DAYSHIFT
Record • Play • Timeshift

USER GUIDE
Version 5.0

cool technology for
- **PRODUCTION**
- **PLAYBACK**
- **STREAMING**

RUSHWORKS

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Introduction

DAYSHIFT is a versatile and easy-to-use audio/video appliance built on a real-time file encoding and playback engine. It's designed to automatically start recording the input signal at a time and length you specify … and start playing back the file at the time you specify. Playback can begin while the file is still recording, or any later time on the same or following day.

You can also use it for manual ingest from sources … as well as manual playback of individual files. The default inputs and outputs are SDI and HDMI.

Hardware Overview

The **DAYSHIFT** System includes the Dell Windows 10 computer, 1920x1080 monitor, keyboard and mouse. The standard configuration includes **one SDI/HDMI input card** and **one SDI/HDMI output card.**

Software Overview

After powering up the system, run the **DAYSHIFT** program by double-clicking the DAYSHIFT shortcut icon on the desktop. When the application opens you will see this user interface.

The **DAYSHIFT** user interface has different panels for controlling different functions. You can arrange these panels on the desktop however you wish.

1) At the top left side of the screen is the **DAYSHIFT** panel. Here you monitor the input, manually record, and set up an automated recording with or without scheduled playback.

2) Below the **DAYSHIFT** panel is the **Settings** panel. Choose the input connector you wish to use (SDI, HDMI, etc.), and set the encoding bit rate.

3) At the top middle of the screen is the **Preview** panel. This is used to cue and view files in the File Browser, and use the motion controls to find start points for manual playback.

4) Below the Preview panel is the **File Browser** panel. This allows you to select a DayShift clip (or navigate to other clips), and use motion controls to manipulate the clip. There is also a search box to let you quickly locate the clip you want to play. There are two File Browser views available: **text** and **icon**.

5) Toward the right side of the screen is the **Program Monitor**. This screen displays the system output. There are also controls to display a bug, monitor audio, and display the status of the currently playing clip.

6) The internal **Switcher Panel** is located below the Program Monitor. It controls which switcher input is selected for output. Once a clip is cued in the Preview Monitor, clicking **TAKE** or **AUTO** (fade) will route the input to the Program Monitor and system output. You can stop playback at any time by clicking **BLK** on the switcher. You can also toggle a branding graphic ("bug") on and off at any time.

7) To the right of the Program Monitor are the **Clock and Audio** panels. They display the current time, a counter, and the system's audio level output. A slider is provided for adjusting the master volume. There is also a mute button which you can use to silence the audio output.
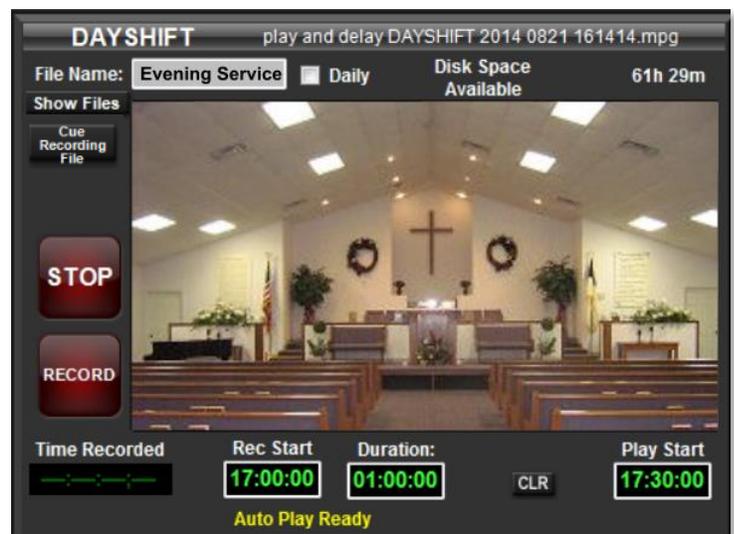
Further information about the functions of each of these components is presented in the sections that follow.

DAYSHIFT Panel

To set up an <u>automated</u> recording enter the three required times using the keyboard and/or the number pad on your keyboard. Clicking in the **Rec Start** field highlights the whole field, so you're ready for time entry. You do not need to type any leading zeroes or symbols, so for example, to start at 1AM all you need to type is 10000.

Note: For all time entries the system requires 24 hour (military) time. HHMMSS

There is no need to use the tab key or click on each box individually to move from field to field. Clicking the <**enter**> key after typing the desired value will take you to the next field.

DAYSHIFT — play and delay DAYSHIFT 2014 0821 161414.mpg
File Name: Evening Service ☐ Daily   Disk Space Available   61h 29m
Show Files
Cue Recording File
STOP
RECORD
Time Recorded   Rec Start 17:00:00   Duration: 01:00:00   CLR   Play Start 17:30:00
Auto Play Ready

Example:

To start a recording **at 5:00pm**, record for **one hour**, and start playing back **at 5:30pm**, follow these steps … as illustrated in the graphic above:

1) Enter an appropriate name for your recording in the **File Name** box.
2) Check the **Daily** box if you wish the system to repeat the scheduled record every day.

> **Note**: The amount of Disk Space Available for storing your recordings is displayed in the upper right of the DayShift panel.

3) Click on the **Rec Start** box – type **170000** – and click <**enter**>
4) In the already highlighted **Duration** box – type **10000** – and click <**enter**>
5) In the already highlighted **Play Start** box – type **173000** – and click <**enter**>

Beneath the time entries you'll see status messages as you enter times, as well as system status regarding the current state of automated recording and playback.

The **DAYSHIFT** panel can also be used to record in **manual mode**. Just click the **RECORD** button to start recording, and then manually start playback of the file from the **File Browser** panel. Here is how it works:

To set up a <u>manual</u> recording …

1) Enter an appropriate name for your recording in the **File Name** box.
2) When you're ready to start recording, click the large **RECORD** button.
3) Once the recording starts, you'll see the **File Name** appear in the **File Browser**, which defaults to displaying the contents of **D:/Recordings**. The file automatically cues for playback, as indicated by the green highlight. You can select other files for preview at any time before you start playback. When you're ready to recue the currently recording file for playback, click the **Cue Recording File** button.

Use the Preview Monitor playback controls to set the desired start point for manual playback.
4) Click the **TAKE** or **AUTO** (fade) button, or press <**enter**> to begin playback of the file to the system output.

Settings Panel

The **Settings** panel defaults to the **DAYSHIFT** tab. This displays the product logo, **Show User Guide** button, software version, and **Configure …** button,

Setup Tab

1) Select the **Format** you wish to use for encoding.
The default is MPEG-2.

2) Select the **Bit Rate** for the encoding.
A good average for SD MPEG-2 encoding is 8Mb/sec.
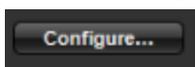A good average for HD MPEG-2 encoding is 35Mb/sec.
Based on your entry, the <u>amount of available recording time remaining</u> on your D: drive is displayed.

3) Select the hardware **Input Connector** for the source.
The available inputs depend on which input card you have configured in your system.
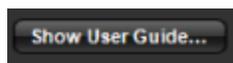The default is SDI Video and Audio (embedded).

Configure ...

Click this button to open the Hardware tab. Here you can select the Video Resolution and Video Input type, as well as the Main Audio Input. These dropdown options may vary depending on the Input/Output hardware card you have configured in your DAYSHIFT system.
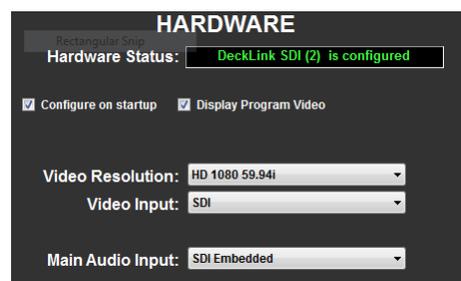
Show User Guide ...

Click this button and the   Documentation folder will open. Here you'll find the DAYSHIFT User Guide (PDF) and appropriate connectivity diagrams.

Preview Monitor

The **Preview Monitor** shows a video preview of the file selected in the **File Browser**. You will also see the duration and an **audio icon** indicating whether or not the clip has audio. The **transport**

controls allow you to cue up the desired spot in the clip from which playback will start if you decide to play the clip in the Program Monitor. To play the clip on the Program output, just click the **TAKE** or **AUTO** (fade) button on the **Switcher Panel**, or **Enter** on the keyboard. When LIVE input or BLK is selected, these controls are disabled.

File Browser Panel
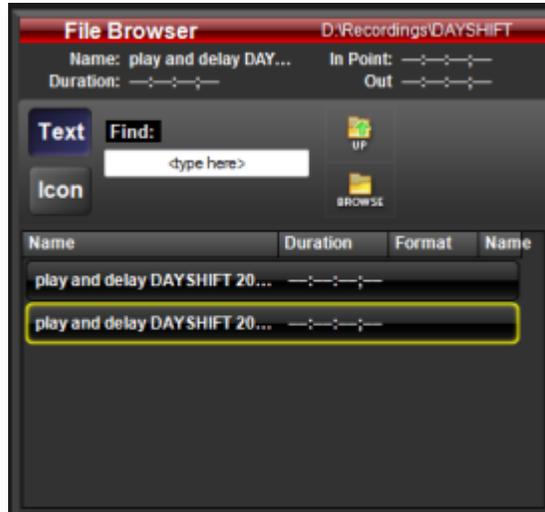
The **File Browser** panel can be used to play recorded files – and any other properly formatted files on your system - simply by clicking on them and then clicking the **Take** or **Auto** button on the Switcher panel.

Files can be displayed as a simple text list using the **Text** view, or as thumbnails using the **Icon** view. Toggle between them to select your view. You can also navigate through the D: file structure to locate files you'd like to preview and play. The full text search function (**Find**:) applies to the current level of your hierarchical search.

Program Monitor
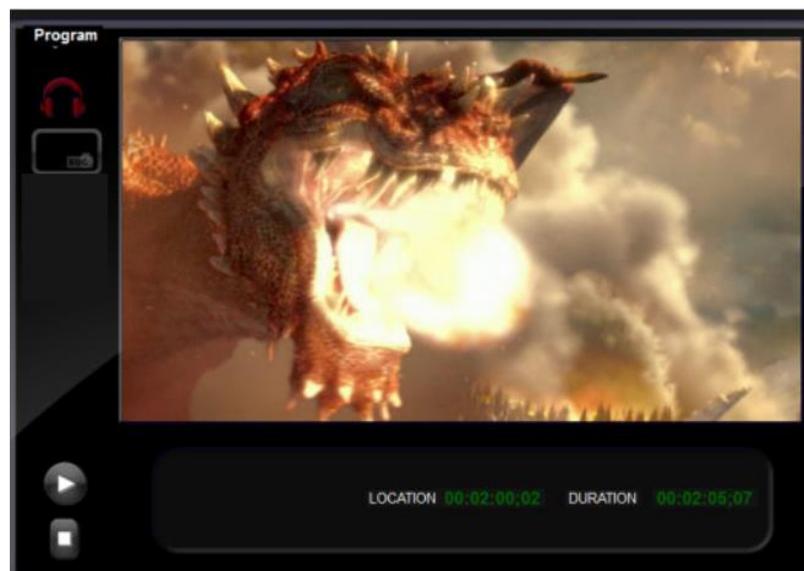
The **Program Monitor** displays the video output of the system. It is the final composited video signal output that the system is producing. It displays the current virtual switcher selection, which can be **INPUT** or **BLACK**.

When files are selected in the File Browser, they are cued using one of the two file players. These are designated as PLAY 1 and PLAY 2 on the switcher. They are not actually buttons on the Switcher, but reflect the status of the background player functions.

The **headphone icon** switches the computer system audio output (NOT the Program video/audio output) between Preview and Program audio for monitoring purposes only. The Ladybug button is for toggling on/off a "bug" (branding logo) over your output. To select a file, right click the button and browse to a PNG file. Once selected you can turn the bug on and off by clicking the bug icon. If a clip is playing on the Program Monitor the Location and Duration boxes indicate the time code LOCATION and DURATION of that clip. During DayShift playback the duration is not displayed.

Clock & Audio Panel

The **Clock Panel** displays an analog clock showing the current time, as well as a digital clock and timer. To start the timer, click the button labeled "Click for Timer" and it will start counting up seconds. To stop the timer, touch the display. To start again, touch the display again. The "Reset" button returns the display to zero.

The **Audio Panel** shows the real-time master levels of your **DayShift** system. These levels reflect what the system is outputting on the master audio output in **DayShift** mode … and what is being captured during **Encode** mode. The **Slider** adjusts the mixed output of all the audio sources. The **Mute** button mutes the audio output of the system.

The audio output controls have no effect when you are recording DAYSHIFT clips. DAYSHIFT will always record the audio input at unity.
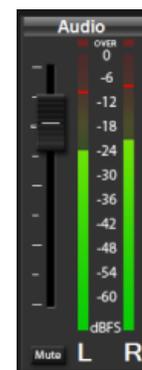
Internal Switcher Control Panel
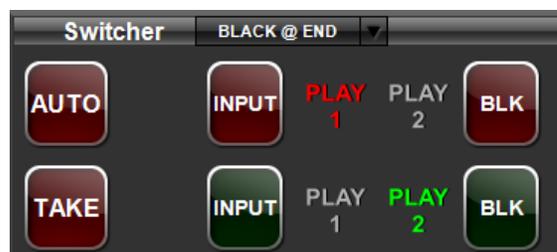
The internal **Switcher** controls what input is on the Preview and Program bus. You can change inputs in the following ways:

1) **AUTO button -** This will dissolve/fade between what's currently active on the **Program** input and the **Preview** input.

2) **TAKE button -** This will cut between what's currently active on the **Program** input and the **Preview** input.

3) **Direct selection** - Clicking the **INPUT** or **BLK** buttons on the Preview (lower) bus displays that source on the Preview Monitor. Clicking the **INPUT** or **BLK** buttons on the Program (upper) bus displays that source on the Program Monitor, which outputs the system video and audio.

Clips and graphics are routed to the **Preview** bus by clicking on them in the **File Browser**. When the **Preview Monitor** is active the **PLAY 2** item on the Preview bus is **GREEN**. To play the clip or graphic use the **AUTO** or **TAKE** buttons. In the example above on the right, one clip is outputting on the Program Monitor and a second clip or graphic is cued on the Preview Monitor, ready to be output via the AUTO or TAKE buttons.

Clip End Actions allow you to control what happens when a clip on the Program Monitor (system output) reaches its end. The menu is located in the Switcher panel header.

When you click on the <u>text</u> of the button it will cycle though the four choices. When you click on the <u>down arrow</u> it will display a menu as shown on the right:
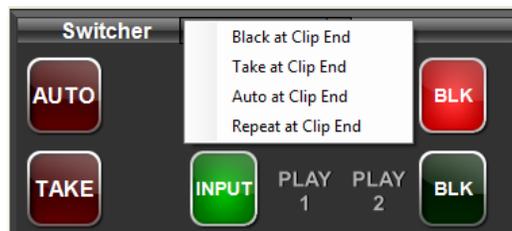
Black at Clip End – When the clip finishes playing you will see black until you choose another input on the switcher.

Take at Clip End – When the clip finishes playing the system will perform a **TAKE** command, switching to the preview input.

Auto at Clip End – When the clip finishes playing the system will perform a fade-to-black transition.

Repeat at Clip End - The clip will repeat until another input is selected. This option displays in **RED** as a reminder that the clip will keep looping endlessly until you stop it.

Continuous Shift Mode

If you simply want to delay the playback of the input signal, typically appropriate for delaying a signal to accommodate different time zones, then the **Continuous Shift Mode** is ideal … and very simple. If you want to use this mode, click the **Configure …** button and check the **Continuous Shift Mode** checkbox, then click OK and restart the app.

The User Interface hides most of the more complex entry windows, allowing you to enter a **Delay** amount (HH:MM:SS) and then click **START SHIFT**. That's all there is to it.

The system will begin recording when you click the button, and playback will begin after the specified delay.

The **DAYSHIFT** user interface has different panels for controlling different functions. You can arrange these panels on the desktop however you wish.

1) At the top left side of the screen is the **DAYSHIFT** panel. Here you monitor the input, enter the **Delay** (playback) value, and click the **START SHIFT / STOP SHIFT** toggle button.

2) Below the **DAYSHIFT** panel is the **Settings** panel. Click the **Setup** button to choose the the encoding bit rate. The default recording format is MPEG-2.
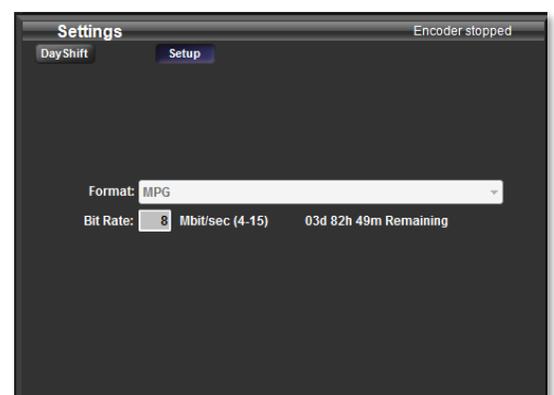
3) Toward the right side of the screen is the **Program Monitor**. This screen displays the system output, which is the delayed playback. This signal is on the SDI/HDMI output of the I/O card in the DAYSHIFT computer. Two time windows displaying the LOCATION and DURATION of thethe currently playing clip (delayed output).

There is also a button on the upper left you click to display a branding logo, usually called a "bug". That bug should be a transparency-enabled PNG graphic prepared at the resolution you're outputting (e.g. 480i, 720p or 1080i). Put your "bug" files in the D:\Media\Bugs folder.

4) To the right of the Program Monitor are the **Clock and Audio** panels. They display the current time, a counter, and the system's audio output level. Be sure to set the slider to -18dB (or double-click the slider button and it will automatically set that value).

DAYSHIFT Panel – Continuous Shift

To set up a Continuous Shift, in the Delay window enter the amount of time you want to shift the output playback.

Note: The system requires 24 hour (military) time. HHMMSS

To start the Continuous Shift …

1) Enter an appropriate name for your recording in the **File Name** box, e.g. **3 HOURS,** or **CDT**, or something similar that indicates what's in progress when you're shifting.

2) When you're ready to start recording, click the large **START SHIFT** button. It will illuminate bright red, and the text will display **STOP SHIFT**. While shifting, the DAYSHIFT window has a red outline, indicates the currently recording file name at the top, displays the Time Recorded in the current file (one hour per file) and S**HIFTING Started** in red at the bottom of the window.

You won't see anything on the Program screen until the **Delay** time has been reached. So for a THREE HOUR Delay you'll see playback begin exactly three hours from when you click the START SHIFT button.

How Continuous Shifting Works

When you click the START SHIFT button, the system begins recording a file with the name you've entered in the File Name field, e.g. 3 HOURS. Regardless of the Duration you've specified for the Delay (shift), the file records for just over one hour.

Before that recording ends, the system starts recording a second file with a start time that occurs before the first recording ends. This provides the mechanism for a seamless jump to the proper frame for playback after three one-hour recordings have completed.

The system automatically starting deleting the one-hour recorded blocks after twelve (12) hours to keep the hard drive from being saturated.

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