see your Windows documentation.

2. Insert the 3.5" DCP Setup Software installation disk into drive A or B.

3. If installing the software on a PC running Windows 3.1 or Windows 3.11, choose the **Run** command from the **File** pull-down menu in the Windows Program Manager. In the **Command Line** box, type **a:install** if you inserted the installation disk in drive A or **b:install** if you inserted the installation disk in drive B. If installing the software on a PC running Windows 95, choose the **Run** command from the **Start** pop-up menu. The **Start** button is located in the lower left-hand corner of the main Windows 95 display. See the Windows documentation for additional information regarding the **Run** command.

4. If a previous version of the DCP Setup Software is already installed, the installation software will display the following list of options.

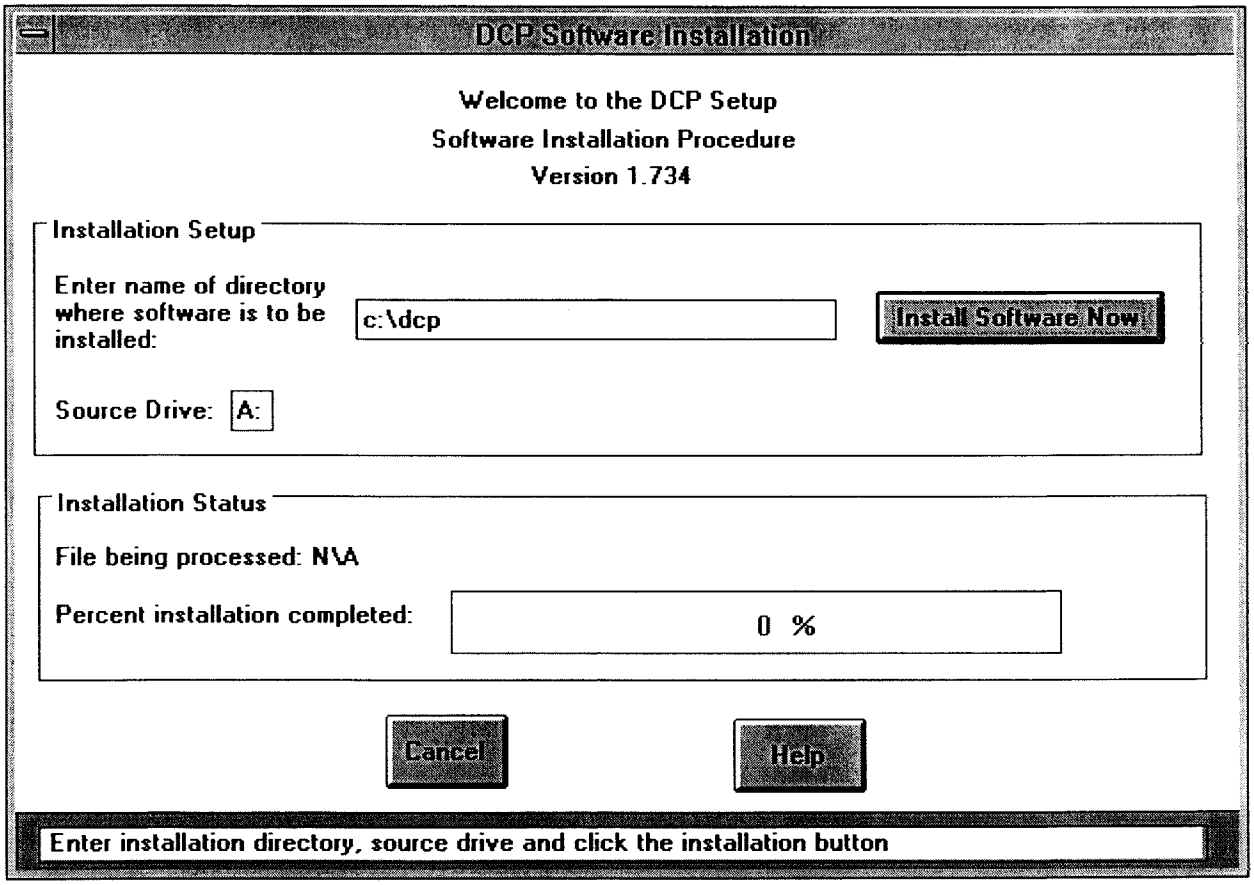
   De-install - removes the currently installed version of the DCP Setup Software from the system. **The DCP file directory and existing project files (if any) are not removed.**

   Upgrade - only replaces the DCP program files that have changed since that last installation of the software. The existing DCP.INI file and project files are not overwritten or removed.

   Full - A full installation is performed. (see step 5). Any project files found in the current DCP installation directory will be copied to the new file directory.

Choose the appropriate option. If **de-install** or **upgrade** is chosen, the specified action is performed and the installation software will terminate. A new DCP program group will be installed in the Windows Program Manager (if the **upgrade** option is chosen).

5. If this is the first time the DCP Setup Software is being installed on the system or if the **Full** option is chosen in step 4, the following installation display is presented.



Enter the path name where the software should be installed (**default is c:\dcp**). If the source drive is incorrect, enter the disk drive designation where the installation disk resides (**default is A**:) If using the keyboard, TAB to the respective fields and enter the data. To start the software installation, click the **Install Software Now** button (or if using the keyboard, TAB to the button and then press the ENTER key). The installation software will then copy the DCP program files from the installation disk to the specified directory. The installation procedure should take about 2 minutes. The DCP Setup Software requires about 1.5 Mbytes of hard disk space. Once the installation is complete, a DCP program group will be active in the Windows Program Manager.

DE-INSTALLATION

Use the following procedure to remove the DCP Setup Software from the PC.

1. In the DCP program group, double click the mouse on the DCP Install icon.

2. The installation software will display the following list of options.

   De-install - removes the currently installed version of the DCP Setup Software from the system. **The DCP file directory and existing project files (if any) are not removed.**

Upgrade - only replaces the DCP program files that have changed since that last installation of the software. The existing DCP.INI file and project files are not overwritten or removed.

Full - a full installation is performed. (see step 5 above under **Installation**). Any project files found in the current DCP installation directory will be copied to the new file directory.

Choose the **de-install** option. The DCP program files will be removed. In addition, the DCP program group icon in the Windows Program Manager will also be removed. The installation software will then terminate.

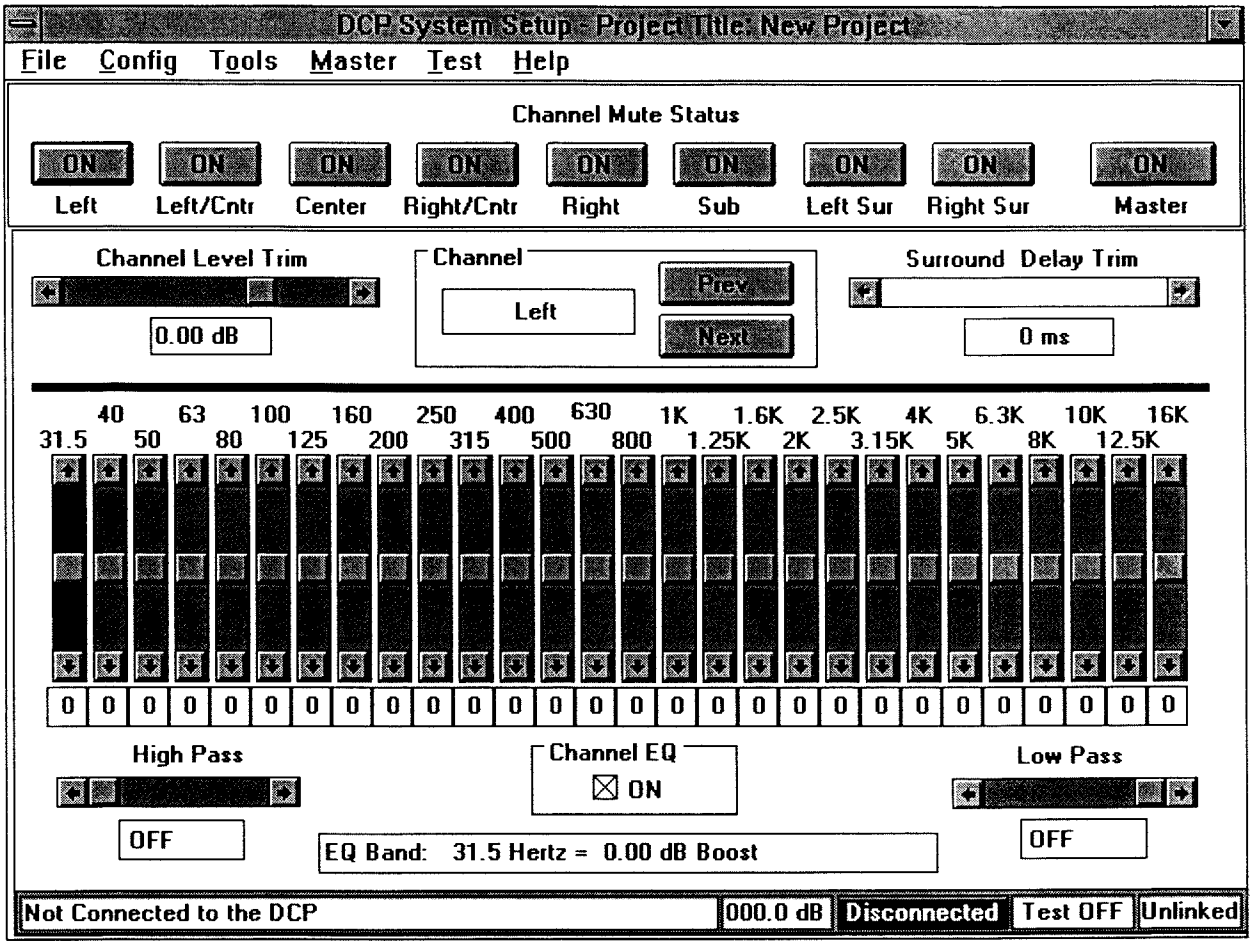
NEW FIRMWARE UPLOAD PROCEDURE

New firmware is uploaded to the DCP unit via the high speed serial port located on the rear panel of the DCP processor. The DCP Setup Software has a built-in Xmodem transfer protocol that ensures accurate transmission of firmware files from the PC to the DCP hardware. The use of the DCP Setup Software eliminates the need for using a third-party communications application to upload new firmware.

The following describes the steps required to upload new firmware to the DCP processor.

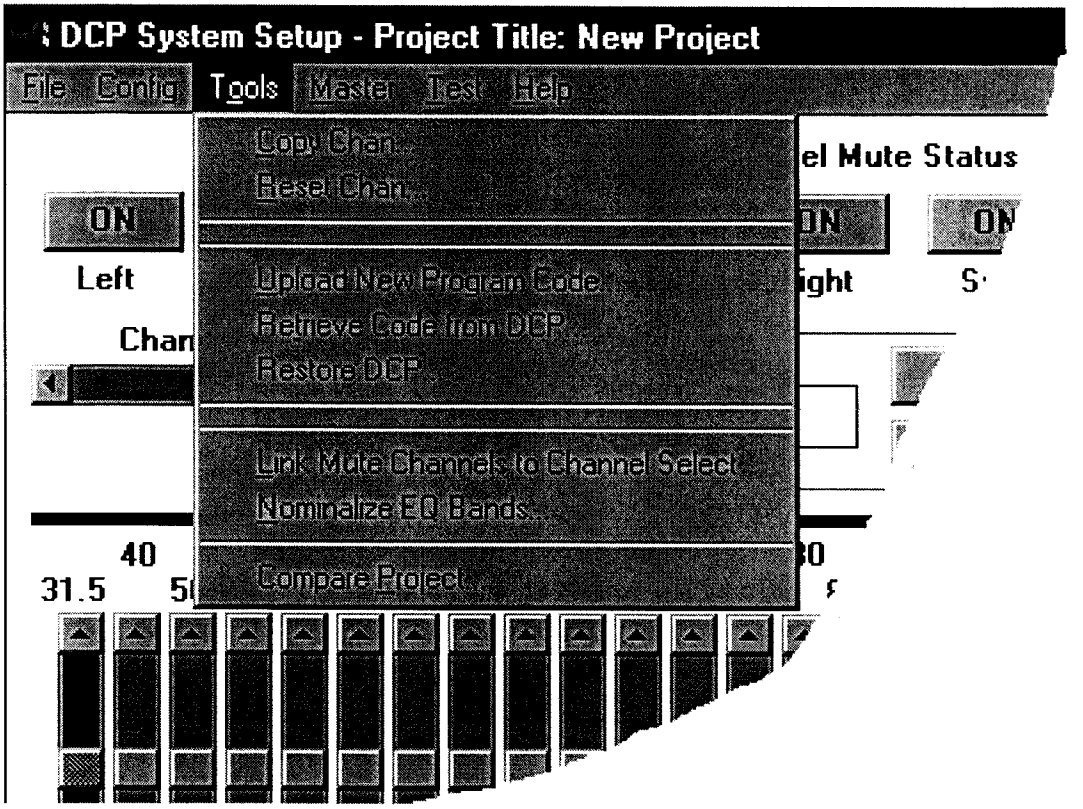
1. Insert the DCP firmware version 2.11 disk into drive A. If a number of field upgrades will be performed, create a directory on the hard drive in the PC and copy the contents from the supplied firmware disk to the directory. For details on creating directories and copying files, consult the Window's documentation.

2. Start the DCP Setup Software. The following display will be presented.

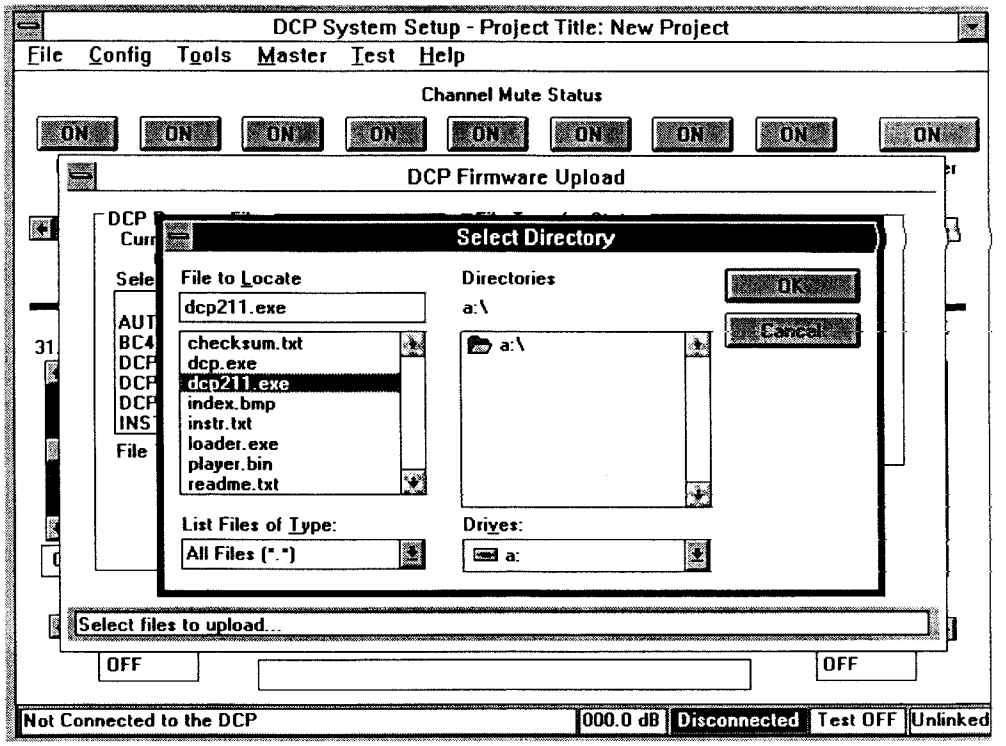


3. Connect a RS-232c NULL Modem cable between the COM1 serial port on the PC and the high speed serial port located on the rear panel of the DCP unit. The high speed serial port is labeled "**SETUP PORT**". **Note: the DCP Setup Software requires that the COM1 serial port be used for high speed data transmissions.**

4. In the **Tools** pull-down menu, select **Upload New Program Code**.



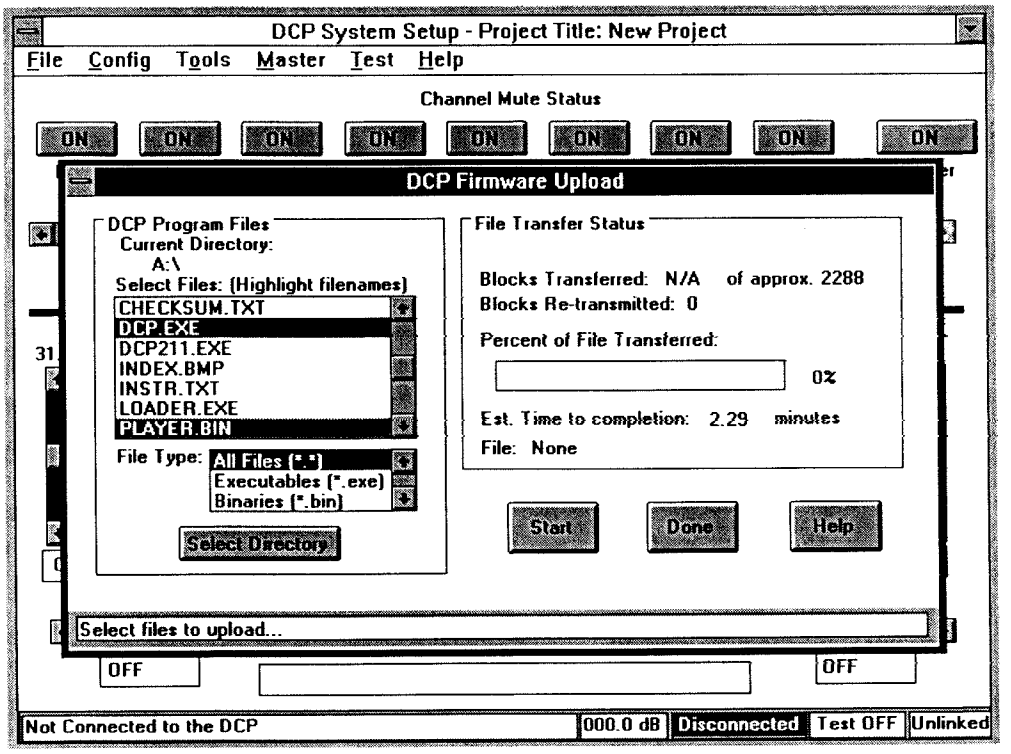
The following display will be presented.



A file or group of files to be uploaded can be selected via the **Select Files** list box. File selection is accomplished by first scrolling the list box to view the available files. When the desired file is visible, use the mouse to position the cursor over the file and then press the left mouse button. Additional files can be selected by scrolling the desired file(s) into view, placing the cursor over the file(s) and then simultaneously pressing the **Crtl** key and the left mouse button. As files are selected, the number of blocks to be transferred to the DCP will be updated in the upper right-hand corner of the display. Each block represents 128 bytes of file data.

Up to 30 files can be selected and uploaded to the DCP unit at one time. If additional files are to be uploaded, split the files up into groups of 30 files (or less) and upload each group separately. **Note: Version 2.11 of the DCP firmware consists of six files. It is important that all files shipped with the upgrade disk be uploaded to the DCP. This includes LOADER.EXE which has been modified since the last DCP firmware release.**

4. The **Select Directory** button is used to launch a directory browser that can be used to select the file directory and/or device (such as the A or B drive) containing the firmware file(s) to upload. When launching the directory browser the following display is presented. The files to be transfered to the DCP-1000 include DCP.EXE & PLAYER.BIN **ONLY** !! DO NOT TRANSFER ANY OTHER FILES.



A directory search is accomplished by positioning the cursor over the desired directory and double-clicking the left mouse button. Directory and sub-directories can be search until the desired directory is located. When a directory is selected, the available files in the selected directory are displayed in the list box on the left of the dialog box. Once the desired directory is selected, use the **OK** button to make the selection.

5. After selecting the desired files, start the uploading procedure by selecting the **Start** button. After starting the firmware upload, the **Start** button will be re-labeled **Stop**. To abort the upload procedure, use the **Stop** button.

   During the file upload, the status of the upload will be displayed in the **File Transfer Status** block. Blocks re-transmitted indicate a possible communications problem between the PC and the DCP unit. If re-transmissions exceed 10 blocks, the software will automatically abort the uploading process. If this should occur, reboot the DCP processor (i.e., power the unit off and then back on) and try the uploading process again.

   After uploading the selected firmware files, exit the dialog box using the **Done** button. **When finished, power the DCP off and then back on to start the new firmware.**

6. If the DCP firmware is shipped as a compressed (packed) file that contains many files, memory overload problems may occur when the compressed file is unpacked after being uploaded to the DCP hardware. To avoid this problem, the DCP Setup Software verifies that DCP.EXE (the main firmware file) is not in packed format (i.e., the file is smaller than 150K bytes). If a packed file is detected, the software will notify you that the file should first be unpacked (i.e., expanded) on the PC hard drive and each of the individual files should be uploaded. **Note: as shipped from the Sony Cinema Products Corporation, firmware version 2.11 is delivered in unpacked format**.

7. A complete DCP firmware upload should take approximately 3 minutes.

RETRIEVING SETUP.DAT FROM THE DCP HARDWARE

NOTE: This procedure is ONLY required if the room "B-Chain" alignment has already been performed with this unit. If the unit being upgraded has not yet been aligned, this procedure can be omitted.

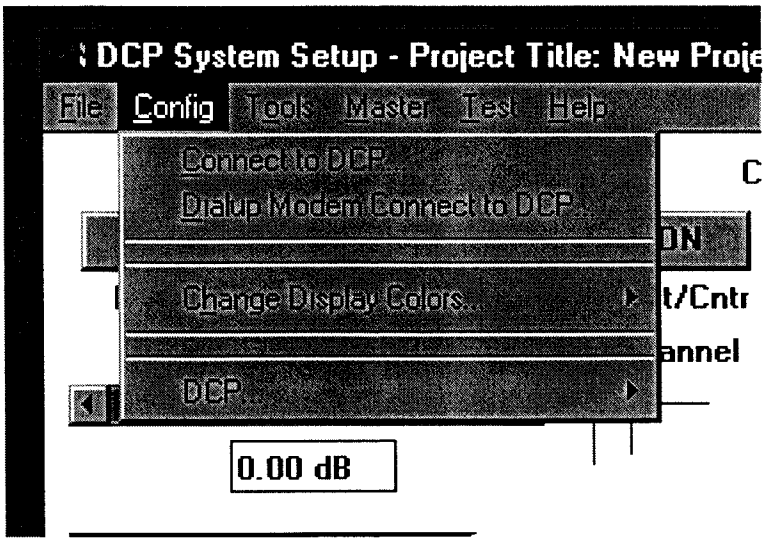
SETUP.DAT contains the tuning and calibration settings currently residing on the DCP CPU card. When the CPU card is replaced, the current settings are lost unless the original SETUP.DAT file is re-loaded into the new CPU card.

Use the following steps to retrieve the SETUP.DAT file.

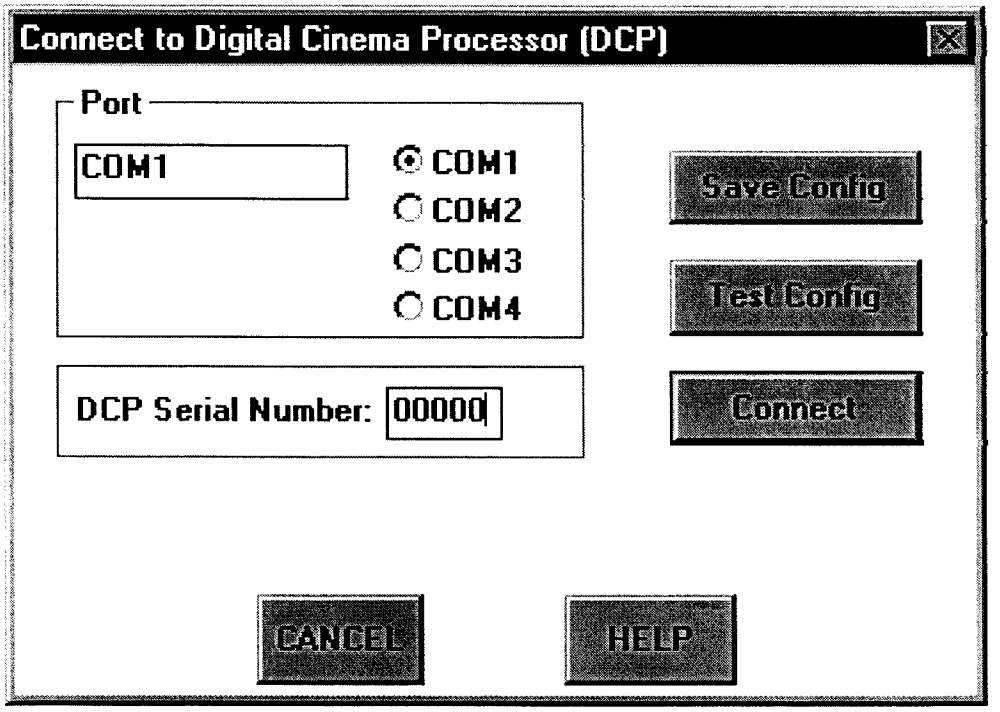
1. Start the DCP Setup Software on the PC and power-up the DCP hardware. Verify that the DCP firmware is version 1.40 or higher. The firmware just loaded in the previous section is version 2.11. Firmware versions can be verified via the front panel controls of the DCP processor. For additional details, consult the DCP Operations and Maintenance Manual. **Note: most DCPs in the field have firmware version 1.37. Make sure version 2.11 is uploaded prior to continuing.**

2. Connect a RS-232c NULL Modem cable between a serial port on the PC and the low speed serial port located on the back panel of the DCP unit. The low speed serial port is labeled "**SDDS LINK**".

3. Connect to the DCP unit using the **Connect to DCP** menu option located in the **Config** pull-down menu in the DCP Setup Software.

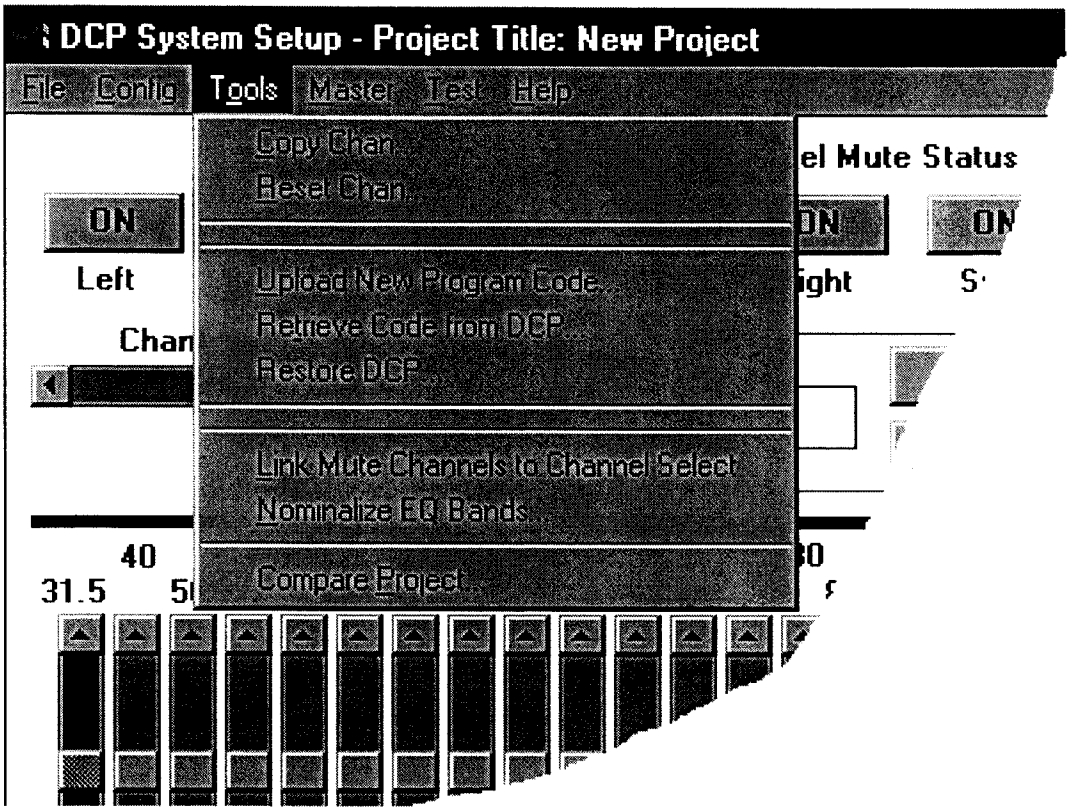


When selecting **Connect to DCP**, the following dialog box will be displayed.

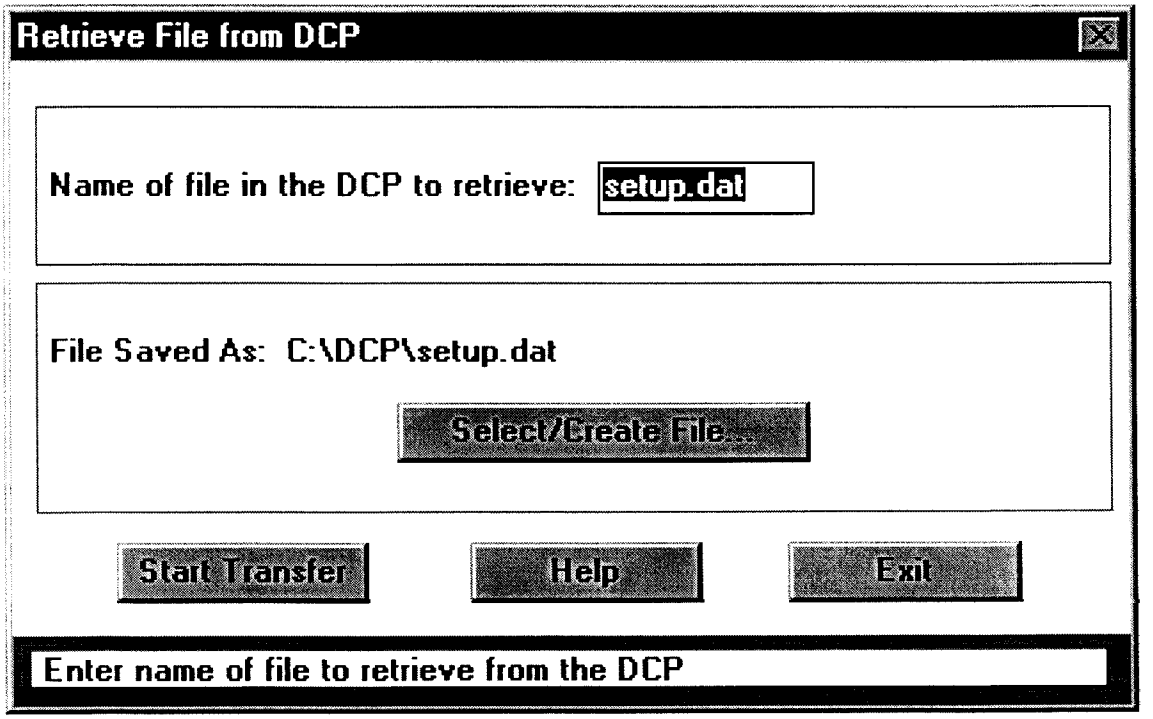


Select the serial port (i.e., COM1, COM2, etc.) where the RS-232c NULL Modem cable is attached. Currently, the DCP Serial Number field can be ignored (a future enhancement). Prior to connecting to the DCP, place the DCP hardware into "**Laptop**" mode. Use the front panel cursor keys to position the highlight bar over the **Config** menu option and then press the **Select** key. After pressing the Select key, a DCP password display will be presented. Using the left-right cursor keys, position the highlight bar over the desired digit and enter the appropriate number using the up-down cursor keys. After entering the DCP serial number, a configuration menu will be displayed. Use the left-right cursor keys to position the highlight bar over the **Laptop** menu option and then press the **Select** key. The DCP is now ready for communications with the DCP Setup Software. To complete the connection, select the **Connect** button in the **Connect to DCP** dialog box.

4. After connecting to the DCP unit, select **Retrieve Code from DCP** from the **Tools** pull-down menu in the DCP Setup Software.

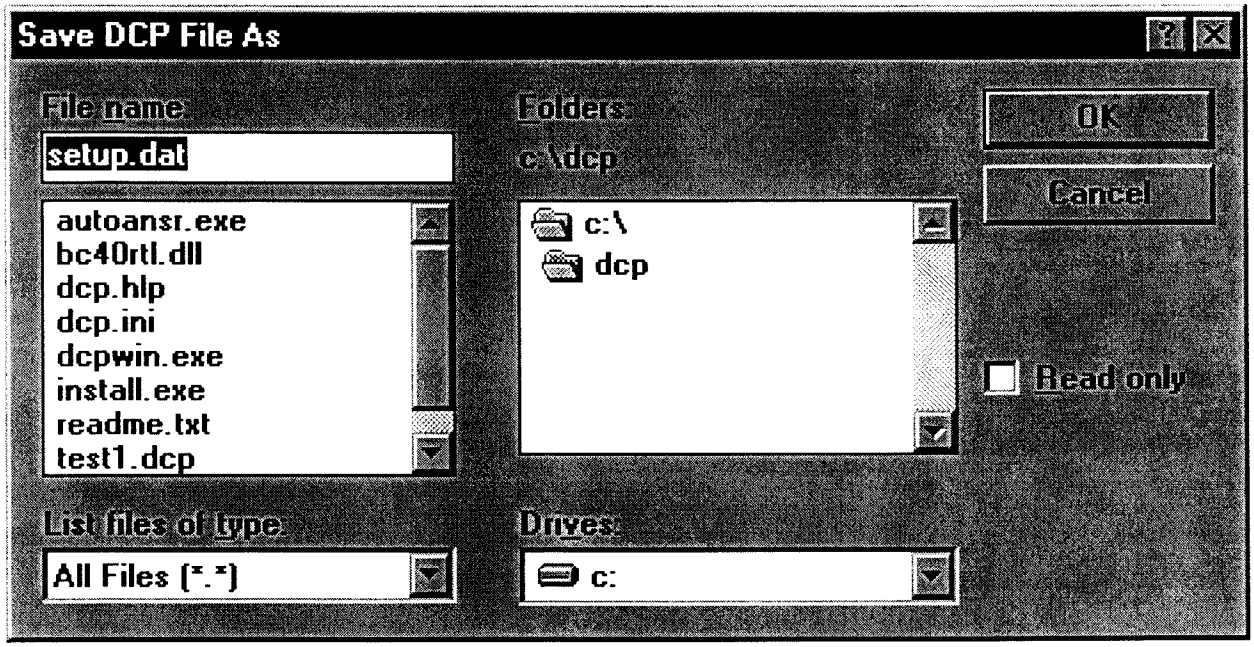


The following display will be presented.



By default, SETUP.DAT is the file retrieved from the DCP unit and placed in the current directory where the DCP Setup Software is installed.

5. The **Select/Create File** button is used to launch a "Save DCP File As" function that is used to select an alternative location and file name where the file from the DCP should be stored. When launching the function the following display is presented.



Directory selection is accomplished by positioning the cursor over the desired directory and double-clicking the left mouse button. Directory and sub-directories can be search until the desired directory is located. When a directory is selected, the available files in the selected directory are displayed in the list box on the left side of the dialog box. Either select an existing file (i.e., position the cursor over the file name and double clicking the left mouse button) or enter a new file name in the "**File name**" edit field. Once the desired directory and file name is selected, use the **OK** button to make the selection.

6. Start the retrieval procedure by selecting the **Start Transfer** button. After starting the file download process, the **Start Transfer** button will be re-labeled **Stop Transfer**. To abort the upload procedure, use the **Stop Transfer** button. During file retrieval, the status of the download will be displayed in the status window at the bottom of the display. Blocks re-transmitted indicate a possible communications problem between the PC and the DCP unit. If re-transmission tries exceed 10 blocks, the software will abort the retrieval process. Each block represents 128 bytes of file data.

CPU CARD REPLACEMENT

Once the SETUP.DAT file has been retrieved from the existing DCP CPU card, the new CPU card can be installed. Use the following steps to replace the CPU card.

1. Power the DCP unit off and disconnect the power cord.

2. The CPU card is removed from the DCP unit via the rear panel. Using a #2 Phillips screwdriver, remove the two retaining screws holding the CPU card in the DCP card frame.

3. Carefully slide the CPU card out of the card frame. **A ribbon cable attached to the CPU card must be disconnected prior to complete removal of the CPU card.**

4. Unwrap the new CPU card (part number A-8080-844-B) and carefully slide the CPU card into the vacated slot. Prior to sliding the CPU card all the way into the slot, re-attach the ribbon cable to the connector on the CPU card. Once the ribbon cable is re-attached, slide the card all the way into the slot until seated.

5. Re-attach the retaining screws, connect the power cord and power the DCP unit on.

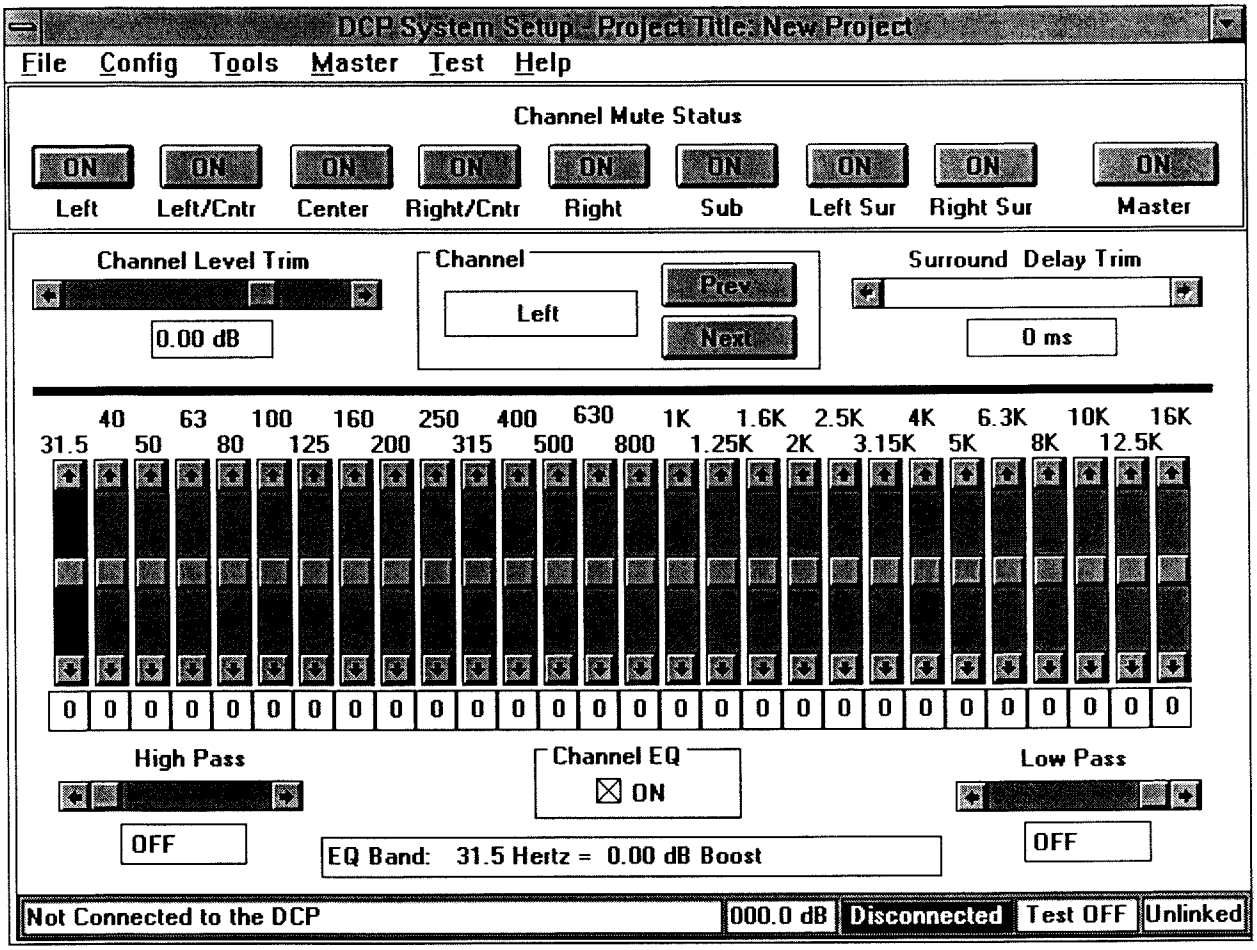
6. Verify that firmware version **2.11** is installed on the new CPU card. The firmware version can be determined using the front panel controls of the DCP unit. For additional details on using the DCP front panel, please consult the DCP Operations & Maintenance Manual.

UPLOADING SETUP.DAT TO THE NEW DCP CPU CARD

SETUP.DAT is uploaded to the DCP unit via the high speed serial port located on the rear panel of the DCP processor. The DCP Setup Software has a built-in Xmodem transfer protocol that ensures accurate transmission of firmware files from the PC to the DCP hardware. The use of the DCP Setup Software eliminates the need for using a third-party communications application to upload new firmware.

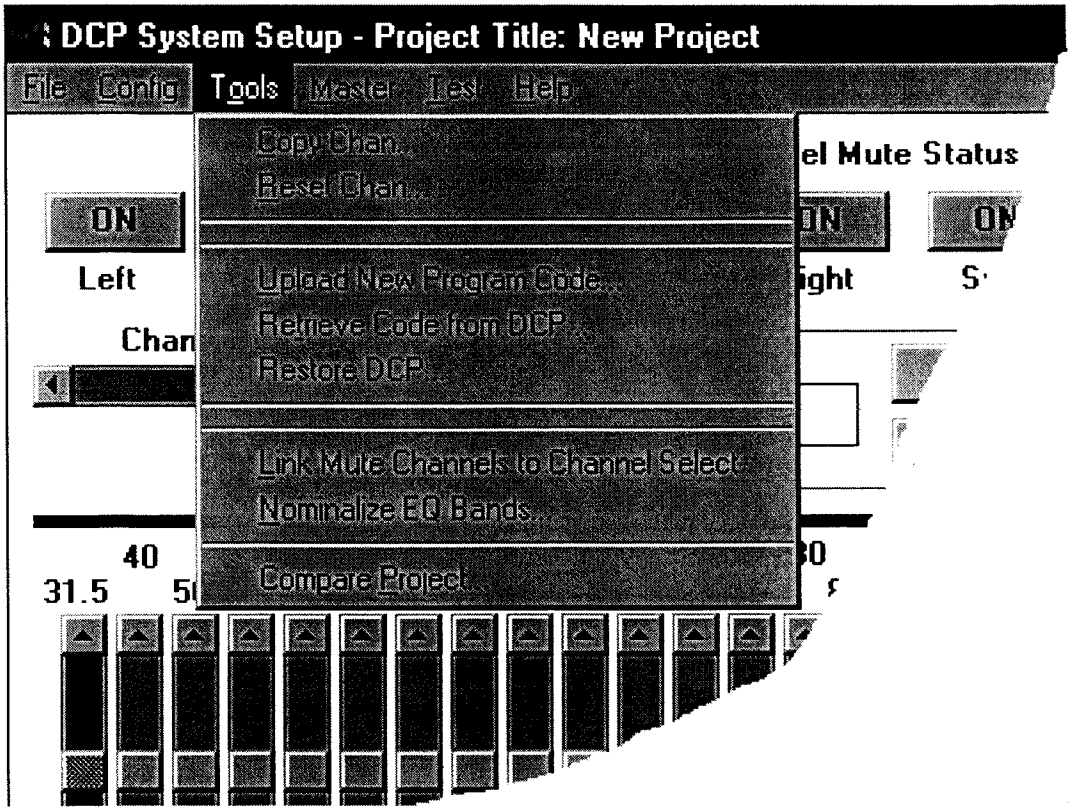
The following describes the steps required to upload SETUP.DAT to the DCP processor. **Note: DCP firmware version 2.11 must be loaded in the DCP unit prior to uploading the SETUP.DAT file. See the previous section for details.**

1. Start the DCP Setup Software on the PC. The following display will be presented.

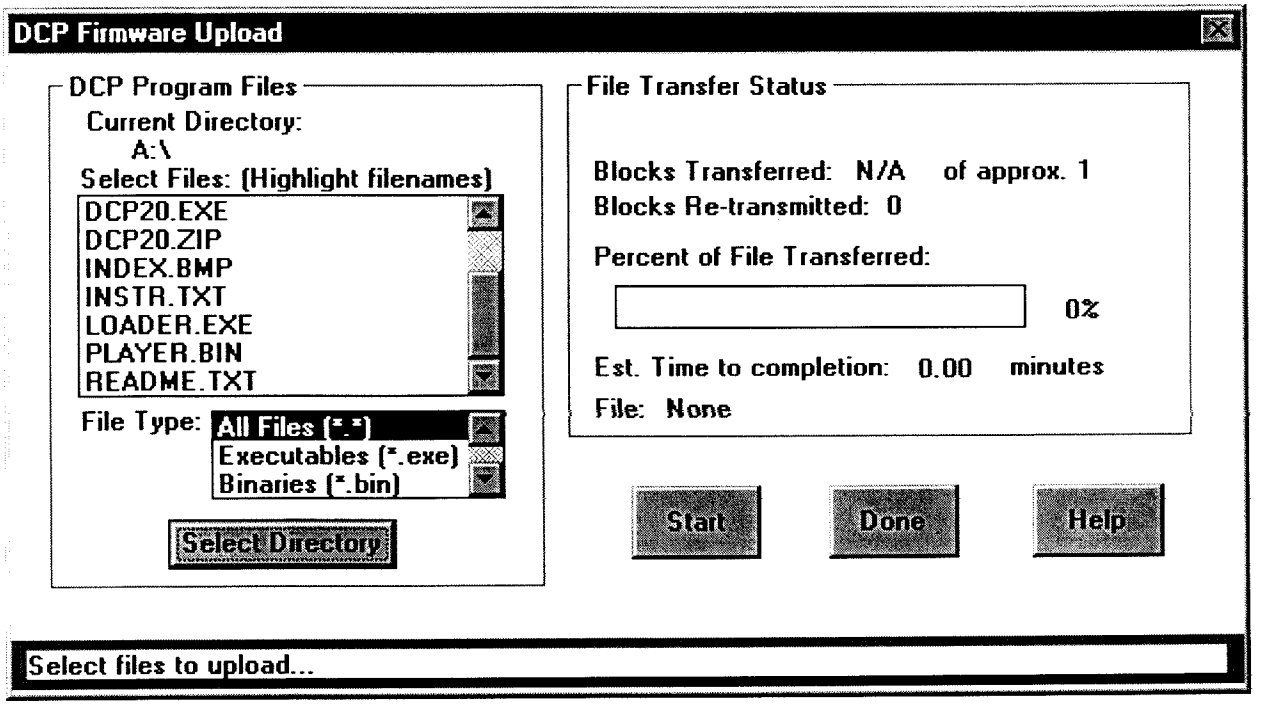


2. Connect a RS-232c NULL Modem cable between the COM1 serial port on the PC and the high speed serial port located on the rear panel of the DCP unit. The high speed serial port is labeled "**SETUP PORT**". **Note: the DCP Setup Software requires that the COM1 serial port be used for high speed data transmissions.**

3. In the **Tools** pull-down menu, select **Upload New Program Code**.



The following display will be presented.

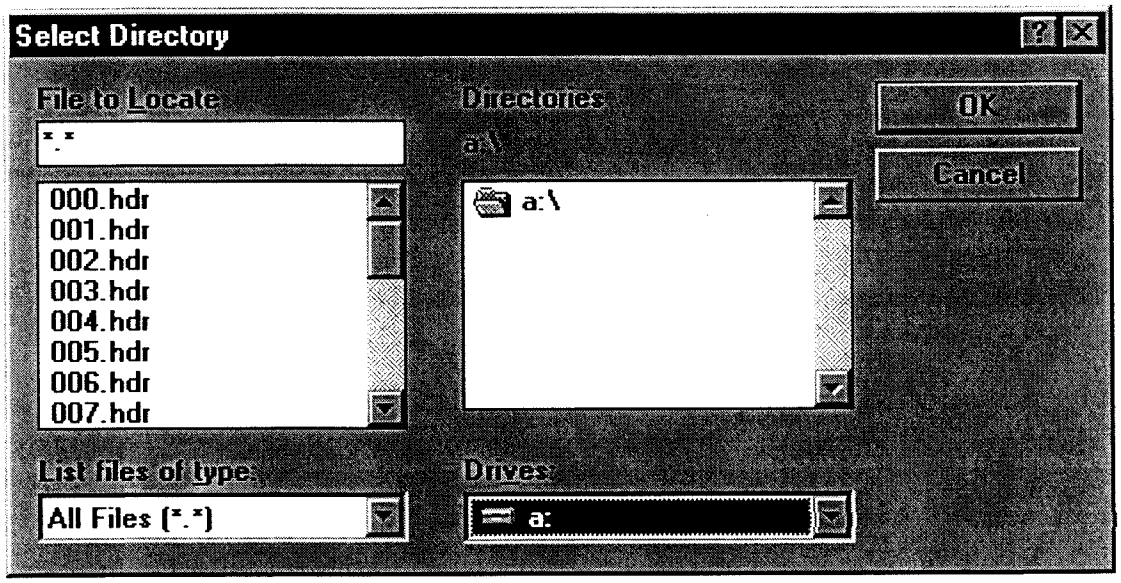


A file or group of files to be uploaded can be selected via the **Select Files** list box. File selection is accomplished by first scrolling the list box to view the

available files. When the desired file is visible, use the mouse to position the cursor over the file and then press the left mouse button. Additional files can be selected by scrolling the desired file(s) into view, placing the cursor over the file(s) and then simultaneously pressing the **Crtl** key and the left mouse button. As files are selected, the number of blocks to be transferred to the DCP will be updated in the upper right-hand corner of the display. Each block represents 128 bytes of file data.

Up to 30 files can be selected and uploaded to the DCP unit at one time. If additional files are to be uploaded, split the files up into groups of 30 files (or less) and upload each group separately.

4. The **Select Directory** button is used to launch a directory browser that can be used to select the file directory and/or device (such as the A or B drive) containing SETUP.DAT to upload. When launching the directory browser the following display is presented.



A directory search is accomplished by positioning the cursor over the desired directory and double-clicking the left mouse button. Directory and sub-directories can be search until the desired directory is located. When a directory is selected, the available files in the selected directory are displayed in the list box on the left of the dialog box. Once the desired directory is selected, use the **OK** button to make the selection.

5. After selecting SETUP.DAT, start the uploading procedure by selecting the **Start** button. After starting the upload, the **Start** button will be re-labeled **Stop**. To abort the upload procedure, use the **Stop** button.

   After starting the uploading procedure, reboot the DCP by powering the unit off and then back on. Once rebooted, the setup software will establish

communications with the DCP unit and start the file transfer process. During the file upload, the status of the upload will be displayed in the **File Transfer Status** block. Blocks re-transmitted indicate a possible communications problem between the PC and the DCP unit. If re-transmissions exceed 10 blocks, the software will automatically abort the uploading process. If this should occur, reboot the DCP processor (i.e., power the unit off and then back on) and try the uploading process again.

After uploading SETUP.DAT, exit the dialog box using the **Done** button. **When finished, power the DCP off and then back on to start the firmware using the parameters in SETUP.DAT.**

FURTHER INFORMATION

If you have any questions regarding the DCP Setup Software please contact.

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