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1 Introduction

1.1 General
Luminous Textile is an easy to commission system that with low effort can be integrated with various control and building management systems. This allows for Luminous Textile to become integrated with (available) control systems, reactive to simple or advanced sensors or even interactive to cameras. This document describes the various alternatives and protocols Luminous Textile supports.

It is expected that the reader of this document is acquainted with system integration, lighting control systems and has knowledge about the installation and use of Luminous Textile and it the Luminous Textile Content Manager software.

Note that advanced skills and experience is required to create certain integrated applications. These installations are mostly performed by a partner or installer with programming skills, to build an application to the requirement of the customer. These tasks are commonly done by IT or Audio-Video companies. Signify has partners that can support locally in case more help is required.

1.2 Application examples
There is a wide variety of integration options possible to increase the value of the Luminous Textile. Below are some examples how system integration might be of use for reactive or interactive installations.

1.2.1 Change content on entry
Imagine walking into a room and the surfaces comes to life! Use a simple ceiling mount sensor to detect presence from a control system like Dynalite, it can easily be linked to Luminous Textile.

1.2.2 Integrate in a demonstration setup
Have a luminous textile panel in the showroom? Ensure all demonstration to customers goes perfectly synchronized, every time again. The luminous textile can easily be linked with Crestron / AMX / Pharos and other control systems which are typically used in this type of environment.

1.2.3 Different layers of content
Do you like your content, but would you like to use multiple movies at the same time? Or adjust colors in real time, set transparency, zoom and much, much more? Media servers like Pandoras box from Coolux, Green Hippo systems or MA lighting controls can natively control our Luminous Textile panels.
1.2.4 Play with cameras

Would you like to link a camera to the panels? Not to ‘just’ show video, but maybe for some face recognition? Or track where at the panel a person is watching? There are standard solutions available who offer this type of features, such as Pandora’s box media server from Coolux.

1.2.5 Play with depths and resolutions

The Luminous Textile is a great solution to provide ambient atmosphere. But what if you sometimes need to provide information too? With the use of media servers like mentioned above, you can seamlessly link high resolution projection with our low-resolution ambient lighting, all from a single controller.

1.2.6 Integration with functional lighting and building management systems

You have a Dynalite or other system installed to control your functional lighting? Why not ensure that the luminous textile gets ON and OFF at the right times? Ensure to save energy by an unnecessary switched ON Luminous Textile. Video Jockey with Luminous Textile.

For the perfect rhythmic mix of music and content and have real time control to alter to the wishes of the crowd, software programs such as Madrix or other media servers can be used to directly from the controller connect to the Luminous Textile. Great way to create a good party atmosphere.

1.2.7 Use Luminous Textile to a display parts of a computer screen

Got some great graphic program on the computer to display in real time on the panels? There are of the shelve systems available to link the video signal to Luminous Textiles. Composite, VGA or DVI? No problem just convert it to the Luminous Textile with the Color Kinetics Video System Manager, Artistic Licence DVNET or media converter.

1.2.8 Custom created interactivity, straight from your computer

For those who are comfortable with software programming, a streaming protocol that Luminous Textiles support can easily be integrated. Interactive solutions, ever changing content, content created by users worldwide, the only limit is your imagination...
Chapter 2

Connect a Luminous Textile

In this guide it is assumed that the Luminous Textile panels are correctly mounted and that both the network and the electrical power supply are connected. See the "Installation Instructions Luminous Textile".

Each Luminous Textile panel features one or two driver boxes. For the larger versions >4.32 m (>14.2 ft) a second driver box is mounted on the same panel. This allows for playback of different types of content, arranged as one or more playlists per album. Each driver box requires a mains power and network connection.

In a Luminous Textile installation that consists of multiple Luminous Textiles, only one driver box is allowed as master driver box. The master takes care that all content is played on all panels with the correct timing. This master controls all the slave Luminous Textile driver boxes in this network. In a single network only one master is possible. All other panels must be act as slave.

For a Luminous Textile installation with more than one driver box, only the web interface of the master must be accessed to control the complete Luminous Textile installation.

To give easy control to users, a user-friendly built-in web interface is integrated to access the Luminous Textile installation via a standard web browser. Alternatively, you can use the DiscoverMe app to do the basic control.
2.1 Physical connection

All Luminous Textiles are connected via the Ethernet port of the Luminous Textiles to the commissioning computer and optional third-party devices.

Even though the physical interface on the device (RJ45, 100Base-T, Auto-MDIX capability) might allow for direct interfacing, it is advised to always connect the Luminous Textiles to a router with DHCP functionality. Additionally, it is advised to have at least one spare port on the router available to connect a PC for commissioning, software programming and possible troubleshooting purposes.

Note that a Wi-Fi connection between a third-party device and a Luminous Textile network (via a Wi-Fi enabled router or access point) is possible but might affect the reliability of the connection.

![Diagram of Luminous Textile setup]

2.2 LAN / subnet settings

It is strongly advised to test your Luminous Textiles by connecting all panels, router, and computer on the same network, within the same subnet.

Once this is works correctly, IT departments can help you to route the required signal through another local network.

Luminous Textiles are shipped with DHCP enabled. On the webserver of the Luminous Textile (administrator settings page), the Luminous Textile can be given a fixed IP address/subnet mask / gateway if required. Ensure to save the settings.

Set the IP addresses of a Luminous Textile in the Settings, Control, Network settings section.

---

**Note**

- Many control systems require to work with a known IP address of the Luminous Textile. It is therefore advised to use a fixed IP address (or DHCP reservation) when an integrated solution is created.
- After the physical connection, from one DHCP server to another, is changed, a reboot of the Luminous Textile is required.
2.3 Configure the Luminous Textile panel network

Luminous Textile panels are connected to a Local Area Network. For upload of the created playlists in the Content Manager to one of the panels, the PC must have access to the network to which the Luminous Textile panels is connected. The router in the network assigns a network address to the panel (DHCP). Use this IP address to gain access to the control page of the panel.

Figure 2, 3 and 4 show two different configurations in which Luminous Textile panels are connected to a network via a separate router. In this situation, the IP address of each panel usually starts with 192.168.x.x or 10.x.x.x.

In the configuration shown in Figure 2, connect the PC within the same network as the Luminous Textile installation. The PC is assigned an address in the same address range of the Luminous Textile panels and is able to communicate with them.

![Diagram](image)

Figure 2: A private network. Luminous Textiles are not accessible from PCs outside this network.

In the configuration shown in Figure 3 the router is connected to the corporate network, to which the PC is also connected. The playlists can be uploaded via the corporate network. The PC needs not be connected directly to the private network router. Align with the local IT department to accomplish such installations.
Figure 3: A private Luminous Textile network is accessible from PCs connected to the corporate network.

In the situation shown in Figure 4, the Luminous Textiles are connected directly to a corporate network, to which the PC is also connected. The playlists can be uploaded via the corporate network. Align with the local IT department to accomplish such installations.

Figure 4: Corporate network
3 Content Manager

3.1 Platforms
Content Manager is designed to run on a Microsoft Windows PC. The graphics card must support DirectX. Ethernet support is required to connect to the Luminous Textile panels.

3.2 Main functions
The Content Manager software is an application that allows to set up a Luminous Textile panel configuration and create, edit and upload content to the Luminous Textile panels. It enables the user to create playlists for the Luminous Textile panel installation. It can use imported video files and convert them to the format compatible with the Luminous Textile panels. Once converted, the files and settings must be uploaded to the Luminous Textile installation.

It has four main functions:
1. Configure the panels and network via the **Surface Configurator**.
2. Create content playlists via the **Playlist Editor**.
3. Convert playlists to panel content via the **Content Converter**.
4. Upload all the files created above via the **Uploader**.
3.3 Terminology
Here you can find terminology used in the Content Manager software.

**Content**  
Video files or animations that can be imported in the Content Manager. The Content Manager only accepts Windows Media Video files (WMV v9 VC-1 codec). When media with audio information is imported into the Content Manager, the audio data is ignored.

**Panel**  
A Luminous Textile surface.

**Player**  
The driver box of a panel. Each Luminous Textile contains at least one player.

**Timeline**  
A timeline is a chronological sequence ruler on which the user can place animation files.

**Playlists**  
Multiple content files on a timeline that are played in a continuous loop, with fade in/out transitions. A playlist has a fixed length and can contain periods of time in which no content is displayed.

**Album**  
An album is a collection of playlists generated in Content Manager. The album name can be entered in the Content Converter window. The album can be selected at the control page.

**Fade**  
A video fade is when a shot gradually fades to (or from) a single color, usually black or white.

**Crossfade**  
A gradual fade from one shot to the next is known as a crossfade, mix or dissolve.

**LSC file**  
The surface configuration file.

**LCP file**  
LCP is the extension for a Luminous Textile panel content project file. An LCP project file contains the content, the timelines for various playlists, and the panel and wall configuration. An LCP file is created when a Content Manager project is saved.

**LCF file**  
The converted content files that can be played by a panel.

3.4 Recommendation for video files
The software only supports the Windows Media Video (WMV) format. During the encode process, use these settings for optimal playback:

- Format: WMV (Windows Media Video v9)
- Codec: VC-1
- Bit rate: average 1 Mbps (for standard quality)
- Key frame interval: 1 s
3.5 Getting started

3.5.1 Hardware requirements
Verify the computer meets the minimum system requirements, before the installation of the Content Manager software:

- Operating system: Microsoft Windows
- Microsoft .NET 4.0 or later
- Minimum 1 GB of available disk space, it is recommended to reserve more disk space for source videos and content.

The Content Manager must be installed at the main drive of the computer. The processor speed and the available RAM may affect the graphical performance in the preview mode.

3.5.2 Content Manager installation

- Contact your local Signify representative to receive the latest version of Content Manager software.
- Store and extract the zip file to a desired directory at the main drive of the computer.
- Double-click the Content Manager setup .exe file to start the installation.
- Follow the instructions in the installation wizard.

3.6 Menus and functions overview

To start the Content Manager:

- At the desktop, click on the Content Manager icon, or
- In the Windows start menu navigate to Luminous Textile, and select Content Manager 3.
- The Content Manager opens.

3.6.1 Content manager overview

Figure 5: Content Manager overview
Important
Make sure the dimensions of the surface and the Luminous Textile panels defined in the Surface Configurator match the actual installation.

Note
If the network configuration is not finalized in the Surface Configurator, the upload is not possible.

The Surface Configurator allows the user to configure the Luminous Textile panel layout and edit the network settings. The surface (marked by a dashed line) represents the wall on which the Luminous Textile panels are mounted.

The created content in the next chapters is not displayed correctly if the Surface Configurator settings do not match the Luminous Textile installation. Before the start of a project take care that all following questions are understood and can be answered.

1 Configure the surface.
   a What is the size of the surface?
   b How many panels are installed at the surface?
   c How are the panels be positioned at the surface?

2 Configure the network of the panel.
   a Are the panels connected to the same network?
   b Is every panel reachable in the panel network?
   c Which panel in the network is the master panel?
   d Does the Luminous Textile installation play content over the different panels?
   e Is a network configuration assigned to a panel?

3 Create the playlists.
   a How many playlists must be created?
   b When and for how long must a playlist be played?
   c Which video files must be used to create the playlists?
   d Are the video files available in WMV format?
   e Where must the fade in/out and crossfade be added?
3.6.2 Configure the panel

There are two ways to configure and assign the network configurations to a panel.

- Auto discover the panels
- Manually configure the panels

3.6.2.1 Auto discover panel network

If the computer where Content Manager is installed is connected to the same sub network of the panels, click in the network configuration area to discover all connected panels.

3.6.2.2 Manually configure panel network

If the computer has multiple network adapters active a popup asks to select the network adapter. Select the correct network adapter and click Discover.

![Select network adapter](image)

Figure 6: Select network adapter

3.6.2.3 Add a network configuration.

Click in the Surface Configurator to add a network configuration.

![Network configuration](image)

Figure 7: Network configuration

If required, enter a name for the new configuration. The default name is “NetworkConfig” followed by a number.

Type the actual IP address in the address field.

If all panels are connected to a LAN behind a router, they are all in the same IP address range.

Then:

- Assign a unique control port number.
- Assign a unique upload port number.
- Click x to delete a configuration.

Note

If panels can be reached via a wireless network, make sure that the PC is connected to the same wireless network.

Note

The control port (Port 80) and upload port (Port 21) can be configured in the router. To learn more about port forwarding or router setup, consult your local IT department.
3.6.2.4 Set the panel type

If an installation contains more than one panel, it is required to set a type for each panel in order to play content among all panels in a synchronized way.

Select a type in the type field. Either Master, Slave or Standalone can be chosen.

- **Master**: the panel with this network configuration is the master panel, which initiates the synchronization signal, command, etc. The icon represents the master panel.
- **Slave**: the panels with this network configuration are the slave panels, these panels receive the synchronization signal, commands, etc., from the master and execute them. The icon represents a slave panel.
- **Standalone**: these panels operate independently. The icon represents a standalone panel.

Remote: indicates that a remote control is connected to this panel. In general, the remote control is connected to the utility port of the master panel.

![Figure 8: Content Manager - Set panel type](image)

**Important**

Click **Set type** icon to execute the set action for each panel after setting-up the panel type.

For more information about the “Master/Slave” configuration, refer to “Master and Slave or Standalone configuration” in the Installation Guide.

![Figure 9: Surface Configuration Assign](image)

**Important**

Ensure there is only one master panel in the network. Multiple masters in a network lead to undesired behavior of slave panels.

**Note**

If only one panel is discovered, and there is only one panel in the surface, the panel is automatically assigned.

3.6.2.5 Assign a network configuration to a panel

Click at **Unassigned** on a panel in the work area and select one of the configurations from the list to assign a configuration to a panel. The icon represents an unassigned panel.
After the configuration of the panel network, assign each panel to one of these network configurations.

It is not possible to assign a network configuration to two panels. This is blocked by the Content Manager.

### 3.6.2.6 Panel status
When the assignment is finished, the connection status of a panel is available. There are four statuses:
- The green icon indicates that a player with related IP address is found in the network and assigned to a panel that is shown above.
- The red icon indicates that a player with related IP address is not found in the network, but it is assigned to a panel that is shown above.
- The orange icon indicates that a player with related IP address is found in the network, but it is not assigned to a panel that is shown above.
- The grey icon indicates that a player with related IP address is not found in the network and it is not assigned to a panel that is shown above.

A yellow warning icon appears in front of the status and “You can continue to operate as normal, but auto-size is not supported on this panel.” while hovering over it.

In case auto size correction is required, contact the local Signify organization for support.

![Figure 10: Missing the factory initialization information](image)

### 3.6.2.7 Identify a panel
After the assignment of each panel to a network configuration at the physical installation, verify if each panel is assigned with a correct network configuration such that the panels are viewed in the correct way both in the Content manager and at the installed wall.

1. Click Identify. The selected panel displays the pattern as below. The left top corner is red. If not, then the rotation of the panel is not correct.

![Figure 11: Identify image](image)
Click the identify icon again to go back to the panel normal play mode. Otherwise the panel remains in the *Identify* mode.

2. **Click Edit** to update all panel settings.

![Figure 12: Content Manager - Identify panel](image)

Since in the software, two panels are drawn to represent an “oversized” panel (panels > 4.32 m (14.2 ft)), use the *identify* function to make sure that the correct network configurations are assigned to these two panels.

Other panel indicators are:

3.6.2.8 **Additional features**

- The playback orientation can be rotated in the administrator section of the control page. Refer to the *Content Manager Quick Reference Guide* for information.
- After a rotation of the panel, re-discover the network and click to update the new settings.
- To access the control page for a panel, click . The Content Manager opens the control panel of the page in the default browser.

3.6.3 **Start a new project**

1. Run the Content Manager software and in the *File* menu, select **New project**.

3.6.3.1 **To open an existing project stored at the computer**

1. Select *File*, *Open project*.
2. Select and double-click the project to open.

3.6.3.2 **Default project**

A project can be saved, including the .lcp and .lsc files as the default project. These files can always be reused to create a new project or new playlists.

- Create the default project: Select *File*, *Save Project as Default Project*.
- Open a default project: Select *File*, *Open Default Project*.

---

**Note**

The project file contains the location of the imported video files and information on playlists. In case the imported video files are moved or deleted, the Content Manager cannot locate the video file.

**?**

This icon is used in the library as the thumbnail for a missing video file. Select *File*, *Import content* to import the video files again, or double click at the missing content icons.
3.7 Function navigation

The Content Manager contains four functions:

• Surface Configurator
• Playlist Editor
• Content Converter
• Uploader

Figure 14: Content Manager Tools

Switch between these functions with \( \lrcorner \) or \( \triangleright \), or directly with a click on one of the four numbers \( 1 \ 2 \ 3 \ 4 \).

3.7.1 Shortcuts

Most basic Windows shortcuts like Ctrl-N, Ctrl-C, F12, etcetera, are available to provide quick edit features. The functionalities of the functions change when used in a different function, for instance in the Surface Configurator Delete deletes a selected panel and in the playlist editor a selected playlist is deleted. Ctrl + G is an exception and is used to quickly select the Pack & Go function, to compress the project.

3.7.2 Surface Configurator

Figure 15: Surface Configurator

- Surface origin
- Surface editing area (add panels)
- Surface width and height
- Set the panel size and position
- Set the surface size
- Network configuration area
3.7.2.1 Configure a surface
When the application starts, the Surface Configurator function is selected.

1. To open an existing surface configuration stored at the computer select Import, Surface.
2. Select a configuration file (files with a .lsc extension).
3. Select Open.

When the surface has already been configured but not stored at the computer, it is possible to import the surface configuration directly from the installation select Import, Surface from Installation.

Notes
• The largest Luminous Textile is 6480 mm × 1200 mm (21.3 × 3.9 ft). However, the maximum panel size supported by one panel player is a panel with a length of 4320 mm (14.2 ft). This means if the panel is larger than this size, it requires two panel players to support it. Therefore, two panels must be drawn that positioned exactly next to each other without any gap in between to logically depict the oversized panel.
• The sizes of the different panels representing a panel larger than 4320 mm × 1200 mm (14.2 × 3.9 ft) must be provided by the application engineer.
• When connected to the network, the two panels must be detected with their correct size by the Content Manager software. Click to identify the correct panel in the project within the installation. In this way, the two panel sizes can be found and configured correctly in the software.

Figure 16: Import Surface

Then select and double-click the surface configuration file (*.lsc) to import. During the creation of a new surface configuration, the next options are available:
1. Modify the width and height in the surface info fields to define the surface size.
2. To add a panel, click add panel on the toolbar.
3. To delete a panel, click delete panel on the toolbar.
4. Multiple panel selection: press the <Ctrl> key and use the main mouse button to select multiple panels. For the selected multiple panels, it is possible to:
   a. Edit the width or height of the panels at the “information box” to change the size of all panels at the same time.
   b. Align the panel in X or Y axes. If a value is typed in the Y field, the selected panels are aligned in the y axis. If a value is typed in the X field, the selected panels are aligned in the x axis.
   c. Use the “→”, “←”, “↑”, and “↓” keys to move the selected panels.
3.7.3 Library window

![Library window](image)

To import your own video files to the Content Manager library:
1. Select Import, Import Content.
2. Select one or multiple video files, then click Open.

Select a video to preview it. The basic information of that video file like resolution in pixels, frame rate (fps), the name and the duration is displayed then. It is possible to look for an individual frame as well. Standard six demo videos are available in the library of the Content Manager.

Note
A network configuration is saved in the project file only if the configuration is assigned to a panel.
- View the info of a Luminous Textile: select a panel and hover the mouse over the panel; an info box appears, the “output1” indicates the output directory, where the converted content (*.lcf) is saved for this panel.

Note
Control port: for HTTP connection. The default is 80. Upload Port: for FTP connection. The default is 21.

Important
For multiple panels:
- It is not possible to assign multiple panels to the same configuration.
- The combination of IP address and control port or IP address and upload port must be unique.
- These configuration rules are checked by the software.
- There is only one master per network. The Content Manager does not check this. Make sure that only one master is in the panel network.
3.7.4 Playlist editor

A playlist is a collection of videos that can be played in a specific order and that can be alternated with fades. To create a playlist the videos can be dragged from the library to the timeline one by one.

The next options are available:
• Reposition a video: select a video, drag it to the new position on the timeline and then drop it.
• Copy and paste a video to another place at the timeline.
• Change the name of a playlist: double-click the name of a playlist that must be changed. Type the new name then press the Return key.
• Add/delete a playlist.
• Add a fade in option: only possible at the start of a video.
• Add a fade out option: only possible at the end of a video.
• Add a crossfade option between two videos. When the cross-fade option is set for one of the two videos the crossfade option is not available for the other video anymore.
• Map the video to the panels. It is possible to change the virtual frame size or move it around to decide which frame part are mapped to a panel. To align with the panels, double-click the virtual video frame. The tool auto aligns the frame with the panels. See Figure 18.
3.7.5 Timeline

A video clip can be dragged from the library to the timeline to create the playlists. A video file at the timeline can be repeated many times.

Note
For fade in/out and crossfade: If the duration of the content is less than 10 s, the maximum fade time is the half of the imported content time.

Tip
Seek a frame. Once a running playlist is paused, use the seek bar to seek a specific frame. The seek bar is located above the timeline.
3.7.6 View or preview a playlist

After a creation is finished, review the playlists and verify at the panels. Use view, preview, or zoom in/out on a playlist to test.

- Zoom in/out, view the playlist
- 1:1 set the view ratio to 1:1
- Fill: fill the view area
- Preview: Click the Preview icon to toggle the preview mode.

Note
This is only a simulation. It looks different on a panel with its ambient light.

Note
The preview content that is shown in the work area is not an exact representation of the content that is played at the Luminous Textile installation. It simulates the content as close as possible to resemble what the end results looks like at the panels. The simulation can be different. This depends on the choice of textile, environment ambient lighting conditions, etcetera.

Figure 22: Preview

Preview
Toggle between the normal view mode and preview mode with the button. This provides a simulation of the content when it is played at the installed panels.

Figure 23: Preview simulation
3.7.7 Content Converter

When the playlist is completed, the content must be rendered to the format used by the Luminous Textile. Select the Content Converter function. First set the album name. The set album name is also the name that is visible in the playback window of the user interface. Click **Render** to convert the created content and playlists. To rename the playlists, see section 3.7.4 Playlist editor. The default name is “Content”.

3.7.8 Uploader

Figure 24: Content Converter

Figure 25: Uploader
Once the surface configuration is created, content and playback schedule files must be uploaded to the panels. Select the Uploader function and choose which file to upload to the panels. Before the Upload button is clicked, make sure that:

- The computer is correctly connected to the network of the Luminous Textile installation.
- The status of panels is green in the Surface Configurator.

3.7.8.1 Pack & Go

To share or send the project to other users, select File, Pack & Go, or press Ctrl+G.

The Content Manager compresses all used content files, .lcp, .lsc, and .lcf files into one single file so that it can be sent to or shared with another user. In the pop-up window, it is possible set the options to not include all Unused inventory items into the Pack & Go files.

3.7.9 System information

To retrieve the version of Content Manager, select Help, About.
4 Web user interface

Each Luminous Textile has an integrated webserver which allows for control and configuration of the Luminous Textile with a standard web-browser on your PC or mobile system via a user-friendly web interface.

Use the Content Manager Software or the DiscoverMe app to find the IP addresses of the Luminous Textile. Simply discover the network and click the “open control page” icon from the Content Manager software or type the IP address of a Luminous Textile in a browser to open the page and browse to the required page to adjust settings. As the firmware update is done via the Content Manager Software too, ensure to use version 3.x version of the software.

Figure 28 Content Manager Software, surface configurator
4.1 Control

IP address of the master driver box
Switch to administrator: admin/admin
Control buttons: Previous playlist, Play, Stop, Next playlist
Support: Where to find support
Settings: Go to the settings menu, default administrator username/password: admin/admin
Calendar: shows the weekly schedules
Control button: select albums and playlists
Select Album
Select Playlist

Figure 29 Default setup with Luminous Textiles
4.2 Calendar page

Figure 30: Calendar

Double click any existing calendar entry to open and edit it

Double click a free area on the calendar to create a new Calendar Event

Figure 31: New Calendar Event

Different programmed calendar events
New calendar event, opens while clicking on a time frame
Start and End time of that switching window
Select the album you want to play
Select here the playlist of the album
4.3 Settings menu

4.3.1 Info

4.3.1.1 Panel status

Figure 32: Panel status
4.3.2 Installation

When logged in as a guest, the Account management and the Correct color pages are not visible.

4.3.2.1 General settings

Figure 34: General settings

Panel name
Change the role of the panel to: master, slave, or standalone
Change the rotation of the panel, according to the orientation of the panel
Save the settings
4.3.2.2 The date and time setting page

Figure 35: Date & Time

- Current date and time
- Synchronize with the connected computer
- Set the time zone
- Synchronize to a network time server
- Save the settings

4.3.2.3 Network settings page

Figure 36: Network settings

- Select DHCP or fixed IP address
- Set the fixed IP address
- Select player or streamer mode
- Select the Streaming mode protocol
- Save the settings
4.3.2.4 Panel defaults

The mode in which the panel starts after a restart of the panel
The name of the album and playlist which are default after a restart of the (master) panel

Figure 37: Panel defaults

4.3.2.5 Account management

Set a password to restrict access to the control page only
Set a password to protect from content download via the Content Manager
Update the Admin change page password

Figure 38: Account management
4.3.2.6 System integration

**4.3.2.6.1 System integration Philips Dynalite**

Select one of the three players.

Select Yes, to connect a Philips Dynalite device.

Save or Cancel the new settings.

The list of commands and linked playlist shortcuts. Create in Content, Playlist shortcuts.

Figure 39: System integration

Figure 40: System integration, Philips Dynalite
4.3.2.6.2 System integration Color Kinetics

Select Yes, to connect a Color Kinetics device
Save or Cancel the new settings
The list of commands and linked playlist shortcuts. Create in Content, Playlist shortcuts

Figure 41: System integration, Color Kinetics

4.3.2.6.3 System integration custom system

Select Yes, to connect a custom system
Enter the UDP port details to send commands to this system.
Save or Cancel the new settings
The list of commands and linked playlist shortcuts. Create in Content, Playlist shortcuts

Figure 42: System integration, Custom system
4.3.3 Content

4.3.3.1 Album collection

Figure 43: Album collection

4.3.3.2 Playlist shortcuts

Figure 44: Playlist shortcuts
4.3.4 Service

4.3.4.1 Panel information

Create and save the support package
General panel information
View the log file of all events
Click to see the advanced service settings pages

Figure 45: Panel information

4.3.4.2 System logs

Overview of all system logs
Download all entries
Search for a specific log

Figure 46: System logs
4.4.3.3 Advanced service settings

4.3.4.3.1 Operations view

Figure 47: Advanced service settings, Operation

4.3.4.3.2 Status view

Figure 48: Advanced service settings, Status
4.3.4.3.3 System view

Figure 49: Advanced service settings, System

4.3.4.3.4 Panel view

Figure 50: Advanced service settings, Panel
4.3.4.3.5 Driverbox view

Figure 51: Advanced service settings, Driverbox

4.3.4.4 Service settings

Figure 52: Service settings

- Lookup tables
- Create and load lookup tables
- Select to enter panel dimensions or retrieve panel dimensions
- Select Metric or Imperial measurements
- Create and save the new dimensions to the panel
- Select the FPGA firmware file
- Upload the FPGA firmware file
- Reset to factory settings
4.3.4.5 SD card settings

- View the SD card status
- The total capacity and free space on the SD card
- Check to reset the status and readout again
- Repair or format a faulty SD card

Figure 53: SD card

4.3.4.6 Color settings

- Correct the overall color
- Correct the color per LED module

Figure 54: Correct Color

Correct the overall color settings or RGB Light Engine module settings here, this for instance if an RGB Light Engine has been replaced with a new one.
4.3.4.7 Firmware update

Note
An update takes approximately three to four minutes. A pop-up is displayed with a progress bar.

Important
Do not unplug a panel from the mains during the update. This can very rarely lead to a system failure. If this happens, contact the local Signify support organization.

Figure 55: Firmware
5 Trigger the on-board playback system

5.1 Default control
See the Luminous Textile User Guide for more details on the use of the DiscoverMe app or the web interface.

- Use the Content Manager software to discover the Luminous Textiles on the network.
- Use a web browser to browse to the IP address of the master. Use a web browser on a PC, tablet or smartphone.
- The free DiscoverMe LTP - app on a smart device on the same network.
- The HTTP API
- UDP commands

5.2 HTTP API
The built-in web interface uses HTTP requests to control the Luminous Textiles. These requests can be used by any device to interact with the Luminous Textiles.

The supported messages are equal to the common commands available via

- Home, select Playlist Home, select Album
- Control buttons, Previous playlist, Play, Stop, Next playlist
- Settings, Control, Advanced Controls (operation mode only)
- Settings, Control, General Settings (brightness only)
- Settings, Control buttons, Previous playlist, Play, Stop, Pause, Identify, Next playlist

The syntax to recall those actions can be found in the next section:

Note
- Many control systems require to work with a known IP address of the Luminous Textile. It is therefore advised to use a fixed IP address (or DHCP reservation) when an integrated solution is created.
- After the physical connection, from one DHCP server to another, is changed, a reboot of the Luminous Textile is required.
- The Album name is entered in the Content Converter section of the Content Manager software.
5.2.1 Login

Methods:
POST /api/auth/login

Description:
Login to the Luminous Textile.

Body arguments:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
<th>Mandatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>username</td>
<td>String</td>
<td>The name of the user that wants to login</td>
<td>Yes</td>
</tr>
<tr>
<td>Password</td>
<td>String</td>
<td>The password of the user</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>String</td>
<td>The session token that is used to authenticate future requests</td>
</tr>
<tr>
<td>account.name</td>
<td>String</td>
<td>Full name of the user associated with the account</td>
</tr>
<tr>
<td>account.can</td>
<td>Object</td>
<td>Account details</td>
</tr>
<tr>
<td>account.can.controllPlayer</td>
<td>Boolean</td>
<td>True if account is capable of controlling content playback</td>
</tr>
<tr>
<td>account.can.manageContent</td>
<td>Boolean</td>
<td>True if account is allowed to upload/download content</td>
</tr>
<tr>
<td>account.can.changeSettings</td>
<td>Boolean</td>
<td>True if account is allowed to change settings</td>
</tr>
<tr>
<td>account.can.manageAccounts</td>
<td>Boolean</td>
<td>True if account is allowed to change/add accounts</td>
</tr>
</tbody>
</table>
5.2.2 Playback control methods

5.2.2.1 Play
PUT /api/control/play
Description:
Start playback.
Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Response:
<null> on success, “error” string on failure.

5.2.2.2 Stop
PUT /api/control/stop
Description:
Stop playback.
Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Response:
<null> on success, “error” string on failure.

5.2.2.3 Toggle Play-Stop
PUT /api/control/togglePlayStop
Description:
Start playback if stopped and stop playback if playing.
Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Response:
<null> on success, “error” string on failure.

5.2.2.4 Pause
PUT /api/control/pause
Description:
Pause or resume playback.
Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Response:
<null> on success, “error” string on failure.
5.2.2.5 Next
PUT /api/control/next
Description:
Play next video of current album.
Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Response:
<null> on success, “error” string on failure.

5.2.2.6 Previous
PUT /api/control/previous
Description:
Play previous video in the current album.
Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Response:
<null> on success, “error” string on failure.

5.2.2.7 Playback mode
PUT /api/control/player
Description:
Set playback mode.
Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Body arguments:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
<th>Mandatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>sequence</td>
<td>String</td>
<td>“Shuffle” – play album videos in random order. “Repeat” – play videos in sequential order, repeating the album after the last video. “Toggle” – toggle playback mode</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response:
<null> on success, “error” string on failure.
5.2.2.8 Play an album with a specified playlist

PUT /api/control/album/<album_id>/<video_id>

**Description:**
Play an album starting at a specified video.

**Path arguments:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;album_id&gt;</td>
<td>The identifier associated with the album. Refer to GET /api/info/albums for a list of album ids</td>
</tr>
<tr>
<td>&lt;video_nr&gt;</td>
<td>The index number of the video (starting at 0)</td>
</tr>
</tbody>
</table>

**Cookies:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

**Response:**

<null> on success, “error” string on failure.

5.2.2.9 Start a preset

PUT /api/control/preset

**Description:**
Start a preset

**Cookies:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

**Body arguments:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>String</td>
<td>The preset name that must be started. Refer to GET api/config/presets</td>
</tr>
</tbody>
</table>

**Response:**

<null> on success, “error” string on failure.

5.2.2.10 Set player mode

PUT /api/control/mode

**Description:**
Set the player mode.

**Cookies:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

**Body arguments:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>mode</td>
<td>String</td>
<td>Luminous Textile playout mode: “Player”, Play albums “Streaming”, Play content streamed over network connection (ART-NET, kiNET)</td>
</tr>
</tbody>
</table>

**Response:**

<null> on success, “error” string on failure.
5.2.2.11 Display test image
PUT /api/control/identify
Description:
Display a test image on the Luminous Textile.
Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Response:
<null> on success, “error” string on failure.

5.2.3 Brightness control

5.2.3.1 Increase brightness
PUT /api/control/increaseBrightness
Description:
Increase the brightness of the Luminous Textile with 10% increments.
Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Response:
<null> on success, “error” string on failure.

5.2.3.2 Decrease brightness
PUT /api/control/decreaseBrightness
Description:
Decrease the brightness of the Luminous Textile with 10% increments.
Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Response:
<null> on success, “error” string on failure.
5.2.3.3 Set brightness

PUT /api/control/brightness

Description:
Set the brightness of the Luminous Textile as a fraction of 1 (where 1 = 100% brightness and 0 = 0% brightness).

Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Body arguments:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
<th>Mandatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brightness</td>
<td>Number</td>
<td>Brightness value in the range [0,1]</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response:

<null> on success, "error" string on failure.
5.2.4 Info

5.2.4.1 General info

Methods:
GET /api/info/general
Description:
Retrieve general information about the Luminous Textile.

Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Response:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>album</td>
<td>Object</td>
<td>The album that is currently playing</td>
</tr>
<tr>
<td>album.name</td>
<td>String</td>
<td>Name of the album</td>
</tr>
<tr>
<td>album.id</td>
<td>String</td>
<td>Identification string associated with the album</td>
</tr>
<tr>
<td>album.playlist</td>
<td>Object</td>
<td>The video that is currently playing</td>
</tr>
<tr>
<td>album.playlist.id</td>
<td>Number</td>
<td>Index of the video within the album</td>
</tr>
<tr>
<td>album.playlist.name</td>
<td>String</td>
<td>Name of the video</td>
</tr>
<tr>
<td>album.playlist.thumbnail</td>
<td>String</td>
<td>Video thumbnail image file</td>
</tr>
<tr>
<td>errors</td>
<td>Array of Strings</td>
<td>List of error messages that have occurred since the last request</td>
</tr>
<tr>
<td>mode</td>
<td>String</td>
<td>Player mode (Refer to PUT /api/control/mode)</td>
</tr>
<tr>
<td>name</td>
<td>String</td>
<td>Luminous Textile name</td>
</tr>
<tr>
<td>player</td>
<td>Object</td>
<td>Playout order</td>
</tr>
<tr>
<td>player.sequence</td>
<td>String</td>
<td>Playout order (Refer to PUT /api/control/player)</td>
</tr>
<tr>
<td>rebootRequired</td>
<td>Boolean</td>
<td>Indicates that the Luminous Textile needs to reboot</td>
</tr>
<tr>
<td>revision</td>
<td>String</td>
<td>Software revision</td>
</tr>
<tr>
<td>role</td>
<td>String</td>
<td>Luminous Textile control mode. Standalone/Master/Slave</td>
</tr>
<tr>
<td>state</td>
<td>String</td>
<td>Player status. Play/Stop/Pause</td>
</tr>
<tr>
<td>status</td>
<td>String</td>
<td>Luminous Textile status</td>
</tr>
<tr>
<td>streaming</td>
<td>Object</td>
<td></td>
</tr>
<tr>
<td>streaming.enabled</td>
<td>Boolean</td>
<td>Indicates whether ART-NET/kNET streams are allowed</td>
</tr>
<tr>
<td>dateTime</td>
<td>String</td>
<td>The current time of the Luminous Textile</td>
</tr>
</tbody>
</table>
5.2.4.2 Display info

GET /api/info/display
Description:
Retrieve general information about the Luminous Textile.

Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Response:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>brightness</td>
<td>Number</td>
<td>The Luminous Textile brightness in the range [1,0]</td>
</tr>
<tr>
<td>crossfadeTime</td>
<td>Number</td>
<td>The duration of the fade transition between videos (in seconds)</td>
</tr>
</tbody>
</table>

5.2.4.3 Album info

GET /api/info/albums
Description:
Retrieve general information about the Luminous Textile.

Cookies:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessToken</td>
<td>The access token value that is returned by a successful login</td>
</tr>
</tbody>
</table>

Response:

An array of album objects where each object contains the next fields:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>String</td>
<td>The identification string that is associated with this album</td>
</tr>
<tr>
<td>Name</td>
<td>String</td>
<td>The name of the album</td>
</tr>
</tbody>
</table>
5.3 UDP commands

Many control systems can only output simple UDP commands, instead of the complicated interaction required for a REST interface.

The Luminous Textile must be configured to accept UDP commands:
- Navigate to **Settings, System Integration, Custom**
- Set **Enable a custom system** to **Yes**
- Enter an UDP port number (above 1023).
- Press the **Save** button to save the settings

The messages that a Luminous Textile accepts are displayed on the Custom System Integration page. If playlist shortcuts are configured (**Settings, Playlist Shortcuts**) then they are also listed in the table. See section 4.3.2.6.3 System integration custom system.

5.4 Philips Dynalite Dynet commands

The Dynet protocol is an advanced protocol that can control many products for office and retail lighting, like user interfaces, switches, panels, motion and heat sensors, touch screens. Recall presets to an area, to control a Luminous Textile, where the presets correspond to playlists.

A Philips Dynalite ethernet gateway (PDEG) is required to control the Luminous Textile.

Note that integration takes place with the Dynalite Dynet commands (ethernet based), not with the RS-485 based Dynalite protocol.

Dynalite equipment, including the PDEG, must be configured before use. It does not integrate with a Luminous Textile ‘out of the box’. A Luminous Textile listens to a subset that contains some logical messages for a specified area.

As both systems can be freely configured, please note the area and port number in the project documentation for future use.

Gateway configuration: UDP mode
- Port number: 0 to 65535
- Area number: 0 to 255

On the Luminous Textile, these parameters can be specified at **Applications, Lighting integration app, Dynalite settings**.
A Dynet command is standard sequence of 8 bytes that is send to the system.

A standard sequence looks like this:

<table>
<thead>
<tr>
<th>Description</th>
<th>Command description</th>
<th>Dynet command</th>
<th>Data 1a</th>
<th>Opcode</th>
<th>Data 2 a</th>
<th>Preset bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop the playlist in current album</td>
<td>Stop</td>
<td>Off</td>
<td>xx</td>
<td>04</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Decrease intensity with 10%</td>
<td>Dim Down</td>
<td>Decrement</td>
<td>xx</td>
<td>05</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Increase intensity with 10%</td>
<td>Dim Up</td>
<td>Increment</td>
<td>xx</td>
<td>06</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Set area to dim level</td>
<td>Intensity</td>
<td>Area to level</td>
<td>level</td>
<td>79</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Start to play playlist 0 in the current album</td>
<td>Playlist 0</td>
<td>Preset 1</td>
<td>xx</td>
<td>00</td>
<td>xx</td>
<td>00</td>
</tr>
<tr>
<td>Start to play playlist 1 in the current album</td>
<td>Playlist 1</td>
<td>Preset 2</td>
<td>xx</td>
<td>01</td>
<td>xx</td>
<td>00</td>
</tr>
<tr>
<td>Start to play playlist 7 in the current album</td>
<td>Playlist 7</td>
<td>Preset 8</td>
<td>xx</td>
<td>0D</td>
<td>xx</td>
<td>00</td>
</tr>
<tr>
<td>Start to play playlist 8 in the current album</td>
<td>Playlist 8</td>
<td>Preset 9</td>
<td>xx</td>
<td>00</td>
<td>xx</td>
<td>01</td>
</tr>
<tr>
<td>Start to play playlist 9 in the current album</td>
<td>Playlist 9</td>
<td>Preset 10</td>
<td>xx</td>
<td>01</td>
<td>xx</td>
<td>01</td>
</tr>
<tr>
<td>Start to play playlist 15 in the current album</td>
<td>Playlist 15</td>
<td>Preset 16</td>
<td>xx</td>
<td>0D</td>
<td>xx</td>
<td>01</td>
</tr>
<tr>
<td>Start to play playlist 16 in the current album</td>
<td>Playlist 16</td>
<td>Preset 17</td>
<td>xx</td>
<td>00</td>
<td>xx</td>
<td>02</td>
</tr>
</tbody>
</table>

- Byte 1 is the Start code of the command for this system and is always a typical “1C” message. This indicates that logical addressing is used.
- Byte 2 is the area in both the Luminous Textile and Dynalite system, note only one area can be used.
- Byte 3 (Data 1) and byte 5 (Data 2) are irrelevant for most commands in this system and only used for setting an area to a specific dim level.
- Byte 4 is together with the preset bank byte 6, the opcode with the actual command.
- Byte 7 is a bit switch which can be used to filter out selected channels. It is not used for Luminous Textile.
- Byte 8 is a checksum.

Note:

a. xx defines an ignored byte for this command.

b. If no such playlist exists, a Luminous Textile ignores the command. Note that playlist 0 is the first playlist in the file (player mode only).
Luminous Textile can be used in a streaming mode. In this case the Luminous Textile reacts to “DMX over Ethernet” messages for pixel precise control. The protocols supported are Art-Net and KiNET, those are further explained in next sections.

A Luminous Textile can be activated to listen to incoming messages if the operation mode is changed to Streaming.

This can be done via de settings page: Settings, Control, Advanced Controls.

It can also be set via an external trigger, see section 5.2 HTTP API.

Luminous Textile supports to be used with the on-board playback system or streaming input at different moments in time. The switch between the two operating modes can take up to ten seconds. During these ten seconds the visual output of the Luminous Textiles might look disturbed.

Change of operation mode on the master Luminous Textile automatically changes the operation mode of all slave Luminous Textiles in the system. If the start-up operation mode must be streaming, save it as default. Settings, Control, Save as default settings.

6.1 Art-Net and KiNET

6.1.1 Introduction

The Art-Net protocol is developed by Artistic Licence and published in the public domain. Visit http://www.artisticlicence.com for more details. As the protocol is available in the public domain, a wide range of companies produces Art-Net compatible controllers.

The KiNET protocol is developed by Color Kinetics (now Color Kinetics). It is a proprietary protocol. Contact https://www.colorkinetics.com/global/contact-us for information on licensing. Luminous Textile supports the KiNET v2, the ‘port out’ version.

Luminous Textile supports Art-Net 3 standard (at maximum 50 fps). Luminous Textile is compatible with controllers that supply Art-Net version 1, 2, 3 or 4.
6.1.2 Limitations

- The name and IP address of a Luminous Textile can only be set on the Luminous Textile itself or via the content manager software.
- An attempt to change the name via a third-party device or software might cause to lose the connection with the Luminous Textile. A reboot of the Luminous Textile and the third-party device or software might be required to get the Luminous Textile discovered again.
- The maximum supported frame rate is 50 fps.
- On the by Luminous Textile used universes and subnets no Art-Net data intended for other devices is allowed.
- Luminous Textiles are discovered both in streaming and player mode, regardless of KiNET or Art-Net mode.
- Latency is less than two frames.

6.1.3 DMX table

Luminous Textile is controlled per pixel. In the DMX software nodes are identical to pixels. For every node, three DMX channels are used, one intensity value for each RGB color:
- First channel, Red
- Second channel, Green
- Third channel, Blue

The brightness level on a Luminous Textile itself can be used for master intensity. This means that even for low light outputs, the full resolution can be used.

Use either Settings, Control, General Settings, Brightness level or an external trigger via HTTP API or UDP command, see section 5.2 HTTP API.

6.1.3.1 Mapping order

The order of the nodes follows the standard reading order. From left to right, top to bottom, node 1, node 2, etc. This continues for a complete number of lines to fill a universe (maximum 170 nodes).

After this the first node (on the left of the Luminous Textile) is again the first node in the next universe. This continues until the complete Luminous Textile is filled. The last universe might be identical to the previous universe or contain a smaller number of lines.

If a Luminous Textile is used in landscape, check that the rotation of that Luminous Textile on the settings page is properly set. Navigate to Settings, Control, General Settings, Panel orientation. Change of the orientation of the Luminous Textile results often in different layout of universes as the number of nodes per line is different if a Luminous Textile is placed in portrait compared to landscape mode or vice versa.

This ensures the height (h) and width (w) of this Luminous Textile are consistent with the physical installation. The height and width of a Luminous Textiles can be found by dividing the physical dimension of the Luminous Textiles (in mm) by 60, or by looking it up in Settings, LTP info, status, panel width and Settings, LTP info, status, panel height.
Visually the Luminous Textile is patched like in Figure 2:

(w) = width in nodes (or Luminous Textile width in mm / 60)
(h) = height in nodes (or Luminous Textile height in mm / 60)
(a) = number of rows within a “full” port (depending on (w))
(b) = number of rows in the Luminous Textiles last port (depending on (h))

<table>
<thead>
<tr>
<th>Universe 1</th>
<th>Universe 2</th>
<th>Universe 3</th>
<th>Universe 4</th>
<th>Universe 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>(w)</td>
<td>(w)</td>
<td>(w)</td>
<td>(w)</td>
<td>(w)</td>
</tr>
<tr>
<td>(h)</td>
<td>(h)</td>
<td>(h)</td>
<td>(h)</td>
<td>(h)</td>
</tr>
<tr>
<td>(a)</td>
<td>(a)</td>
<td>(a)</td>
<td>(a)</td>
<td>(a)</td>
</tr>
<tr>
<td>(b)</td>
<td>(b)</td>
<td>(b)</td>
<td>(b)</td>
<td>(b)</td>
</tr>
</tbody>
</table>

The number of nodes shown is illustrative.

(a) number of rows within a “full” port depends on the width
(b) number of rows in the panels last port depends on the height

The number of nodes shown is illustrative.

Figure 56 Visual representation of the patching.

a) Depends on the width of the Luminous textile and can be found in the table Universes per Luminous Textile.
b) Is calculated by taking (h) and subtracting (a) until this ends up at a number equal or between 0 and (a)-1.
6.1.3.2 Mapping examples

Example 1
Luminous Textile dimension 2280 mm height by 1200 mm width (portrait installation)

Define width and height.

Option 1, read from settings
Navigate to the settings, LTP info page and find the information under system.

Settings, LTP info, status, panel_width or Settings, LTP info, status, panel_height

Option 2, calculate
1. \( w = \text{width in nodes (or width in mm / 60)} = \frac{1200}{60} = 20 \text{ nodes} \)
2. \( h = \text{height in nodes (or height in mm / 60)} = \frac{2280}{60} = 38 \text{ nodes} \)
3. Lookup in the table Luminous Textile width versus lines per port.
   \( w = 20 \) gives \( a = 8 \).
4. Calculate \( b \)
   Subtract \( a \) from \( h \) until this ends up at a number equal or between 0 and \( a - 1 \).
   \( b = h - a - a - \ldots \) (until \( 0 \leq b \leq (a-1) \))
   \( b = 38 - 8 - 8 - 8 = 6 \)

This Luminous Textile has 4 ports of each \( 8 \times 20 \) nodes, and the 5th port of \( 6 \times 20 \) nodes.
Example 2
Luminous Textile dimension 1020 mm height by 1800 mm width (landscape installation)

Ensure the Luminous Textile orientation is set to 90°.

Settings, Control, General Settings, Panel orientation.

Define width and height.

Option 1, read from settings
Navigate to the settings, LTP info page and find the information under system.

Settings, LTP info, status, panel_width or Settings, LTP info, status, panel_height

Option 2, calculate
1. \( w = \text{width in nodes (or width in mm / 60)} \) \( w = 1800/60 = 30 \) nodes
   \( h = \text{height in nodes (or height in mm / 60)} \) \( h = 1020/60 = 17 \) nodes
2. Lookup \( a \) in the table Luminous Textile width versus lines per port.
   for example, \( w = 30 \) gives \( a = 5 \).
3. Calculate \( b \)
   Subtract \( a \) from \( h \) until this ends up at a number equal or between 0 and \( a - 1 \).
   \( b = h - a - a - ... \) (until \( 0 \leq b \leq (a-1) \))
   \( b = 17 - 5 - 5 - 5 = 2 \)

This Luminous Textile has 3 ports of each \( 5 \times 30 \) nodes, and the 4th port of \( 2 \times 30 \) nodes.
Typically, a Luminous Textile requires multiple universes. See the table for the number of universes required per Luminous Textile.

In the given examples the width and height can go up to 72 nodes since a panel can be used in as well portrait as landscape mode. The maximum number of nodes per driver box is 72, since a panel with a length more than 4.32 m (14.2 ft) uses two driverboxes which are addressed separately.

<table>
<thead>
<tr>
<th>W a</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16, 17</th>
<th>18</th>
<th>19 to 21</th>
<th>22 to 24</th>
<th>25 to 28</th>
<th>29 to 34</th>
<th>35 to 42</th>
<th>43 to 56</th>
<th>57 to 72</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>14</td>
<td>12</td>
<td>12</td>
<td>11</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>H</td>
<td>12</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<td>3</td>
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<tr>
<td></td>
<td>13</td>
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<td>2</td>
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<td>6</td>
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<td></td>
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<tr>
<td></td>
<td>17, 18</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<td>3</td>
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<td>34 to 36</td>
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<td>46 to 48</td>
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<tr>
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</table>

Typically, a Luminous Textile requires multiple universes. See the table for the number of universes required per Luminous Textile.
Note
- The first universe is universe 00. All universes are automatically incremented to the total number of universes the Luminous Textile uses.
- All universes in one (binding) IP address are always in the same net / subnet.
- If required, the last universes in a subnet might be left unused. The address range jumps to the next subnet with universe 00, to continue for this binding IP address.
- All nodes in each universe start from DMX address 001.

6.1.3.3 Mode selection, Address selection and IP address binding
To activate streaming set the Luminous Textile to streaming mode.

Settings, Control, Advanced Controls
It can also be set via an external trigger, see section 5.2 HTTP API.

To activate Art-Net as the streaming protocol set the Luminous Textile to streaming mode and after that select Art-Net.

Applications, Lighting integration app, Streaming settings
After the change of the streaming protocol save the settings.

The Art-Net specification has a limit of maximum four universes per IP address. To give a device the ability to receive more than four universes bind IP addresses are introduced to the standard. As Luminous Textile can use up to ten universes, it requires two bind IP addresses (additional to the IP address of the Luminous Textile).

Fill in valid values for the bind IP addresses, ensure the IP addresses that are available on the network. Since these binding IP addresses just receive data, no additional settings like subnet settings are required.

Applications, Lighting integration app, Art-Net Settings
After the change of the Art-Net Settings save the settings.

As the Luminous Textile uses Art-Net 3 there are three fields to set, Net, Subnet and Universe.

6.1.3.4 Test and troubleshoot
If the image appears upside down, the orientation is not correct. Change the Luminous Textile orientation 180°.

If the image appears scrambled, check the orientation as well since this can appear with a 90° or 270° rotation.

Settings, Control, General Settings, Panel orientation
Testing is optional but advised as this is an easy way to check the installation.

6.1.3.5 Artistic Licence
Artistic Licence offers a free software tool to “DMX Workshop”. This software tool allows checking if Luminous Textiles are correctly setup. Additionally, it provides some tests to output data to specific channels to verify the setup.

Download and install the software
https://artisticlicence.com/product/dmx-workshop/

Check the tutorials section at this web page to get started.
Open the software and select the correct network interface. A window similar to Figure 55 is displayed.

Click the button node list and click refresh. Unfold where necessary. All connected Luminous Textiles are discovered by the software (both Luminous Textile IP and populated binding IPs) and the universe it is set to. See Figure 56.

If required, the “Dynamic” function under the Transmit DMX can be used to control the installation. See Figure 15.

For more information about DMX workshop visit www.artisticlicence.com
## Default settings

<table>
<thead>
<tr>
<th>Description</th>
<th>Setting</th>
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</thead>
<tbody>
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<td>Player mode</td>
<td>Standalone</td>
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<tr>
<td>Orientation</td>
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<tr>
<td>Network</td>
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<td>Dynalite settings, port number</td>
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<tr>
<td>Dynalite settings, area</td>
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<tr>
<td>Color Kinetics Keypad settings, port number</td>
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<tr>
<td>Color Kinetics remote Keypad settings, port number</td>
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<tr>
<td><strong>DHCP OFF</strong></td>
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<td>Static IP address</td>
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</tr>
<tr>
<td>Subnet mask</td>
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</tr>
<tr>
<td>Gateway</td>
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<td><strong>Operation</strong></td>
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<tr>
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</tr>
<tr>
<td>• Net</td>
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<tr>
<td>• Subnet</td>
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<td>Binding IP address 2</td>
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