Model DF-1710

User's Manual

Software Version 3.53

Contents

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1. Introduction

Congratulations on your purchase, and thank you for choosing the DF-1710 as part of your digital media solution. More than just a digital picture frame, the DF-1710 is a powerful, reliable, third-generation Internet-enabled digital multimedia appliance with many key features, including:

- Built-in CD-ROM (compatible with photo CDs from photo processors and user-burned CD-ROMs)
- Handheld Infrared Remote Control
- Flexible mounting and framing options
- Portrait and Landscape mode display
- USB support for memory card readers
- Remote administration over any TCP/IP network, including the Internet
- Powerful scripting language
- Internal hard disk from 12GB to 18GB
- JPEG still image display
- MPEG-1 (VideoCD) movie playback
- MPEG-1/MPEG-2/MPEG-2.5 Layer III ("MP3") audio playback for background music during still-image presentations
- Audio CD playback (available with future software upgrade)
- Stereo loudspeakers and stereo audio line-level output for external speakers

This document contains information for both basic operation and advanced applications.

Overview

The DF-1710 is a self-contained flat-panel computer with pre-installed media player, CD-ROM and networking software. Image, movie, and sound files can be loaded from a CD-ROM or sent to it via ethernet. In both cases the images are stored on the Digi-Frame's internal hard drive. Playback is controlled by script files that are created automatically when a CD-ROM is loaded or by script files sent to the frame via ethernet after being created on a desktop computer. Slideshow setup via on-screen menus and the remote control (or built-in buttons) will be added in the next major software upgrade. The system has been designed for maximum open-endedness and flexibility to accommodate most applications.

The basic steps to showing pictures or movies on the DF-1710 using a CD-ROM are as follows:

- Press the eject button on the CD-ROM tray, snap a CD-ROM onto the tray spindle (printed side towards you, data side towards the back of the unit), and slide the tray closed.
- Any media files found on the inserted CD will be copied to the DF-1710's internal hard drive in a new directory. A slideshow script file for the CD will be automatically created and will begin running automatically. The CD will be automatically ejected and may be removed.

The basic steps to showing pictures or movies on the DF-1710 using a network are as follows:

1) Establish an ethernet connection between a desktop computer and the DF-1710
2) Write a script file specifying playback order and options
3) Transfer the script file and media files (JPEG still images, MPEG-1 movies, MP3 or WAV sound files) to the DF-1710

Package Contents

Your DF-1710 package should include the following items:

- DF-1710 digital picture frame with mounting brackets, decorative frame and mat.
- Handheld IR remote control and 2 x AA batteries.
- Standard and crossover ethernet cables (one each).
- Picture hanging wire.
- This User's Manual.

Included on the DF-1710's internal hard drive are the following items:

- Preinstalled Digi-Frame media player and networking software.
- A copy of the Macintosh FTP client program "Transmit" from Panic Software. If you use this program on an ongoing basis please support the authors by registering and paying for the program.
- An evaluation copy of CuteFTP, a Windows FTPclient program from GlobalSCAPE Inc. This program will operate free of charge for 30 days from the date of installation on your computer.
- A copy of the Macintosh text editor BBEdit Lite from Bare Bones Software.
- This User Manual in PDF and Microsoft Word™ format.
- Media and script file for a pre-loaded demonstration slideshow

In addition, you will need:

- Media files on CD-ROM if you wish to load your files via the DF-1710's CD-ROM drive.

If you intend to use your DF-1710's ethernet capabilities you'll need:

- A personal computer with an ethernet port. An Ethernet network (LAN) is optional.
- A web browser such as Internet Explorer or Netscape, or an FTP client program.
- JPEG, MP3, or MPEG-1 media files to play on your DF-1710.
- A text editing program such as NotePad (included with Microsoft Windows™) or BBEdit Lite (available for Macintosh from BareBones Software.

Unpacking your DF-1710

Remove the four screws holding the plywood shipping cover with a philips-head screwdriver. Remove the cover and carefully lift out the DF-1710. **Important:** Please save all shipping materials in the event that your DF-1710 needs to be transported or shipped in the future. Digi-Frame Inc. will not be responsible for shipping damage due to improper packing. If your Digi-Frame arrives at significantly lower than room temperature it is suggested that you let it warm up to room temperature (about four hours) before operating in case any condensation has formed in any of its internal components.

Care of your DF-1710's LCD Screen

Your DF-1710 is shipped with a sheet of non-glare acrylic plastic in front of its LCD screen for protection and glare reduction. This plastic can be removed or replaced should you wish to do so (see section 3.4). **If your LCD screen needs cleaning use only wipes or cloths designed specifically for cleaning of LCD screens. NEVER use paper towels to clean the LCD screen. Paper towels are abrasive and will scratch the display screen.** Never use alcohol, petroleum-based solvents, ammonia-based cleaners, or harsh detergents to clean the plastic or the LCD screen. Never apply any liquids directly on the plastic or screen. This includes nail polish remover, alcohol, turpentine, gasoline, lighter fluid, acetone, paint thinner, mineral spirits, kerosene, ammonia, dishwashing soap, glass cleaner, vinegar, or any other commonly found household cleaner.

2. Controls and Ports

Front Panel
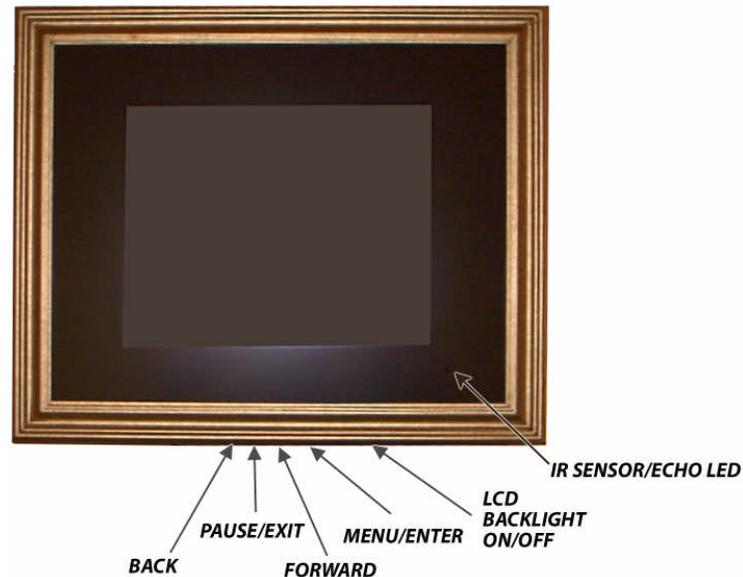
The following controls are found on the bottom edge of the unit (left side in portrait mode). They correspond to five of the buttons found on the remote control and perform similar functions. Some buttons perform different functions depending on whether the DF-1710 is in the on-screen menu system or playing a slideshow.

- The **LCD Backlight ON/OFF** button toggles power to the LCD backlight and mutes the sound output from the internal speakers, but not the external audio line output if it's used. To enable instant on/off functionality, the computer continues to run as long as power is switched on - the LCD Backlight Power button controls the screen backlight only. You need only turn off the screen, NOT the computer when the screen is not in use. We recommend turning off the backlight when not in use to conserve backlight life, which is rated at 30,000 hours.
- When a slideshow is running and no transition effect is executing the **MENU/ENTER** button brings up the DF-1710's on-screen menu system. While a transition is executing the MENU/ENTER button will abort the transition in progress – press it again to bring up the menu system if desired. While in the menu system the **MENU/ENTER** button functions as an "enter" key to select a menu choice.
- When a slideshow is running the **BACK** button moves the presentation back to the previous item. **NOTE:** you can only "retrace" one picture at this time. Future software upgrades will allow unlimited reverse scrolling. While in the menu system the **BACK** button scrolls the menu selection.
- When a slideshow is running the **PAUSE/EXIT** button stops the presentation until it is pressed again. While in the menu system the **PAUSE/EXIT** button exits the current menu.
- When a slideshow is running the **FORWARD** button moves the presentation forward to the next item. While in the menu system the **FORWARD** button scrolls the menu selection.

NOTE: Since there is no button on the main unit corresponding to the Up-Arrow button on the remote control, some menu functions may not be available from the main unit buttons. See the Menu System section.

- The **IR SENSOR** and **ECHO LED** are located at the lower right-hand corner of the frame (in landscape orientation). In order to use the remote control the sensor must not be blocked. A small hole has been precut in the mat supplied with your DF-1710, if you change the mat or install the DF-1710 in a wall or fixture please ensure that the sensor is not blocked. The Echo LED lights whenever a signal is received from the remote control.

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Rear Panel
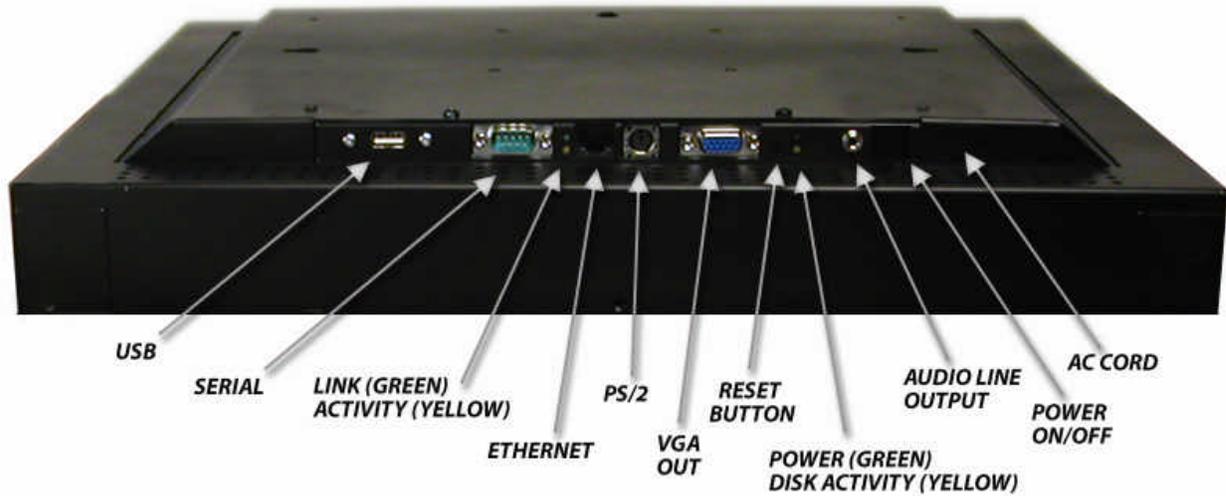
Indicators:
- The **Network Link LED** glows green when the Ethernet cable is connected properly to your hub.
- The **Network Activity LED** will flash yellow indicating traffic on your network.
- The **Power LED** glows green as long as there is power available to the unit and it is switched on.
- The **Hard Disk LED** flashes yellow when the internal hard disk is being accessed.

Connectors:
- **Serial Port** – This is used for factory service. It may also be used by optional peripherals in custom applications.
- **Ethernet** – Connect your 10baseT or 100baseT Ethernet cable here. **NOTE:** Due to the orientation of the ethernet connector, it may be difficult to access the release clip on some types of ethernet cables in order to disconnect them. We suggest slipping a plastic knife blade, wooden popsicle stick, or similar non-scratching implement between the release clip and the DF-1710 housing to facilitate connector release.
- **PS/2** – This connector is used for factory service and optional accessories.
- **VGA Out** – You may connect an external VGA monitor, VGA splitter or VGA-to-TV converter here to repeat the DF-1710's display on multiple devices.
- **Reset** – This button can be used to reset the DF-1710 if a problem is encountered. This should normally not be necessary; this feature is intended for the convenience of third-party developers. When planning your Digi-Frame installation, you do not need to allow access to this button.
- **Audio Line Output** – This jack accepts a standard 3.5 mm stereo plug and provides stereo line-level audio outputs for connections to external powered speakers or other audio playback system.
- **Power On/Off** – Switches the DF-1710 on and off. When power is switched on the DF-1710's backlight will usually turn on automatically in a few seconds, if it does not, switch it on with the backlight power button on the unit or remote control. You can switch power off at any time without risk of software or hard disk damage.
- **AC Cord** – Connect the attached cord to an AC supply 100 – 240 V.

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Infrared Remote Control

The DF-1710's infrared remote control is pictured above. Install the two included AAA batteries in the battery compartment, ensuring correct polarity.

Five of the remote control buttons correspond to the buttons found on the main unit and perform similar functions. Some buttons perform different functions depending on whether the DF-1710 is in the on-screen menu system or playing a slideshow.

- The **LCD Backlight ON/OFF** button toggles power to the LCD backlight and mutes the sound output from the internal speakers, but not the external audio line output if it's used. To enable instant on/off functionality, the computer continues to run as long as the power is connected. The LCD Backlight Power button switches on and off power to the screen backlight only. You need only turn off the screen, NOT the computer when the screen is not in use. We recommend turning off the backlight when not in use to conserve backlight life, which is rated at 30,000 hours.
- When a slideshow is running and no transition effect is executing the **Menu/Enter** button brings up the DF-1710's on-screen menu system. While a transition is executing the MENU/ENTER button will abort the transition in progress – press it again to bring up the menu system if desired. While in the menu system the **Menu/Enter** button functions as an "enter" key to select a menu choice.
- When a slideshow is running the **Left Arrow** button moves the presentation back to the previous item. **NOTE:** you can only "retrace" one picture at this time. Future software upgrades will allow unlimited reverse scrolling. While in the menu system the **Left Arrow** button scrolls the menu selection.
- When a slideshow is running the **Pause/Exit** button stops the presentation until it is pressed again. While in the menu system the **Pause/Exit** button exits the current menu.
- When a slideshow is running the **Right Arrow** button moves the presentation forward to the next item. While in the menu system the **Right Arrow** button scrolls the menu selection.
- The **Up/Down Arrows** are found only on the remote control and facilitate navigation in some menus. Refer to the on-screen prompts for their use.

The **LED** lights whenever a key is pressed.

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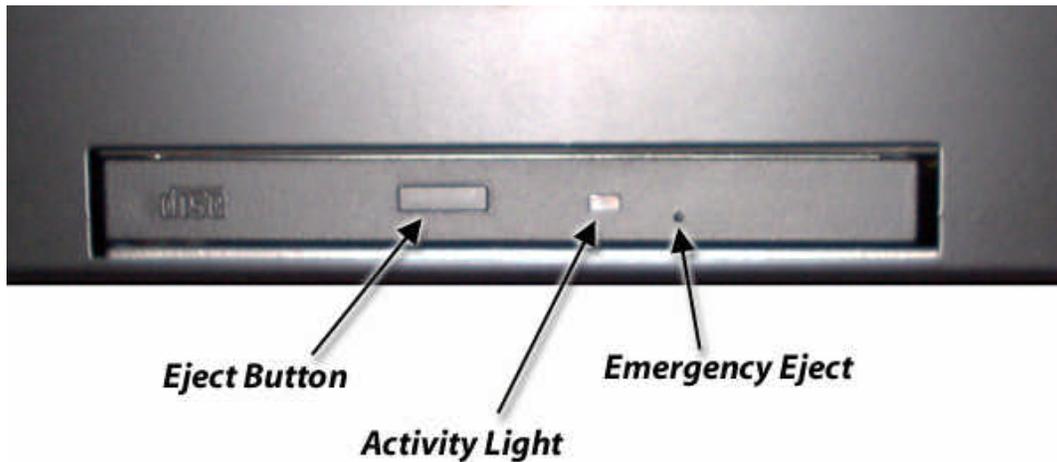
CD-ROM

The CD-ROM is located on the right side of the DF-1710 in landscape orientation, and on the bottom when it's in portrait orientation. Press the Eject Button to open the disc tray (the eject button will only operate when the DF-1710 is powered on and it is not currently scanning or loading images from a CD). The Activity Light will flash when the CD-ROM drive is accessing files. A paper clip can be inserted into the Emergency Eject hole to open the tray in the unlikely event that the drive does not respond to the eject button for some reason.

CDs should be securely snapped into the tray's spindle with the printed side towards you (data side towards the back of the unit) and the tray gently pushed closed.

When you insert a CD-ROM into the DF-1710's drive, any media files found on it are copied to a new directory on the hard drive and a script file is automatically generated (see section 4, CD-ROM Operation, and Section 7, Script Files). A message will appear on-screen during scanning and file copying. When file copying is complete the CD-ROM slideshow will start, the tray will automatically open, and the disc may be removed.

Important Note on CD-ROMs: The DF-1710 recognizes only ISO9660-formatted CDs. Non-ISO9660-formatted CDs may cause the unit to "hang" and require manual ejection of the CD with a paper clip and a re-boot. Photo CDs supplied by commercial photo processors will always be ISO9660-formatted. If you are burning your own CDs be sure to select "Hybrid PC/Mac" or other formatting selection in your CD-burning software to ensure DOS/Linux compatibility. Mac-only CDs (pure HFS formatting) will not work with the DF-1710.

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3. Mounting/Hanging the DF-1710

The DF-1710 can be hung from standard picture hanging hardware, hooks, wire etc. by using the "keyhole" slots or the picture wire hooks on the rear panel. If you use the included picture wire and hooks be sure to wrap the picture wire around itself securely, multiple times. The DF-1710 weighs 19 pounds (about the same weight as a 2-foot by 3-foot glass mirror) and so requires strong mounting hardware. The DF-1710 also incorporates VESA-standard mounting holes on 100mm centers for use with any VESA-compatible monitor mounting hardware such as that produced in a variety of configurations and styles by Ergotron Inc. (http://www.ergotron.com). When using the VESA mounting option use machine screws with 8-32 threads (the screws supplied with your third-party mounting hardware may not conform to this thread specification). **Ensure that the machine screws do not extend into the Digi-Frame casing more than 1/16".**

Portrait and Landscape Orientation

Unlike most display devices, the DF-1710 can be mounted vertically (portrait mode) or horizontally (landscape mode). Mounting the DF-1710 in an orientation matching the majority of your images will maximize the size of your images on-screen and minimize the "black bars" of unused screen area resulting from mismatched orientation. It incorporates an orientation sensor that tells the computer what orientation the frame is in. Images will be automatically rotated by the software as required. In portrait mode the CD-ROM drive must be at the bottom of the unit.

Notes on LCD Viewing Angle

Due to the nature of liquid crystal displays, the image will be brighter and clearer when viewed from some angles than others. Looking at the DF-1710 in landscape mode, the image quality will be excellent when viewed straight on, from above, or from left or right. When viewed from below, however, the image will darken, and at extreme angles, the colors will shift. For this reason we recommend mounting the DF-1710 at eye level or below, or if a higher mounting location is desired, the frame should be tilted downwards, either by leaving some "slack" in the picture hanging wire or by using a pivoting mounting bracket.

In portrait mode the viewing angle will be fine from straight on, from above or below, and from the right of the unit. The image will be darker when viewed from the left.

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Wire Routing Clips

Your DF-1710 is supplied with four wire routing clips that can be used to route the power and other cables so that they hang from center of the unit in either landscape or portrait mode.

Insert the wire or wires through the split barb of the clip:

Insert the barb of the clip into one of the four 1/4" holes in the DF-1710's rear housing. These holes are slightly larger than the surrounding ventilation holes. Use one clip for landscape mode:

Use four clips for portrait mode:

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Changing the Decorative Frame

Always unplug your DF-1710 from the power source before removing the frame and/or mat to prevent damge or injury.

The DF-1710 accepts most standard 16 x 20" decorative frames made of wood or other material that can be screwed into. Change the frame by following these steps:
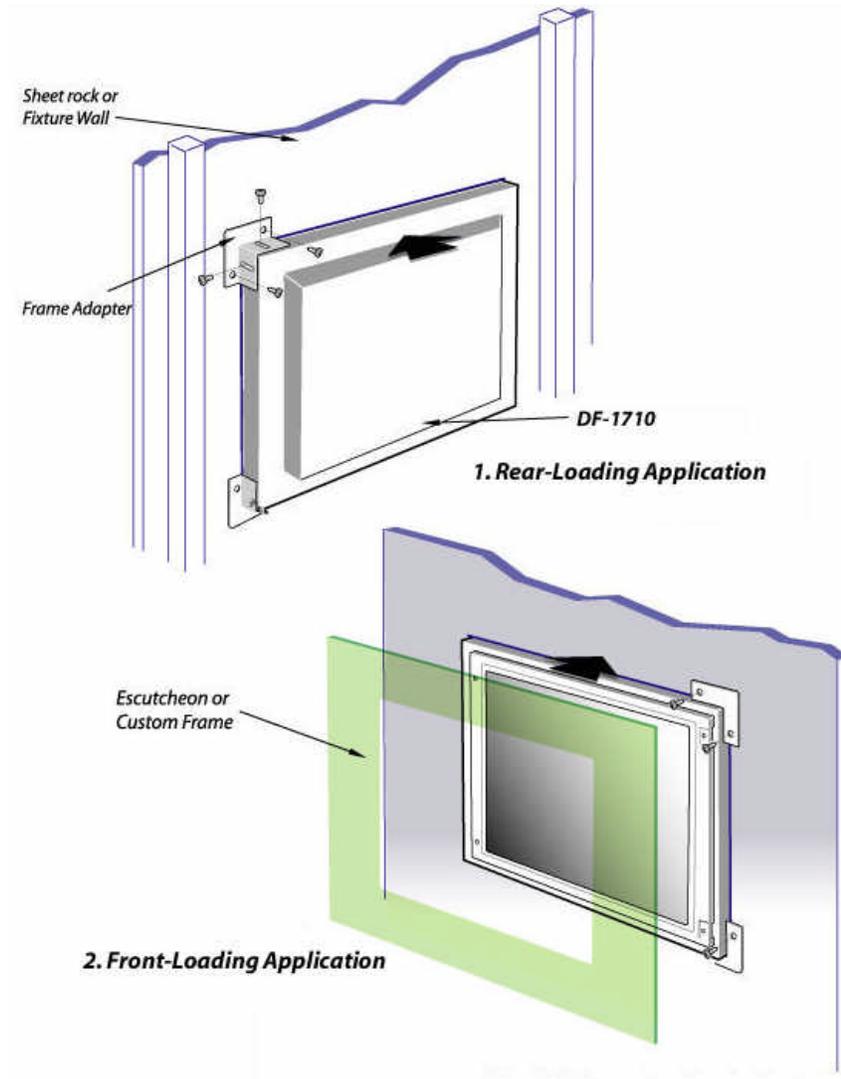
1. Lay the DF-1710 down flat on its face on a flat, clean surface, preferably covered with cloth or other non-scratching material.

2. Unscrew the eight wood screws holding the metal offset clips to the decorative frame.

3. Lift the DF-1710 out of the frame. Make sure that the picture mat and non-glare acrylic remain in the frame and set the DF-1710 aside where its LCD screen will not be damaged.

4. Place your new frame face down on a flat, clean, soft surface. If you intend to use the picture mat and/or non-glare acrylic supplied with the DF-1710, transfer these to your new frame. If you're using your own mat, make sure that a hole is cut at the remote control sensor location. A paper punch works well for this.

5. After the protective glass or acrylic (if used) and mat are in your new frame. place the DF-1710 on top of them. The edges of the DF-1710 frame brackets should go *inside* the rabbetted notch in the picture frame.

6. Screw the eight metal offset clips into the back of your new frame such that they clamp the DF-1710 mounting brackets between themselves and the picture frame notch. Be sure that the screws used are not so long that they break through the frame! Pilot holes can be drilled for ease and accuracy of screw insertion.

7. After the clips have been tightened down, loosen the machine screws holding the frame brackets to the sides of the DF-1710. Adjust the brackets in their slots so that they are tight against the inner surface of the offset clips on the frame (this compensates for the varying notch depth of different frames and varying mat and glass thicknesses) and re-tighten the machine screws holding the brackets to the DF-1710.

A Note on Non-Glare Acrylic

Your DF-1710 is supplied with a quality piece of protective non-glare acrylic plastic in front of its LCD screen. This both protects the LCD from damage and reduces reflections and glare from its surface. It does, however, cause a degree of "softening" of the clarity of the display. If you desire a different look or better display sharpness you might want to try non-glare glass, standard glass, or no cover at all.

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Built-In Installations

For built-in installations remove the decorative frame and mount the adjustable brackets to your installation as shown below. The DF-1710 can be mounted from the front or rear in this type of installation. Note that the CD-ROM and main unit control buttons may not be useable unless you make special provision for access to them. The bracket depth is adjustable to accommodate various wall thicknesses.

Sheet rock or Fixture Wall

Frame Adapter

DF-1710

1. Rear-Loading Application

Escutcheon or Custom Frame

2. Front-Loading Application

4. On-Screen Menu System

Entering and exiting the menu system

Enter the menu system by briefly pressing the Menu/Enter button on the main unit or remote control. This will bring up the main menu screen (except during movie playback). You may exit any menu by pressing the Pause/Exit button. Note that if the Picture/Sound overlay menu is being displayed the Pause/Exit button will not cause it to disappear; this special menu must be exited by pressing the up arrow button on the remote control or, it will close by itself after 30 seconds.

Main Menu

The Main Menu has six selections: Select Slideshow, Adjust Picture and Sound Volume, Delete CD-ROM Slideshows, System Information, Set Default Slide Time, and Upgrade Software. Use the Back/Forward buttons on the main unit or the left and right arrow keys on the remote to highlight the desired choice, then press Menu/Enter. Press the Pause (||) button to return to the previous menu level or to exit the Main Menu.

Select Slideshow

After entering the Select Slideshow menu use Forward/Back (left and right arrows on the remote) until the desired slideshow is shown, then press Menu/Enter. In a few moments the selected slideshow will begin running. The "user slideshow" will always be the first choice in this menu. This is the slideshow controlled by the file "script.txt" uploaded to the frame via ethernet (or the demo that was preinstalled on the frame at the Digi-Frame factory, if you haven't uploaded your own). Additional selections will be listed as "cd1, cd2, etc. for any CD-ROMs, memory cards, or additional user slideshows that have been loaded.

Set Default Slide Time

This menu selection allows you to set the default pause time for all slideshows. When CD-ROMs and memory cards are inserted their slideshows always use the default setting (unless a script file is present on the CD-ROM or memory card), so this menu allows you to set the slide timing for CD and memory card slideshows without having to modify their script files.

This setting affects only the <u>default</u> pause time, i.e. the pause time that results when no pause time option has been specified in a script file. If a pause time option has been specified in a script file it will override the default setting. Note that pause time options in a script file are "sticky", i.e. once specified in a script file line, a pause time remains in effect for all subsequent lines even if they do not have a pause time option specified. **If you wish the pause timing in a slideshow to be controllable from the the menu system, do not specify any pause time options in its script file.** On the other hand, if you want your pause times to be predetermined and not overriden by the menu setting, then do specify them in your script file. See the Script File sections of this manual for more details.

The default slide time will be reset to approximately 5 seconds each time the DF-1710 is rebooted. If you reboot your Digi-Frame or it gets turned off and on again you'll need to reset your custom default slide time setting if you're using one.

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Set Default Slide Transition

This menu selection allows you to set the default slide transition for all slideshows. When CD-ROMs and memory cards are inserted their slideshows always use the default setting (unless a script file is present on the CD-ROM or memory card), so this menu allows you to set the slide transition effect for CD and memory card slideshows without having to modify their script files.

This setting affects only the <u>default</u> transition, i.e. the transition that results when no transition option has been specified in a script file. If a transition option has been specified in a script file it will override the default setting. Note that transition options in a script file are "sticky", i.e. once specified in a script file line, a transition remains in effect for all subsequent lines even if they do not have a transition option specified. **If you wish the transitions in a slideshow to be controllable from the the menu system, do not specify any transition options in its script file.** On the other hand, if you want your transitions to be predetermined and not overriden by the menu setting, then do specify them in your script file. See the Script File sections of this manual for more details.

The default transition will be reset to "flip" (no transition effect) each time the DF-1710 is rebooted. If you reboot your Digi-Frame or it gets turned off and on again you'll need to reset your custom transition setting if you're using one.

Delete Slideshows

This menu allows you to delete slideshows generated from CD-ROMs and/or memory cards. Using the left and right buttons on the remote or main unit, scroll to the CD-ROM slideshow you wish to delete and press Menu/Enter. You cannot delete the "user" slideshow (the slideshow you can upload via ethernet) using the on-screen menus, you must use FTP via ethernet. If you delete the currently-running slideshow you may get a "No Media Found" error message, if this happens simply select another slideshow or insert a CD-ROM or memory card.

Adjust Picture and Sound Volume (monitor controls)

This is a special menu that has a different appearance from the rest of the Digi-Frame menus. It is generated by the DF-1710's built-in monitor, not the main computer, and so cannot be exited by pressing the Pause/Exit buttons. It must be exited by pressing the Up-Arrow button on the remote control, or by waiting 30 seconds, at which point it will close by itself. The time delay before closing can be adjusted in the monitor control menu.

NOTE: Because there is no button on the main unit corresponding to the remote control's up-arrow key, the monitor control menu cannot be exited with the main unit buttons. You can still make adjustments but you then have to let the monitor menu close by itself.

The monitor menu has standard picture controls and an on-screen menu system for adjusting them. **NOTE:** We recommend that you NOT perform "Auto Adjust" or adjust the picture position, clock, or phase settings. They are factory pre-calibrated by Digi-Frame as follows:

> Clock: 42
> Phase: 36
> Horizontal Position: 0
> Vertical Position: 88

While in the monitor menu, the Digi-Frame controls perform the following monitor control functions:

Digi-Frame Main Unit	Digi-Frame Remote Control	Monitor Control Function
Back	Left Arrow (Back)	Down (decrease)
Forward	Right Arrow (Forward)	Up (increase)
Menu/Enter	Menu/Enter	Select
n/a	Up-Arrow	Menu/Exit

Exit the monitor menu by using the Up-Arrow button on the remote control, then exit the Digi-Frame monitor menu prompt screen by pressing the Pause/Exit button.

If the monitor menu disappears before you are finished using it, you'll need to exit the Digi-Frame menu by pressing the Pause/Exit button, then re-enter the menu and select Adjust Picture and Sound Volume.

Upgrade Software

If your DF-1710 is connected to the internet, selecting this option will check for a software upgrade on Digi-Frame's website and install it if necessary. If no upgrade is required none will be performed. No personal data or other information is transmitted or exchanged in this process.

System Information

This screen displays information about the DF-1710's current status, including its current network address and software version.

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5. CD-ROM Operation

The DF-1710 can display still photos, movies, and MP3 sounds stored on CD-ROM. Most photo-processing operators offer pictures on CD-ROM at a reasonable added cost as an option when you drop off film for developing and/or printing. If you have a computer with a CD-R or CD-R/W writer attached you can "burn" your own CDs with any digital picture, movie, and MP3 files that you have on your computer.

Loading Files from CD-ROM

Press the Eject button on the CD-ROM to open the disc tray, snap a CD-ROM disc containing recognized media files securely into the tray's spindle, and gently push the tray closed. Each time a CD-ROM is loaded a new directory is created for its media files on the DF-1710's internal hard drive. These are named cd1, cd2, cd3, etc. and can be selected by these names using the on-screen menu system. There are 100 available directory slots. If the 100-slot limit is exceeded a message will appear prompting you to delete one or more CD directories to make room for the new one. A message will appear on-screen during scanning and file copying, telling you which slot the files are being loaded into. Any recognized media files found on the disc are copied to its new directory and a script file is automatically generated. Note that if an image transition is currently being executed the disc will not be read until the transition has completed (you can abort a transition in progress by pressing the Menu button or the "D" button on the remote control). When file copying is complete the tray will automatically open and the disc may be removed. The newly-generated script file will automatically begin running. If you wish to go back to the slideshow you were previously running or run a different one, you can select from among all available slideshows using the control buttons or remote control and on-screen menus.

Important Note on CD-ROMs: The DF-1710 recognizes only ISO9660-formatted CDs. Non ISO9660-formatted CDs may cause the unit to "hang" and require manual ejection of the CD with a paper clip and a re-boot. Photo CDs supplied by commercial photo processors will always be ISO9660-formatted. If you are burning your own CDs be sure to select "Hybrid PC/Mac" or another formatting selection in your CD-burning software that ensures DOS/Linux compatibility. Mac-only CDs (pure HFS formatting) will not work with the DF-1710.

There must be no spaces in filenames or directory (folder) names on CD-ROMs. Spaces in the volume names of CDs are acceptable, as volume names are ignored by the DF-1710. Special characters such as #, &, ;, :, |, <, >, ", and , should also be avoided in file and directory names.

CD-ROM Script Files

CD-ROM script files are automatically generated at the time of disc loading. The ordering of files in the auto-generated script is alphabetical and the default display time for still images is about 6 seconds. Any MP3 files found on the CD-ROM will be compiled into a playlist which will run in "shuffledmusic/nointerrupt" mode starting at the beginning of the slideshow (see the Script Options section for more detail). At present a CD-ROM script file can only be modified by downloading it via ethernet to a PC, editing it, and re-loading it back to the DF-1710. A modified script file should be reloaded back to the CD-ROM directory from which it came, then you must change to a different slideshow and back again to the CD-ROM slideshow in order for the changed script to be recognized by the DF-1710. Future software upgrades will allow full slideshow customization via the on-screen menu system. See the "Script Files" section of this manual for more detailed information.

6. Memory Card Operation

The DF-1710 can read media from memory cards by means of external USB card reader. The following card readers have been tested and are known to work with the DF-1710. No software installation is required in the DF-1710 to support these readers - you do not need and may discard the driver CD that accompanies them.

- CompUSA CompactFlash™ USB Card Reader, SKU#51492.

- Microtech Dazzle® ZiO!™ CompactFlash Reader/Writer. The Dazzle® ZiO!™ series is compact enough to plug directly into the DF-1710's USB slot and remain hidden behind the decorative frame.

- Microtech Dazzle® ZiO!™ SmartMedia™ Reader/Writer.

- Microtech Dazzle® ZiO!™ Memory Stick™ Reader/Writer.

- Microtech Dazzle® ZiO!™ SD/MMC™ Reader/Writer.

Digi-Frame will conduct ongoing tests of additional card readers and update the list of supported devices on our website periodically. In general, single-slot card readers (and USB Flash "pen drives") that do not require driver installation under Mac OS 8.6-9.x or Windows2000®, Windows ME®, or WindowsNT® should work. These card readers work with "generic" drivers supplied in the computer operating systems. Multi-slot readers are not supported at this time.

The Dazzle® ZiO!™ CompactFlash™ Reader/Writer

Card Reader Installation

No driver or software installation is required in the Digi-Frame. Plug your card reader into the USB port in the connector bay at the rear of the DF-1710. You do not need to turn off your Digi-Frame when plugging and unplugging a card reader, however , if you're unplugging one brand or model of card reader and plugging in a different one, you will need to reboot the Digi-Frame for the new model to be recognized.

Card Reader Operation

Insert a memory card containing JPEG images or MPEG-1 movie files. The Digi-Frame will, after a few seconds, recognize the inserted memory card and copy all supported media to its hard drive. Note that if an image transition is currently being executed the card will not be read until the transition has completed. A message will appear onscreen announcing that card reading is complete and requesting that you remove the memory card and press the Pause (||) button to continue. NOTE: be sure to remove the memory card before pressing the Pause button, otherwise the card will be scanned and copied again.

Memory card slide shows are handled identically to CD-ROM slideshows, in fact, they are accessed in the Slideshow Select menu as CD1, CD2, etc. and are not differentiated from CD-ROM slideshows. Please refer to the CD-ROM sections of the User's Manual for more detailed information.

DF-1710's with serial numbers 10001012 and lower require a special USB enabling procedure in addition to an upgrade to software version 3.50 or higher. Please contact Digi-Frame customer service for more information.

7. Network Operation

Overview

In addition to loading images from CD-ROMs and memory cards, you can transfer files to and from your DF-1710 using an ethernet connection and FTP (File Transfer Protocol). To perform FTP transfers, the DF-1710 continuously runs a software module called an FTP "Server" program, which communicates with FTP "Client" programs running on other computers via the network connection. Graphical FTP client programs are built into Internet Explorer and Netscape web browsers, and these can be used to transfer files to and from the DF-1710. Dedicated FTP client programs such as CuteFTP for Windows from GlobalSCAPE Inc. and Transmit for Macintosh from Panic Inc. can also be used, and may provide advanced features that the browsers do not. Demo copies of Transmit and CuteFTP are included on your DF-1710's hard drive and can be downloaded from there to your PC using a browser. If you continue to use these programs please register them with the vendors to support their development efforts.

Web browsers have advantages of ubiquity, a graphical interface and the ability to view media and scripts instantly from within the browser by simply clicking on them. Dedicated FTP clients have the advantage of the ability to easily delete and rename files and folders on the remote server (the DF-1710). Netscape cannot rename or delete files on an FTP server, Internet Explorer needs to have "folder view" enabled in its FTP preferences in order to do this.

Transferring files with either a web browser or an FTP client program is usually a matter of simply dragging file icons from your computer desktop into the browser or FTP client window. Transfer will start automatically. Consult your FTP client program's documentation for further information.

The DF-1710 provides password protection for security. A user name and password must be supplied by the browser or FTP client program in order to gain access to the DF-1710. You will use the username "df" and the password "digiframe" to initially log into the DF-1710's FTP server. See the "Password Security" section of this manual for details of how to change the default password.

In order for messages to be sent and received correctly, each device on a TCP/IP network has a unique identifying address, known as its IP address. To transfer content and/or scriptfiles to your DF-1710 (at least initially), you'll need to know its IP address. In a large network situation, or a network with a DSL or cable modem connecting to the internet, IP addresses are usually assigned automatically to individual devices by a special program called a DHCP (Dynamic Host Control Protocol) server. A DHCP server is often included in network connection-sharing devices such as routers and DSL or cable modems (but not in most hubs). On some networks the DHCP server is a component of software running on a file server computer.

When the DF-1710 starts up, it first looks for a DHCP server. If it finds one, it receives an IP address from it and displays the address on-screen. If it doesn't find a DHCP server it uses a preset default IP address which is displayed on-screen. If you're connecting your DF-1710 directly to a computer, or to a simple LAN without a router, there won't be a DHCP server, so the DF-1710 will use its default IP address. Once you know the frame's IP address you can type it into your browser or FTP client program's address field and transfer files as explained in later sections.

The following illustrations show various ways in which DF-1710s can be administered via ethernet. Figure 1 shows the simplest configuration. A single computer is connected directly to a DF-1710 by an ethernet crossover cable. Media and a script file generated on the PC are sent via FTP to the DF-1710 at its default IP address. The script file directly references files by their names on the DF-1710's internal storage drive. Once the media and script file have been transferred the network connection can be removed or left in place as desired.
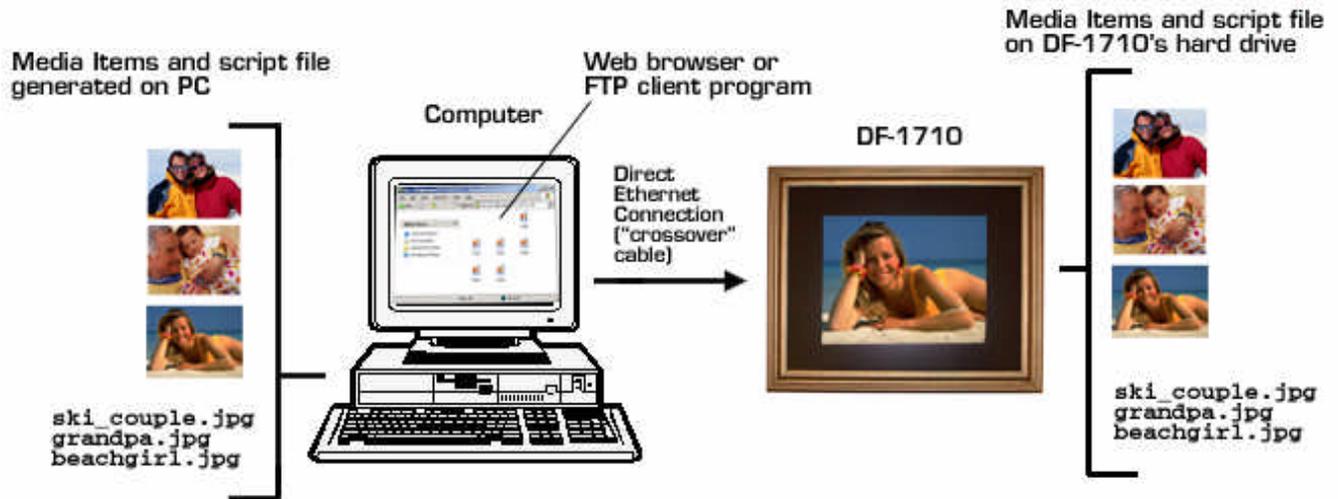
Figure 1: Direct Connection to One DF-1710

Figure 2 shows a simple LAN setup with one DF-1710. This is almost the same as the direct configuration of Figure 1, but since a hub is present standard ethernet cables are used instead of crossover cables. If a DHCP server is present on the network the DF-1710 will get its IP address from it, otherwise it will use its default IP address. If multiple DF-1710s are present on the LAN a DHCP server must also be present (or the DF-1710 IP addresses must be configured manually) in order to prevent address conflicts.
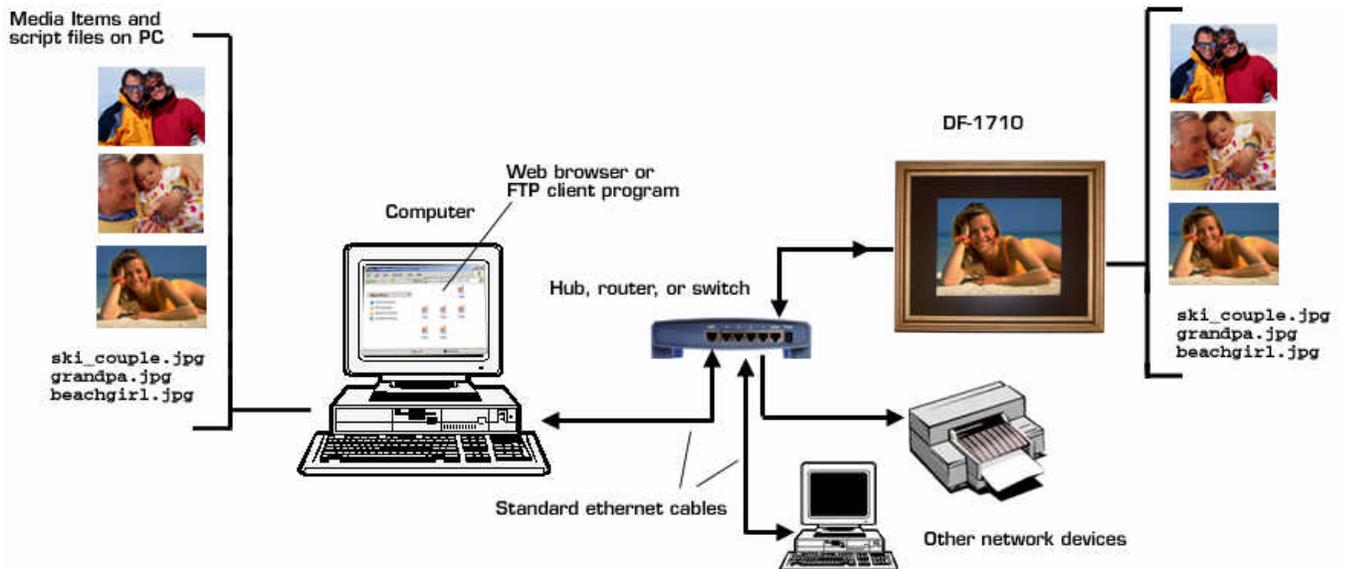

Figure 2: Small LAN Configuration

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Figure 3 shows a configuration typical of many homes and businesses today. An internet connection is provided by a cable or DSL modem, and the connection is shared among network users and devices by a router. In some cases the router is built into the modem and in others it is a separate device. In most cases the router contains a DHCP server. DF-1710s connected to this type of network will each receive a unique IP address from the DHCP server and can be communicated with from any computer on the network.

Figure 3: LAN with Cable/DSL Modem and/or Router with DHCP Server

Figure 4 below shows remote administration of a DF-1710 on a remote LAN via the internet using "push" mode content delivery. In order to "push" content to a DF-1710 its IP address must be known so that media and script files can be sent to it via FTP. In some cases the remote LAN and devices within it may have fixed addresses; in this case the DF-1710's address can be known reliably and push mode can be used. Port mapping for FTP access from outside the remote LAN may need to be configured within the remote LAN in order to bypass whatever firewall protection may be in place. Note that the script file running on the DF-1710 directly references media files that have been transferred or "pushed" to its internal hard drive.
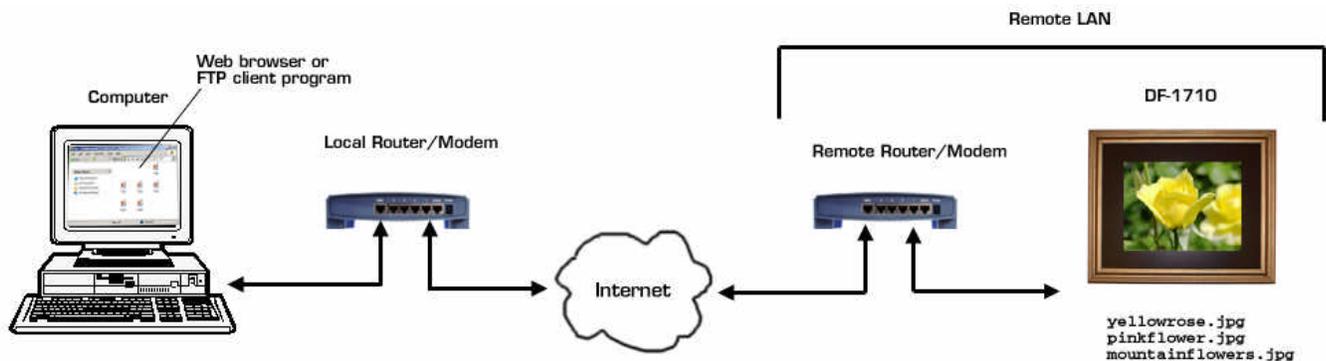
Figure 4: Remote Administration via the Internet using "Push" Mode

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In most cases, remote LANs will use subnets and dynamically-assigned addresses internally, so the IP addresses of DF-1710s on the remote LAN cannot be reliably or easily known. Furthermore, firewall and port mapping issues can become complex, especially when multiple DF-1710s need to be administered on each remote LAN. For these applications the DF-1710 has been designed to use a "pull" or "fetch" mode of operation. In "pull" mode, the script file contains a list of internet URLs (addresses) which point to locations on a web server rather than direct references to files residing on the DF-1710's own hard disk.

Figure 5 below illustrates this mode. The media files reside on a web server: your own, your personal website space on your ISP's server, or an independent website that has known content at known urls. A script file is first written and "pushed" to the DF-1710 locally, either before it's installed at the remote location, or with a local PC at the remote location. Note that the script file references internet URLs rather than directly referencing media files by name. When the DF-1710 encounters a URL in its script file, it fetches or "pulls" whatever file it finds at that URL and displays it. The file is cached on the DF-1710's internal hard drive to speed playback and to ensure continuous operation in the event the internet connection is lost. The locally-stored file is updated only when the unit is rebooted, unless the "nocache" option is specified for that item in the script file, in which case it is fetched each time it is referenced by the script file. In order to change the images displayed on the remote DF-1710(s) the files are updated on the server. For example, to change "yellowflower" to "beachgirl", the "yellowflower.jpg" file at http://www.myserver.com/picture1.jpg would replaced by "beachgirl.jpg". Future software upgrades will allow scheduled updating of cached files without the need for rebooting.

The advantages of the "Pull" mode method are that the IP addresses of remote DF-1710s do not need to be known, and firewall issues are not a problem since no FTP access is required from outside the remote LANs. Remote control of scripting is easily accomplished by including a reference in the original script file (on the remote units) to a script file on the server. The script file on the server will be executed as a "nested" script in much the same way as a program subroutine. Changes to the desired programming on the remotes can be achieved by modifying only the script file on the server.

Since the DF-1710 stores, or "caches" copies of fetched media and scripts, they will not be refreshed with new copies unless a) the unit is rebooted or b) the "nocache" option is used in the scriptfile, which tells the DF-1710 not to cache that particular item. If you want changes in the remote unit to take place as soon as the remote media is updated you must use the nocache option. The downside of this is increased network traffic, which may or may not be a problem in your application.

Pull mode is very powerful and flexible once you get the hang of it. Take a look at the "Photo Sharing" tutorial in this manual for an example.

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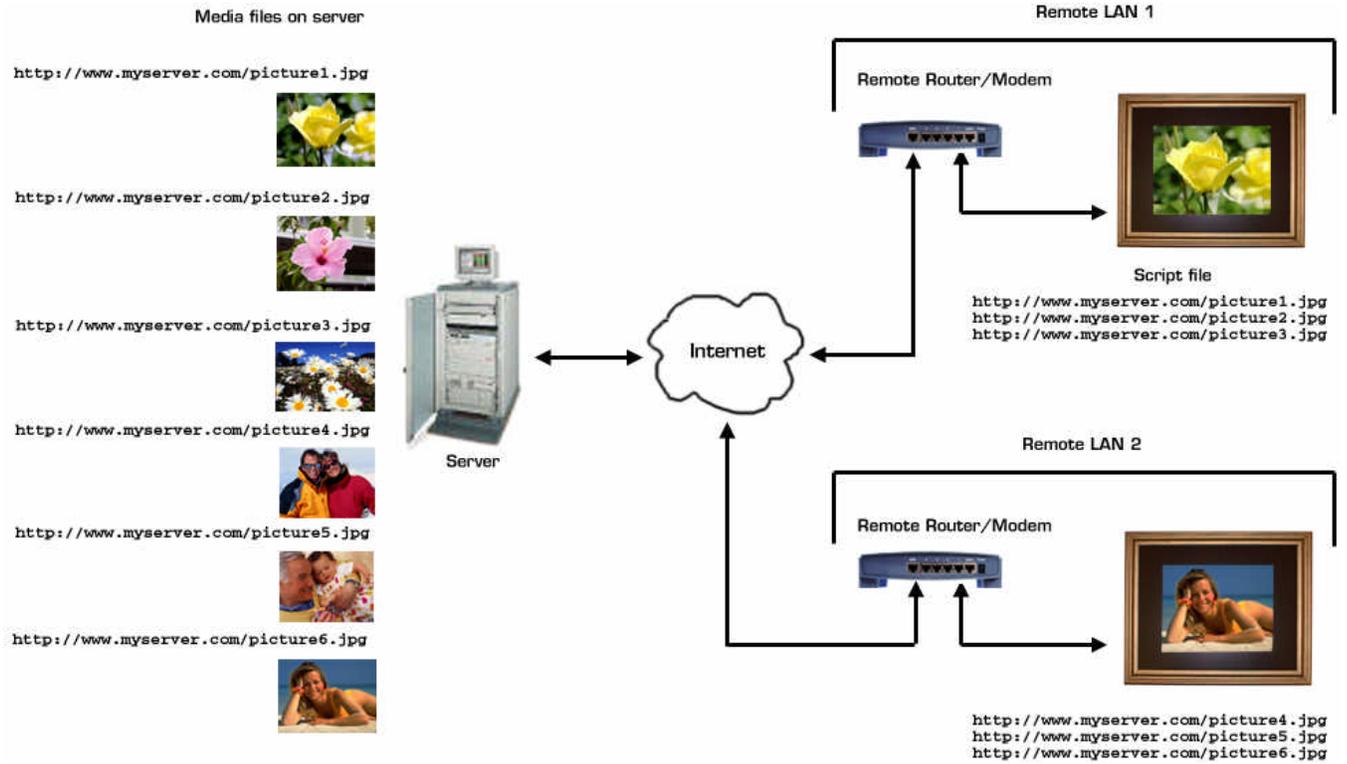
Figure 5: Remote Administration via the Internet using "Pull" Mode

Configuring Your Computer's Network Settings

If you're connecting your DF-1710 to an ethernet network that has a DHCP server on it and your computer is already on that network, you don't need to reconfigure anything on your computer – proceed to "Connecting your DF-1710 to a Computer or Network" below.

Your computer must be configured to use TCP/IP networking in order to communicate with your DF-1710. Some small networks using only a hub are configured to use Windows Networking or Appletalk instead of TCP/IP. In these cases you'll need to temporarily change your network settings to communicate with your DF-1710.

To check or change your TCP/IP configuration:

Microsoft Windows

The general instructions below apply to Windows® 95, 98, and ME. Settings for Windows 2000®, XP and NT will be similar but the control panels may differ slightly. Consult your operating system documentation for further information. Since you might need to restore your current settings we recommend making a note of them prior to changing any.

1) Click on the "Start" menu at the lower left-hand corner of the desktop. Choose "Settings" from the pop-up menu, and "Control Panel" from the flyout. Double-click "Network" ("Network and Dialup Connections" in Win2000) from the Control Panel window. In Windows 98 or ME click the "Configuration" tab and scroll through the list of items until you find one that starts with "TCP/IP ->" and contains the name of the ethernet port you'll use to connect to the DF-1710. In Win2000, double-click "Local Area Connection", then click the "Properties" button on the resulting "Status" window. Select an ethernet port, then "Internet Connection (TCP/IP)" and click on the "Properties" button.

2) In the TCP/IP properties windows, select the "IP Address" tab if there is one.

3) If your computer and the Digi-Frame are part of a network configured with a DHCP server, both will request IP addresses from the server. In this case, select "Obtain an IP address automatically".

4) If your computer will be connected directly to the Digi-Frame with a crossover cable, select "Specify an IP address" and enter an IP address for your computer of 192.168.0.201 (or any other address on the 192.168.0.xx subnet that will not conflict with the DF-1710's default address of 192.168.0.200). Enter a subnet mask of 255.255.255.0.

5) Click on OK. Your conputer will update the network configuration and then, if your new configuration requires it, show the "Systems Settings Change" pop-up window. Click on "Yes if necessary to save the changes.

Macintosh OS7-9

Pull down the Apple menu and select TCP/IP from the "Control Panels" flyout.

If TCP/IP is already configured to use ethernet <u>and</u> the "Configure:" pulldown is set to "Using DHCP Server" <u>and</u> the IP Address starts with 192.168.0, you don't need to change your settings and can close the control panel and proceed to "Connect your DF-1710" below.

If your settings are not as described above you should make a new TCP/IP configuration for use with your DF-1710 as follows:

1) Note the name of your current configuration in the TCP/IP control panel's title bar. You may want to return to this configuration after you're done transferring files to your DF-1710.
2) Select "Configurations" from the file menu or press   -K.
3) Select "Default", then click "Duplicate", then click "Rename" and rename the duplicate to "DF-1710" or other name of your choice.
4) Click "Make Active".
5) Select an ethernet port in the "Connect Via:" pulldown.
6) Select "Manually" in the "Configure:" pulldown.
7) In the "IP Address:" field type "192.168.0.201" (do not type the quotation marks).
8) In the "Subnet mask:" field type "255.255.255.0".
9) Close the TCP/IP control panel and click "Save" when asked if you want to save changes to the current configuration. Proceed to step 2.2 below.

If you need to return to your previous network configuration after you're done transferring files to or from your DF-1710, open the TCP/IP control panel, select "Configurations" from the file menu or press   -K, select your old configuration whose name you noted earlier, click "Make Active", and close the TCP/IP control panel.

Macintosh OSX

The settings under Mac OSX are basically the same as those in OS7-9, but they're found in the "Network" pane of the System Preferences utility instead of in the TCP/IP control panel. Instead of "Configurations", OSX uses "locations". Note your current location in the location pulldown, then choose "New Location" from the pulldown. The "Show:" pulldown should indicate the ethernet port you will use to connect to the DF-1710. Click the TCP/IP tab and adjust the settings as for OS7-9 above, then click "Apply Now".

If you need to return to your previous network configuration after you're done transferring files to or from your DF-1710, open the System Preferences utility and select the location whose name you noted earlier from the "Locations" pulldown, then click "Apply Now".

## *Connecting Your DF-1710 to a Computer or Network*

Once your computer is configured for TCP/IP networking, connect your DF-1710 as follows:

<u>Connecting directly to a PC</u>

If you are connecting directly to the DF-1710 from your computer without going through a hub, router, or switch, connect your DF-1710's ethernet port to your computer's ethernet port using the included "crossover" cable. There may be a label on the crossover cable denoting it as such, if not, refer to the photo below.

<u>Connecting to a Network</u>

If you're connecting the DF-1710 to a network hub, router, or switch, connect your DF-1710's ethernet port to the network using the standard cable.

Crossover Cable   **Standard Cable**

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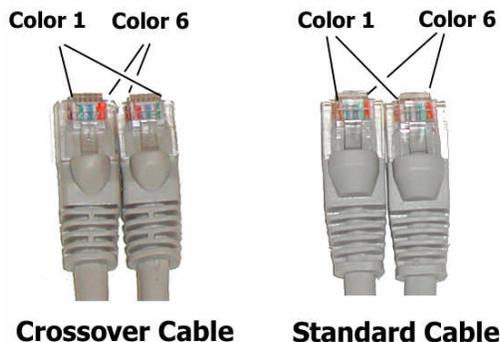
Testing Communication with Your DF-1710

When your DF-1710 is initially powered on it will display its network information. The same information can also be called up at any time (except during movie playback) by selecting "System Information" from the Main Menu. Make a note of the DF-1710's IP address. Under most circumstances you won't need the MAC address or Net Mask information that's shown, it's only for system administrators in special situations.

If a DHCP server was found on the network you'll see the IP address given to your Digi-Frame by the DHCP server. If no ethernet connection is present or a DHCP server is not found, the the IP Address will always default to xx.xx.xx.200 The values in the first four digits represented by x's will depend on your particular network)

If you're using a web browser to access your DF-1710, type "ftp://df:password@xxx.xxx.xxx.xxx" into your browser's "Address" (Explorer) or "Location" (Netscape) field, replacing, "password" with your password ("digiframe" is the default password), and "xxx.xxx.xxx.xxx" with your Digi-Frame's IP address. For example if your Digi-Frame's IP address is 192.168.0.25 and you haven't changed the default password you should enter:

```
ftp://df:digiframe@192.168.0.25
```

into the browser's address field. If you are using an FTP client program, enter the IP address of your DF-1710 in the appropriate field, enter "df" as the user name and "digiframe" as the password. No directory path should be entered. If all goes well the browser window or FTP client will then display the contents of the FTP "home" directory on the DF-1710's internal hard drive. If your web browser or FTP client program is unable to establish communication with your DF-1710 please refer to the Troubleshooting section at the end of this manual.

After reading the following sections on script files and supported media, you can drag and drop script and media files to your browser or FTP client window to transfer them to your Digi-Frame for its "user" slideshow.

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8. Script Files and Slideshows

Basic Information About Script Files

The DF-1710 gets its information about the order and timing of media items to be played and any other special instructions by means of text script files, either created by you and uploaded to the Digi-Frame via ethernet, or automatically generated by the Digi-Frame when a CD-ROM is inserted. Using the on-screen menu system and the remote control or control buttons you can select from among various script files present on the DF-1710's internal hard drive. At present the parameters (except the default slide time and transition) of an automatically-generated script file can only be modified by downloading it from the frame via ethernet, editing it on a computer, and uploading it back to the frame. Future software upgrades will allow editing of slideshow parameters using on-screen menus.

Script files are standard text files that can be created with Windows Notepad or, on Macintosh, with BBEdit Lite from Bare Bones Software. In its simplest form, the scriptfile is simply a list of media items, each one on a separate line, such as:

```
music.mp3
picture1.jpg
movie1.mpg
picture2.jpg
```

Uploading the file "script.txt" triggers the Digi-Frame (at the next media transition) to delete the old script file and rename script.txt to script_in_use.txt. The new script file is also automatically copied to the directory "user" so that it can later be selected via the on-screen menu system. While in operation, the DF-1710 is executing the script called "script_in_use.txt". Playback of the new scriptfile commences automatically. This design allows you to use tools readily available on any operating system to upload a new set of content, switch over to the new content set seamlessly, and delete the old content. This process is invisible to a person watching the screen, there is no downtime.

The DF-1710 processes the script file line-by line, displaying items in the order they are mentioned in the scriptfile. Any invalid script lines or script lines referencing media items that cannot be found will be ignored. When Digi-Frame reaches the end of the scriptfile, one of two things will happen:

- If at least one item in the scriptfile was played successfully, the Digi-Frame will start playing the scriptfile again from the beginning.

- If no items in the scriptfile could be played successfully, the Digi-Frame will halt with error message E018 (no media found). You can clear this error condition by uploading a new script file or the missing media, or by selecting another (CD-ROM) slideshow.

The DF-1710 uses default settings for playback unless they are overridden by specific options in the script file:

- The default pause time is 10, i.e. each JPEG will be displayed for approximately 10 seconds.
- The default transition effect between JPEGs is "flip", i.e. the next picture will "jump" onto the screen immediately.
- the default scaling mode is "fit", i.e. images will be fit to the screen size as closely as possible without changing their aspect ratio.

See the Advanced Scripting Information section of this manual to learn how to specify your own options that will override the defaults.

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Important Rules Regarding Script Files

- Filenames as typed in script files must be identical to the actual filenames in all respects, including upper/lower case. "SCRIPT.TXT" is not the same file as "script.txt", and "picture.jpg" is not the same as "picture.JPG"

- Filenames and directory (folder) names must not contain spaces or special characters such as #, &, ;, :, |, <, >, ", and , .

- Different operating systems use different types of "end-of-line" characters to indicate the end of each line of a text file. The DF-1710 recognizes DOS and UNIX-type end-of-line characters, but not Macintosh. SimpleText cannot save files with DOS or UNIX formatting, so it cannot be used to create DF-1710 script files on the Macintosh. We suggest BBEdit Lite, available at no charge from Bare Bones Software at http://www.barebones.com . BBEdit Lite can save files with DOS or UNIX end-of-line formatting. If the first image of your slideshow displays but never changes, it is likely that your script file has Macintosh end-of-line characters.

- The main user script file sent to the DF-1710 via ethernet must be named "script.txt" in order to be recognized.

- The filename script.txt is reserved for use as the main user script. Nested scripts or scripts fetched from remote urls, which will be discussed in later sections of this manual, should <u>not</u> be named script.txt.

- The main user script file script.txt must be uploaded to the "home" FTP directory (the one that opens when you first connect to the Digi-Frame). You can organize your media, playlists, and nested scripts into subdirectories (folders), but if you do, your scriptfile(s) must contain paths to all referenced items that are not in the home directory (see the section on paths below).

- Script files for CD-ROM and memory card slideshows must be named script.txt and be located at the root of the CD directory for the slideshow it relates to (cd1, cd2, cd3, etc.). This will be handled automatically when a CD-ROM slideshow is self-generated on disc insertion, but must be kept in mind if you are using CD-ROM directory slots to achieve multiple "user" slideshows loaded via ethernet (see "Using CD-ROM Directory Slots for Additional User Slideshows" below).

- Avoid deleting or moving the file script_in_use.txt. While this does not always cause problems, it can. The file can be downloaded and/or viewed (sometimes useful for troubleshooting purposes) at any time.

Advanced Scripting Information

CD-ROM and Memory Card Script Files

When a CD-ROM or memory card is inserted a directory for it is created, called "cdn", where "n" is the "slot" number from 1 to 100. The script.txt file for that CD, whether auto-generated by the DF-1710 or supplied on CD by the user, is written to the CD's directory. When a CD-derived slideshow is selected for display its script.txt file is copied to script_in_use.txt in the home directory and executed from there. When the user-uploaded slideshow is selected for display the script.txt file residing in the "user" directory is copied to script_in_use.txt in the home directory and executed from there. CD-ROM and memory card script files can be downloaded, edited, and re-uploaded to their respective CD-ROM directories in order to override the default settings that were created when the CD was first read. Be sure to maintain the correct paths when editing CD-ROM or memory card script files (see below).

The ordering of JPEG files in auto-generated scripts is alphabetical and the default display time for still images is about 6 seconds. Any MP3 files found on CD-ROM or memory cards will be compiled into a playlist which will run in "shuffledmusc/nointerrupt" mode starting at the beginning of the slideshow.

Using CD-ROM Directory Slots for Additional User Slideshows

Some users may wish to upload multiple slideshows via ethernet and be able to select among them using the menu system. This can be achieved by using CD-ROM slideshow slots. Directories for additional user slideshows must be named cd1, cd2, cd3, etc., up to cd100. The DF-1710 will handle these slideshows as if they were loaded from CD-ROM. The script.txt file for each slideshow must be located in its respective cdx directory.

Folder (directory) Path References in Script Files

Organizing your slideshows and media into folders is convenient and helpful but requires attention in script file writing. Because script_in_use.txt always resides in the home directory, you **must** add a path at the beginning of the script line for each media item that is stored in a folder other than the home directory. This is true even in nested scripts and MP3 playlists that may reside in the same folder as the media they reference. The forward slash character is used as a path separator. For instance, if you store your MPEG movies in a folder called "movies", you would specify

```
movies/mymovie.mpg
```

in your script file to play the movie "mymovie.mpg" stored in the folder "movies".

Paths are all relative to the home directory and should not include higher level directories such as drive names etc. Folders may be nested; for example you might create a folder for a presentation call "myshow", and within that folder you might store your still images in a folder called "stills". In this case your script file would reference a JPEG still as follows:

```
myshow/stills/picture1.jpg
```

The script file for each CD-ROM resides in that CD's directory and is called script.txt. All file references in each CD script are relative to the home directory of the hard drive, and must contain paths to the CD directory, for example, a script file for the CD in directory cd1 might look like this:

```
cd1/picture1.jpg
cd1/picture2.jpg
cd1/picture3.jpg
```

References to MP3 files in playlist (*.lst) files (see Section 8) must contain paths relative to the home directory, even if the MP3 files reside in the same directory as the playlist file. For example if your playlist, jpegs, and MP3s are in a folder called "myshow", your script file would look like this:

```
myshow/playlist.lst
myshow/picture1.jpg
myshow/picture2.jpg
etc....
```

and your playlist file would look like this:

```
myshow/song1.mp3
myshow/song2.mp3
etc....
```

Comments in Script Files

Any line beginning with the character "#" is ignored by the DF-1710 and may be used for descriptive comments in the script file.

Nested Script Files

Script files can reference other script files. This is referred to as "nesting" script files. The nested script files must conform to the same format requirements as main script files, must have an extension of ".txt", and can have any name except script.txt, which is reserved for the main user script file. Conversely, any text file with an extension of ".txt" encountered in a script file is treated as a nested script. It's important to understand that when a nested script is encountered it executes like a subroutine and does not get copied to script_in_use.txt like script.txt does when it is "pushed" to the frame. Nested script files, unlike the main script file, do not loop – they play once and then return control to the main script file.

As an example of script file nesting, you might have a main script file script.txt something like this:

```
template/company_song.mp3
template/company_logo.jpg
daily_stuff/todays_events.txt
template/campus_picture.jpg
template/mission_statement.jpg
daily_stuff/todays_events.txt
template/presidents_message.mpg
```

Note that in this example the media files for the introduction and end of the presentation are stored in a directory called "template", and the material to be updated daily, including the nested script "todays_events.txt", is stored in a directory called "daily_stuff".

The nested script "todays_events.txt" might look like this:

```
daily_stuff/visitors.jpg
daily_stuff/softball_standings.jpg
daily_stuff/sales_to_date.jpg
daily_stuff/employee_of_the_day.jpg
```

Each time the nested script is referenced by the main script its items are played once through. In this example, nesting the "daily stuff" keeps the main script cleaner and more organized by reducing it to one line each time it repeats in the main script.

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Referencing Remote Media Items and Scripts in Script Files

In addition to referencing locally-stored media items directly, script files can reference remotely-located media items and scripts via http or ftp (see other sections for more information on "pull" mode). An example script line that references a remote image on a website is:

```
http://www.website.com/mypicture.jpg
```

When this script line is encountered the DF-1710 will download the specified item to a cache directory on the frame before attempting to play it. The cache directory is automatically emptied each time the frame restarts. This system minimizes unnecessary network traffic by only fetching content once. If you need to be able to update content more quickly or if you cannot rely on the remote frames being power cycled, use the "nocache" option, which forces a fresh download of the item each time the script line is encountered. This will, of course, increase network traffic. You can also force a refresh of cached content by manually deleting the cache directory, assuming you have "push" access to the unit(s) in question.

Fetching scripts remotely is the key to updating remote frames using "pull" mode. Any remotely-referenced text file with an extension of ".txt" is treated as a nested script, i.e. it executes like a subroutine and does not get copied to script_in_use.txt. For example, if you have several DF-1710s that are at various locations and have unknown IP addresses, you could control them remotely by initially setting up each one (using "push" mode) with the following main script file (script.txt):

```
http://www.myspace.com/remote.txt,nocache
```

NOTE: The "nocache" option is important – if you don't include it then changes you make to remote.txt at the server will not show up on the remote frames until they are rebooted.

On your server at www.myspace.com, you would put the actual media-playing script, "remote.txt", which might look something like this:

```
http://www.myspace.com/picture1.jpg
http://www.myspace.com/picture2.jpg
http://www.myspace.com/picture3.jpg
```

You also, of course, would need to put the media files themselves at the server locations referenced by remote.txt. By merely changing the single script file and the media files referenced by it on your server you will be updating the content on all the remotely-deployed frames that you originally initialized with script.txt.

Remote MP3 References

If you specify a remote URL to an MP3 file in the main script file, it will be downloaded and cached. If you specify a remote URL to an MP3 file in a playlist, the MP3 player will stream the MP3 file directly from the server; it will NOT attempt to download and cache it.

Script Options

You can override Digi-Frame's default options (parameters) by specifying your own. The general format of each line in the scriptfile is a URL to the media item (image, movie or other playable file), optionally followed by a comma, then a comma-delimited list of options (optionally with an equals sign and a value to assign to the option), up to a total length of 2,048 characters (2Kbytes). This can be expressed more formally as:

```
Media-URL[,option1[=value1],[…],optionn[=valuen]]
```

For example, to display a JPEG image named picture1.jpg with a pause time of 3 seconds and a dissolve transition, you would enter the following line in your script file:

```
picture1.jpg,pause=3,transition=dissolve
```

Below is a list of options supported by the current software. Future software versions will support additional options. Note that options are case-sensitive.

Note that most script options are "sticky", i.e. once specified in a script line they remain in effect for all subsequent lines in that script until it loops back to its beginning or unless overridden by a new option specification. Options do not carry over from one script to another – when a new slideshow or nested script is loaded all options are reset.

handler=*local-path-to-handler*

> Specifies that a non-standard, user-supplied handler program must be used to play the specified item. A space and the path of the media item are appended to the commandline. For more information on writing and installing custom handlers for your own media types, please contact Digi-Frame developer support.
>
> Example: `myfile.xyz,handler=/usr/bin/myprogram –loud –fullscreen`
>
> Note: The command line for the handler may not contain a comma. Also note that if you specify a non-local file URL, your handler program is expected to handle the network transaction itself – the Digi-Frame will not attempt to download or cache the content locally.

killsound
> This option will stop any background music task when it is encountered in the scriptfile.
> Note: Playing an MPEG movie or a new MP3 file or playlist will automatically stop any running background music task.
>
> Example: `picture.jpg,killsound`
>
> The killsound option can also be used by itself by specifying a null media file with a leading comma,
> e.g.:   `,killsound`

nocache
> Applicable only to non-local Media-URLs, if you specify this option, the DF-1710 will attempt to download a fresh copy of the specified file each time this line of the scriptfile is reached. If the network or server is temporarily unavailable, the cached copy will be used. This option is used to ensure that the latest version of a dynamic content item is always being displayed. A typical example of this type of content is a satellite photograph on a weather-related Web site.
>
> Example: `http://www.site.com/weather.jpg,nocache`

Note: This option applies only to the current media item; it does not carry over to subsequent items.

nointerrupt

Applicable only to MP3 playlists. If this option is specified, and there is already an MP3 playing when this line is encountered again (when the script loops), the item currently playing will not be interrupted. See "Playing Sounds on the DF-1710", below, for more detailed information on the use of this parameter.

Example: `myplaylist.lst,nointerrupt`

nosound

Applicable only to MPEG video playback; the specified video will be played back without its soundtrack.
Example: movie.mpg,nosound
Note: If nosound is specified, and a background music track is running, the background music track will continue to play throughout the MPEG movie.

Example: `movie.mpg,nosound`

pause=*x*

Specifies the time in seconds to pause before displaying the next item, from 0 to 2,147,483,648 (invalid values of x, such as "nothing", are interpreted as 0). This pause time is measured starting from the moment Digi-Frame begins to process the media item itself. For instance, this means that if you specify a pause of 10 seconds and it takes Digi-Frame 5 seconds to download and display the image, the image will only be onscreen for 5 seconds before Digi-Frame proceeds to the next line of the scriptfile. The pause timing commences at the completion of any transition effects that are applied. Pause timing is approximate and will be longer if MP3 playback is operating. The pause parameter changes the default setting until the end of the scriptfile.

Example: `picture1.jpg,pause=20`

Note: The pause value is ignored for MPEG movies and, MP3 playlists, and MP3 audio files. The DF-1710 will load the next item in the scriptfile immediately after the movie finishes. In the case of MP3 music, the DF-1710 will start playing the music and immediately proceed with the next item in the scriptfile.

Note: The global default pause time can be set with the on-screen menu system. If you wish to be able to control the pause time for all still images in your slideshow using the menu system, do not specify any pause times in your script, because they would take precedence over the default.

scale=*scale-mode*

Choose scaling mode 'scale-mode', where scale-mode is either 'center' (do not resize the image at all; center it onscreen – the image may have a border or may not all show onscreen), 'fit' (enlarge or reduce the image isometrically so that it fits as well as possible onscreen without altering its aspect ratio), or 'stretch' (resize the picture to the screen's dimensions; this may distort the image). This parameter changes the default setting until the end of the scriptfile.

Example: `picture.jpg,scale=fit`

Note: This setting is relevant only to still image formats. The default is 'fit'. This is a good default. However, some image sources may be close to but not exactly 4:3 aspect ratio. For these types of images, 'stretch' may be a better choice as it will make the image occupy the entire screen area without visible distortion. For images that are patently not 4:3 (e.g. portrait mode images), 'center' or 'fit' are better choices.

shuffledmusic

> Applicable only to MP3 playlists. If this option is specified, the playlist will be shuffled and random selections will be played continuously until another music line is encountered. This option gives you a simple way to set up continuous, randomly varying background music for a slideshow without having to script in music at specific points in the scriptfile. See "Playing Sounds on the DF-1710", below, for more detailed information on the use of this parameter.

> Example: `myplaylist.lst,shuffledmusic`

transition=*transition-type*

> Applicable only to still images; the new image will be transferred to the screen with the specified transition effect. The default transition is "flip". The transition option refers to the "incoming" image, i.e. it will affect the transition <u>to</u> the image specified in the script line that the transition option appears on.

> Allowable values for *transition-type* are:

flip	The new image appears immediately with no transition effect.
dissolve	The new image is dissolved onto the screen one pixel at a time, scattered randomly.
blocks	The new image appears onscreen one small square at a time, scattered randomly.
crossfade	The new image is faded onto the screen, gradually replacing the old image.
fromright	The new image slides in from the right-hand edge, replacing the old image.
slideup	The old image slides up, leaving a black screen which is immediately replaced by the new image once the old image is gone.
slideleft	The old image slides left, leaving a black screen which is immediately replaced by the new image once the old image is gone.

> Example: `picture.jpg,transition=crossfade`

> Note: The global transition effect can be set with the on-screen menu system. If you wish to be able to control the transition effect for all still images in your slideshow using the menu system, do not specify any transition effects in your script, because they would take precedence over the default.

Tutorial – Setting Up Simple Internet "Photo Sharing"

A popular application of digital picture frames has been to give one to a friend or relative for installation in their home where you can send them pictures over the internet. You can do this with your DF-1710, and you won't have to pay any subscription fees! Here's how:

You'll need a web server, or more commonly, a personal website provided by your ISP. Most ISP's, such as AOL and Earthlink provide free website space with each access account. If you've already set up a personal website then you probably know how to upload files to your web space and create directories in it.

The recipient needs to have a DSL or cable modem and an available ethernet port for connecting the DF-1710 to the internet. A router and modem could be used if only a dial-up phone connection is available.

First you'll need to decide how your going to organize the pictures and scripts on the web server. You could make a separate directory for each remote frame you're going to control, or just put all the pictures in one directory for all remote frames. In any case, it's probably a good idea to keep the pictures in a directory separate from your website files. Consult your ISP or server's documentation on how to set up directories and upload files to them.

If you're using a free personal website provided by an ISP, the address of your website is usually a "subdomain" of the ISP's domain, for example http://hometown.aol.com/yourname. If you've registered your own domain then your website has its own name of your choosing, like http://www.mywebsite.com. In this example, we'll assume you have a web domain called www.mywebsite.com, and that you've made a directory on your site called "theirframe".

While you still have the DF-1710 you want to place at a remote location, write the following script and put it on the frame using FTP in "push" mode:

```
http://www.mywebsite.com/theirframe/theirscript.txt,nocache
```

This script tells the frame to download and execute the nested script theirscript.txt from your website. The nocache option is important if you want updates to take effect immediately as you make them, as it tells the frame to refresh the script continuously. Without the nocache option, changes you make to the script will not take effect until the recipient reboots their Digi-Frame. Once you've put theirscript.txt on the frame you can send it off to the recipient. The recipient can use CD-ROM's to view his or her own pictures at any time; your remote update script is saved automatically as the "user" script and can be re-selected with the menu system. If the recipient sends a new script.txt to the frame using the ethernet connection, however, yours will be overwritten, so it might also be a good idea to put it on a CD-ROM and send that along too for a backup.

Next, decide what pictures you want displayed on the remote frame and upload them to the directory or directories you've chosen on your web server. Let's say want the recipient's frame to show the following pictures: picnic.jpg, wedding.jpg, and reunion.jpg.

Upload all of these files to the directory "theirframe" on your web server.

Now you need to write the script file that you want to run on the remote frame. Each line of the script file will be an internet url that "points" to the file location on your server, instead of a reference to a file stored on the Digi-Frame's hard drive. Let's say that you want each picture to display for 15 minutes, with dissolve transitions. Your script file would look like this:

```
http://www.mywebsite.com/theirframe/picnic.jpg,pause=900,transition=dissolve
http://www.mywebsite.com/theirframe/wedding.jpg
http://www.mywebsite.com/theirframe/reunion.jpg
```

Upload the script file to your web server to exact location you specified in the script that you put on the frame, i.e. http://www.mywebsite.com/theirframe/theirscript.txt.

When the frame is turned on at the remote location it will look for a network connection and DHCP server (see the other sections of this manual for details). If it's connected to the internet it will run the script you previously loaded onto it, executing the remote script (theirscript.txt) and pictures that you put on your web server. If an internet connection is not found, the "No Media Found" error screen will be displayed, but the unit can still be loaded with pictures from CD-ROMs. The recipients will be able to use the controls on their Digi-Frame to scroll forward and back and to pause the images.

9. Playing Media on the DF-1710

Recognized File Types

The DF-1710 automatically identifies file contents by extension (this identification process is case-insensitive). The file extensions recognized by the Digi-Frame are:

Extension(s)	File type
.jpe, .jpeg, .jpg	JPEG still image
.lst	MPEG audio playlist
.mpe, .mpeg, .mpg, .m1v	MPEG motion video
.mp3	MPEG audio
.wav	Wave audio

Still Pictures

The DF-1710 recognizes only standard format JPEG files for still pictures. **Important Note on JPEG Images: There are two types of JPEG images, "standard" and "progressive". The DF-1710 cannot display JPEGs that have been saved in the "progressive" format, and there is no easy way to tell if an image is progressive or not. If you're having trouble seeing your images and are sure you've done everything else right, try opening them in PhotoShop® or other image editing program and re-saving them, making sure that they are saved in standard JPEG format.**

The DF-1710 considers 1024 x 768 pixels to be "full-screen" image size. Depending on the scaling options specified in your script file, images larger or smaller than this can be automatically scaled to fit the screen, or they can be displayed at actual size. If you want your pictures to always be displayed in their entirety, at their best resolution and optimal file size, use your image editing software to crop and/or size them to 1024 x 768 (or if they don't have exactly 4:3 aspect ratios, set the longer sides to 1024 or 768, depending on the image and frame orientations).

Video

Supported Video Formats

The DF-1710 can play video movies in the MPEG-1 format only. The DF-1710 cannot play DVD (MPEG-2) movies or Apple QuickTime® - formatted movies.

Although MPEG-1 is the format used for VideoCD (VCD) you cannot simply copy the .DAT file from a VideoCD and play it; you must use an extraction program such as VCDGear to convert the .DAT file to a standard playable MPEG-1 file. Super-VideoCD (SVCD) uses MPEG-2 encoding, which is not supported at this time.

Transcoding to MPEG-1 From Other Video Formats

The process of converting from one video format to another is referred to as transcoding. Various software programs are available for performing this task, and using them you can convert your non-MPEG-1 video content to MPEG-1. The details of the operation of these programs is beyond the scope of this manual, but here are some guidelines to keep in mind when transcoding:

- The larger the video frame size, the slower playback will be. You may want to experiment with various frame sizes – 352 x 240 is the NTSC VCD standard and usually works well, as does a frame rate of 29.97

FPS. Frame rates higher than 29.97 fps are not recommended, lower frame rates may play back more smoothly. In any case the VCD-standard overall bitrate of 1,150,000 bps should not be exceeded.

- If sound is not required for your presentation, transcode your video without sound, or use the "nosound" option in your script file to conserve processing bandwidth and improve video smoothness.

You may have to experiment with the many settings offered by your transcoding program which will affect how your MPEG video looks on the DF-1710.

Sounds

MP3 Sound File Playback

Your DF-1710 can play MP3 music files while running a slideshow. There are two ways to play MP3s: synchronized with content, or as a "free running" playlist. In "synchronized" mode, the MP3s will be played as they're encountered in the script and will be interrupted when a new MP3, WAV or MPEG file is encountered in the script file. In "background" mode, a separate playlist file is created which contains references to the MP3 files in the order they are to be played. The main script file (script.txt) contains a reference to the playlist file, and options can be added in the script file for uninterrupted and/or random-order playback.

Synchronized MP3 Playback

In synchronized mode you specify the names of your MP3 files directly in the scriptfile just as you do JPEG and MPEG media items; a playing MP3 file will continue playing until the file is finished, or until a "killsound" option, MP3,r WAV, or MPEG file is encountered in the script.

Synchronizing sound files to specific pictures in your slideshow may require some planning for best results; you need to make sure that you allow enough time for the sound item(s) to finish before proceeding with the next image. For example, if your DF-1710 contains pictures of a baseball game and pictures of a birthday party, you might create a scriptfile like this:

```
# Take Me Out to the Ballgame is 60 seconds long.
take_me_out_to_the_ball_game.mp3
baseball1.jpg,pause=20
baseball2.jpg,pause=20
baseball3.jpg,pause=20

# Happy Birthday is 30 seconds long.
happy_birthday.mp3
birthday1.jpg,pause=15
birthday2.jpg,pause=15
```

The above example plays "Take Me Out to the Ball Game" while the baseball pictures are onscreen, and "Happy Birthday To You" while the birthday pictures are onscreen.

Tha rules regarding filenames, paths and directories for MP3 files are the same as those for other media items such as JPEG and MPEG files (see Section 7).

Background (Non-Synchronized) MP3 Playback

For continuous background sound with no synchronization to the slideshow you need, in addition to your script file, a "playlist" file or files listing each of your MP3s on a separate line, for example:

```
music1.mp3
symphony.mp3
waltz.mp3
```

The MP3 playlist format is similar to a scriptfile, but the rules are slightly different: MP3 playlists cannot contain any options, and they can reference only local files or HTTP (not FTP) URLs. If you specify a remote URL in a playlist, the MP3 player will stream the MP3 file directly from the server; it will NOT attempt to download and cache it. If you specify a remote URL to an MP3 file in the main script file, it will be downloaded and cached. This playlist file must be saved with the extension .lst and uploaded to your DF-1710 in the usual way. You reference this playlist file in your script file with a line similar to this:

```
myplaylist.lst
```

References to MP3 files in playlist files must contain paths relative to the home directory, even if the MP3 files reside in the same directory as the playlist file. For example if your playlist, jpegs, and MP3s are in a folder called "myshow", your script file would look like this:

```
myshow/playlist.lst
myshow/picture1.jpg
myshow/picture2.jpg
```

and your playlist file would look like this:

```
myshow/song1.mp3
myshow/song2.mp3
myshow/song3.mp3
```

If a playlist is referenced in a script file without any added parameters, the list of MP3s will play, in order, until any of the following conditions occurs:

1. A "killsound" option is encountered in the scriptfile,
2. An MPEG video item is encountered in the scriptfile, or
3. A new music playback command is encountered in the scriptfile
4. The end of the playlist is reached
5. The end of the slideshow is reached, causing the playlist to be reloaded by the script file.

There are two parameters you can add to the playlist line in the script file to change the above behaviour: "nointerrupt", and "shuffledmusic":

- "nointerrupt" will make the playlist continue uninterrupted, so when the playlist command is encountered as the script loops around it is ignored.

- "shuffledmusic" will make it play the MP3s in the playlist in random order

For example, a script file for random continuous music background would look like this:

```
playlist.lst,shuffledmusic,nointerrupt
picture1.jpg
picture2.jpg
```

If you specify "nointerrupt" but you don't specify "shuffledmusic", the music will stop at the end of the playlist until the playlist command is encountered again. When "shuffledmusic" is specified the playlist loops immediately.

If you specify "shuffledmusic" but you don't specify "nointerrupt" the MP3 playlist will restart, interrupting the current song, when the end of the script is reached.

Note: If your script specifies "nointerrupt" and you send a new script.txt file to the frame while music is playing the new script file will not be recognized by the frame until the music has ended. If a script file specifies "nointerrupt" and/or "shuffledmusic" then changes to playlists may not be recognized (i.e. you edit a playlist file and re-upload it with changes but the old playlist keeps playing). To force changes to a playlist to be recognized, remove the "nointerrupt" and "shuffledmusic" options from the script file, re-upload the script file, then put the option(s) back into the script and upload again.

Playing Wave Audio Files

The DF-1710 can play back uncompressed Windows-compatible wave audio files (.WAV). This feature is useful for adding descriptive "sound bites" to specific sections of your slideshow. To play a WAV file, simply specify it as you would any other media item, for example:

```
company_logo.jpg
welcome.wav
beaverton.jpg,pause=15
```

Note: Wave audio playback is asynchronous. When the DF-1710 encounters a wave audio item, it starts playing the sound and then immediately proceeds with the next item in the scriptfile. In the example above, as soon as the voice-over starts playing, the DF-1710 will load and display the plant image. This behavior is similar to MP3 playback in "synchronized" mode.

Simple Animation with JPEG Still Images

While the DF-1710 does not at present support special animation formats such as Macromedia Flash®, you can produce simple "flip book" animation very easily using Adobe Photoshop® or other image editing software. Animation, especially with fixed background elements, will be easier with a program such as Photoshop® that supports multiple layers within documents.

To create animation, you produce a separate JPEG still image for each frame of the animation, then write a script that plays them all in the proper sequence, specifying a pause value of 0 for each image. There will still be some pause time for eadh image due to disk access and jpeg decompression time (and MP3 playback if applicable), but a pause value of 0 will give you the fastest possible animation.

By creating each element in your animation in a separate layer in your graphic program you'll be able to easily and independently move them around from frame to frame. Keeping some elements in exactly the same position from frame to frame will create a steady background and subjectively enhance the animation of those elements that do move. Multi-layered documents in Photoshop® must be saved in Photoshop (.psd) format. Save your "master" document in this format as you create it. Turn layer visibility on and off for each layer as required for the frame you're working on. When a frame is complete use Photoshop's "Save a Copy..." command to save a copy of the file in JPEG format. Photoshop® will "flatten" the image and save only the visible layers. You can then continue to work on the multi-layered "master" document without having to re-open it.

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10. Password Security

Your DF-1710 is a UNIX-based system. There is a single user, named "df", with a default password of "digiframe". These login details are required for authentication purposes when you connect to the frame to upload new media or change settings. The user name cannot be changed.

Changing the Password

For security reasons, you may want to change the ftp password on this product when you install it. To achieve this, use Windows Notepad or a similar text editor to create a new text file called "password.txt" containing your desired new password. **(Ensure that there are no leading spaces or other extraneous content in the file. If you upload a new password that is not what you thought it was, you may not be able to re-establish communication with your Digi-Frame).** Upload this file to the DF-1710 using ftp (as described in "Transferring Content to the DF-1710", above). When the file is uploaded, the password will be changed automatically and the "password.txt" file you uploaded will be deleted from the DF-1710's hard drive.

Note: Password updates are not processed while movies are playing; they are processed every time a new media item is loaded. It may take up to ten seconds after the update check is run for the password change to be accepted.

11. Software Updates

From time to time, software updates will be made available by Digi-Frame Inc.

If your Digi-Frame has an active internet connection, the easiest way to upgrade is by selecting the Upgrade Software option in the Main Menu. This will check for a software upgrade on Digi-Frame's website and install it if necessary. If no upgrade is required none will be performed. No personal data or other information is transmitted or exchanged in this process.

If your DF-1710 is not connected to the internet you can update by downloading the upgrade file digiframe.tar.gz from our website at ftp://www.digi-frame.com. To install the update, connect to the Digi-Frame via ethernet and upload the file to the home directory. The Digi-Frame will detect the presence of the update, the new software will automatically be extracted and installed. **During the upgrade process the Digi-Frame will reboot itself twice, do not interrupt the process until it is complete and the unit is functioning normally!**

If you do not have an ethernet connection to your DF-1710 the upgrade file can be put onto a CD or memory card, which is then simply inserted to initiate the upgrade process.

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12. Advanced Networking Topics

Firewall Issues

"Pushing" content to one or more DF-1710's with a direct connection or a LAN is simple, especially if there's a DHCP server on the network, as is usually the case when a cable or DSL modem is present. Firewall and IP addressing issues complicate things however, when you're trying to update DF-1710s on remote LANs via the internet. Remote LANs are likely to have dynamically-assigned internal IP addresses, so those of the DF-1710s on that network may not be known. Firewalls may prevent external access unless special port-mapping is implemented in the local router configuration (see below). For these applications the DF-1710 offers "pull" mode; see other sections of this manual for more details.

If your Internet connection passes through a firewall (such as a DSL/cable router that implements NAT), and you need to be able to establish inbound ("push") connections to Digi-Frames from outside the firewall, you'll need to establish port mapping so that you can connect to at least port 21 (ftp). For compatibility with future software updates, we also suggest you make port 80 (http) accessible unless you have security concerns about this action.

Manual setting of DF-1710 IP addresses

If your application requires manual setting of DF-1710 IP addresses please contact us for detailed information on how to do this.

Notes on DHCP (Dynamic Host Control Protocol)

1. If the unit is booted without a DHCP server or ethernet connection present and you subsequently want it to request an IP address from a DHCP server on the network, you will need to remove and reapply power (reboot) to force the unit to request an address from a DHCP server.
2. By default, Digi-Frame will cache DHCP leases across reboots. To override this behavior, you can connect to the DF-1710 via ftp and create a dummy file in the root ftp directory named "dhcp.dyn". If this file exists, your DF-1710 will NOT cache its leased address; each time it reboots, it will request a new address from the DHCP server. The behavioral difference between these two modes depends on your network configuration. Most DHCP server products will attempt to reissue the same IP address to the same MAC address where possible, so your DF-1710's IP address should remain constant in either mode. Some DHCP products, however, may issue a new address to the product each time it boots. This issue has been observed most frequently with simple residential router boxes used to share a home DSL or cable modem connection. The best way to avoid this type of problem is to use a more advanced DHCP product that is either linked to a DNS server (so that you can use "friendly" names to access your frames, e.g. "digiframe-foyer", "digiframe-managers-office", etc) or can be configured to reserve specific IP addresses for specific MAC addresses. Consult the documentation for your DHCP/DNS server software for assistance on configuring these network parameters.

Remote Rebooting

You can reboot a DF-1710 remotely by simply sending it a dummy file called "reboot.now".

Your DF-1710's MAC Address

Every ethernet device manufactured has a unique identifying address, called its MAC (Media Access Control) address, which may be required for certain networking situations. DHCP servers, for instance, can often be configured to assign specific IP addresses to specific devices, identified by their MAC addresses. The MAC address of your Digi-Frame is printed on a label on the back of the unit, along with the product serial number.

13. Error Codes

If the DF-1710 encounters a serious problem, it will halt with an error code onscreen and an explanatory message. Common error codes and their explanations are listed below.

E018: No media found.
An attempt to load and play the scriptfile finished without any item being successfully displayed. Either the scriptfile is empty or malformed, or there is no scriptfile (or the media files associated with this scriptfile could not be found).

14. Troubleshooting

Problem: **When I turn on the DF-1710 I hear a beep but the screen is dark. The LED's in the Input/Output bay are on.**
Solution: Press the backlight power button on the main unit or the remote control. The DF-1710 usually powers up with the backlight on but this may not always be the case.

Problem: **Sometimes nothing seems to happen when I press buttons on the remote or the main unit.**
Solution: The Digi-Frame software is quite "busy" performing many tasks and sometimes cannot pay attention to the user inputs. The menu system cannot be accessed during MPEG playback. There is also a slight time lag due to disk access and image decompression when scrolling from picture to picture.
Solution: The sensor opening in the picture mat may not be properly aligned with the sensor. Make sure the mat has not shifted in the frame and covered the sensor.
Solution: You may be too far from the frame. The infrared remote has a maximum range of 10 – 15 feet.

Problem: **I changed the monitor settings with the "Adjust Picture and Sound Volume" menu and now my picture is all messed up.**
Solution: Select "Image" from the "Adjust Picture and Sound Volume" menu and set the following settings:

       CLOCK: 42
       PHASE: 36

You may also want to adjust the "Position" settings as follows:

       Horizontal: 0
       Vertical: 88

The "Position" settings are not "remembered" by the monitor control after power is removed.

Problem: **I cannot establish communication with the DF-1710 via ethernet.**
Solution: Check to see that your TCP/IP settings are correct.
Solution: Check that you are using the correct type of ethernet cable. If you are trying to connect directly to a computer without using a hub or network, you <u>must</u> use the special "crossover" cable. If you are connecting to a network you <u>must</u> use the standard, non-crossover cable.
Solution: Check the green LED "link" lights on both the DF-1710 and your PC (if dorectly connecting to a PC) or hub (if connecting to a LAN). The link LED's should be lit on both ends of the connection. If they are not, a fault in the network hardware or cabling is indicated.

Problem: **My TCP/IP settings and cabling are correct but my browser/FTP Client cannot establish contact with the DF-1710.**

Solution:	Make sure that you have correctly entered the IP address, user name (df) and password (digiframe) in your browser or FTP client program.

Problem: **When I try to access the DF-1710 I get a message "Log-in incorrect".**
Solution: Your user name and/or password have not been entered correctly in your browser or FTP client program.

Problem: **I can transfer files to the DF-1710 but no images are displayed.**
Problem: **One image is displayed but it never changes, even though my script file calls for multiple images.**
Problem: **My slideshow is kind of working, but not all of my pictures are being displayed.**
Solution: Make sure all your JPEG's have been saved in standard JPEG format, not "progressive JPEG" format.
Solution: Make sure your script file is named "script.txt". The DF-1710 will automatically change its name to "script_in_use.txt" once it's been detected, but your file must be named "script.txt" and be luploaded to the home directory in order for the DF-1710 to recognize it.
Solution: Make sure your text file has been saved with DOS or UNIX end-of-line characters.
Solution: Make sure the filenames referenced in your script file are spelled exactly like the filenames as they appear on your computer. They must match case as well, i.e. if your picture is called Dog.JPG, the script file line must reference Dog.JPG, not dog.jpg.
Solution: Make sure none of your media files has a filename beginning with a space. Make sure none of your directory names or filenames contain spaces or special characters such as #, &, ;, :, |, <, >, " or , .
Solution: If your media files are within subdirectories (folders) on the DF-1710, make sure that your script file contains correct path references.

Problem: **My images look fine on my computer but display "garbage" on the DF-1710**
Solution: It is likely that you are transferring your image data in "ASCII" or "Text" mode in your FTP client program. Be sure your FTP client is set for "binary" file transfers. In Transmit for Macintosh, this setting is under the File menu – ensure that "ASCII Mode" is un-checked.

Problem: **Movies play slowly or jerkily.**
Solution: Digi-Frame is designed to play back MPEG movies formatted in accordance with VideoCD standards. The two standard resolutions for VideoCD are 352x240 pixels at 29.97 frames per second (NTSC) and 352x288 pixels at 25 frames per second (PAL). One or more mono or stereo audio tracks are optional. Although Digi-Frame will successfully play back most MPEG-1 video streams, smooth playback is not guaranteeable with any non-VideoCD-compliant movie file. If your MPEG-1 encoding software has an option for "VideoCD" or "CPB" (Constrained Parameters Bitstream), you should use this option when encoding content for playback on the Digi-Frame.

Problem: **I extracted an MPEG movie file from a VideoCD, but it doesn't play back properly (or at all) on my Digi-Frame. I made sure the filename has one of the recognized extensions and that it is physically on the hard disk.**
Solution: Please note that you cannot simply copy the .DAT file from a VideoCD and play it; you must use an extraction program such as VCDGear to convert the .DAT file to a standard playable MPEG-1 file. If you are sure the movie was extracted properly, your source medium is probably a Super-VideoCD (SVCD). SVCD, like DVD, uses MPEG-2 encoding. For licensing reasons, Digi-Frame does not support MPEG-2 at this time.

Problem: **MP3 audio playback is stuttery.**
Solution: The cause of this problem is that some other task is occupying your Digi-Frame's processing resources and intermittently preventing the MP3 playback task from running. There are several possible root causes of this; MP3s encoded at too high a bit rate (the highest recommended rate is 128kbps, though Digi-Frame supports up to 256kbps); network traffic (it is normal for

MP3 audio to stutter occasionally while large file transfers are taking place on your Digi-Frame) or unusually large/complex JPEG images taking exceptionally long to decode (resize your JPEGs to at most 1280x1024 pixels).

Problem: **My Digi-Frame's LCD has dots that stay "on" or "off" all the time**

Solution: LCD panels are delicate and difficult to manufacture. Each pixel on a color TFT LCD requires three "sub-pixel" transistors: one red, one green and one blue, for a total of 2,359,296 transistors in the DF-1710's screen. It is impossible for LCD panel manufacturers to guarantee 100 percent perfection in those millions of tiny transistors while keeping the product affordable. This is true of all devices using LCD technology, not just the Digi-Frame. "Stuck" pixels are not usually objectionable with photographic or video images at normal viewing distances.

It is standard in the LCD-based product industry that a certain number of sub-pixel anomalies (a pixel stuck on or off) is considered acceptable. Following are rough guidlelines as to whether an LCD screen is considered to be defective as far as bad pixels is concerned. A bad pixel is a pixel that always has the same colour, regardless of what is on the screen.

•   If there are ten or more bad pixels the LCD is considered defective.
•   If there are six or more bad pixels of the same colour, the screen is defective.
•   If two bad pixels adjoin horizontally and also have the same colour, the screen is considered to be defective. If they adjoin vertically, or if they have different colours, the screen is considered to be OK.

Digi-Frame Inc. reserves the right to make final determination as to whether or not an LCD is defective. If you believe your LCD is defective according to the above guidelines please contact our customer service department for further information.

Dead pixels can also appear as a result of abuse. Digi-Frame is not responsible for damage to LCD's caused by mechanical abuse, mishandling, or exposure to excessive temperature humidity, or condensation.

15. Specifications

Microprocessor	300MHz Pentium® MMX compatible
Network Interface	10/100baseT Ethernet
Still Image Formats	JPEG/JFIF, JPEG/Exif2
LCD Resolution	1024 x 768 pixels
Still Image File Size Capacity	Up to 8192 x 6144 pixels
Motion Video Formats	MPEG-1, VideoCD stream compatible
Motion Video Resolution	At least 352x288@30fps (encoding dependent)
Audio Formats	WAV, MPEG-1, MPEG-2, MPEG-2.5 Layer III up to 256kbps
Audio Capability	16-bit stereo, sample rate up to 44.1kHz (CD quality)
Supported Network Protocols	DHCP, FTP, HTTP
Power Requirements	90 – 240 VAC, 50/60 Hz, 60W
Connections	Ethernet, USB, PS/2 device, RS-232C (DB9), audio line out
Dimensions	(WxHxD): 17.83" x 14.5" x 2.9" (excluding frame)
Weight:	19 pounds

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