LIGHTING CONTROL CONSOLE SPECIFICATION

1. **General**
   1. The lighting control console shall be a self-contained touch-based computer system designed specifically for stage and studio lighting control. It shall be the Starter or Pro Model Cognito2 Console as manufactured by Pathway Connectivity
   2. The console shall be capable of controlling [512][1024][1536][2048] attributes assigned to as many as 600 individual fixtures (“lights”). Data will be transmitted using ANSI E1.11-2008 (DMX512A) via two built-in 5-Pin XLR data ports. Optionally, control data may simultaneously be transmitted over Ethernet using ANSI E1.31 (Streaming DMX over ACN), the Pathport Protocol, ArtNet or KiNet.
   3. Twenty fader and bump button pairs shall be provided for direct control of lights’ intensities.
   4. Intensity, Color, Position and Shape attribute control shall be accessible using graphical tools on the touchscreen or four encoder wheels that surround the touchscreen.
   5. Lighting looks shall be stored as memories and/or cues and the console shall store 1000 or more such memories with an imperceptible impact on run-time performance. Lighting shows shall be stored in non-volatile memory without the need for the operator to invoke a save operation. Show files shall be archived using a USB thumb drive.
   6. Multiple parameter lighting fixtures shall be controlled using natural language control that utilizes real-world values in sensible units such as degrees, hertz, revolutions-per-minute and enumerated operations such as “Reset” and “Low Fan Speed” versus data-level values such as a number between 0 and 255.
   7. Attribute assignments used on one fixture type applied to another fixture type shall product predictable results. Lighting fixtures of one type shall be easily swappable to another without the need to run utilities or macros to translate data.
   8. The console shall consist of a single enclosure with a fully integrated processor.
   9. The console shall not have any internal user serviceable components.
   10. The console shall be CE marked.
2. **Electrical and Mechanical**
   1. The console shall be provided with a UL listed, CE marked, external 24V DC power supply rated for 100-140VAC, 50-60Hz, 1.5A input.
   2. The console shall be a IEEE 802.3at-2009 Power-over-Ethernet device.
   3. The console shall consist of a high quality injection molded plastic case fitted to a formed steel base pan with an integral I/O connector panel.
   4. The console shall be provided with a custom-printed fabric dust cover.
   5. The console shall be convection cooled.
   6. The console shall be rack-mountable with an optional 7U x 19” rack-mount kit.
   7. The formed steel base pan shall incorporate two strain relief attachment assemblies adjacent to the connector panel for cable management.
   8. The connector panel shall be recessed under the top rear console surface to allow the console to require no more than 12” of counter space depth.
   9. The connector panel shall incorporate at Kensington security lock hole.
   10. The IO connector panel shall incorporate the following:
       1. 12-24V power input with associated LED indicator
       2. Earth ground termination post
       3. RJ45 10BASE T / 100BASE TX / 1000BASE T Ethernet port with associated LED indicator
       4. Two XLR5 Female DMX512 OUT port with associated LED indicator
       5. ONE XLR5 Male DMX512 IN port with associated LED indicator (Firmware enabled on Pro model)
       6. Three DIN-5 port for MIDI show control Out, Thru and In (Firmware enabled on Pro model)
       7. High Definition display port for external video
       8. One DB9 connector for serial power and three contact closure (Firmware enabled on Pro model)
       9. Two USB Type A port
   11. The console shall have a rear-illuminated pushbutton that shall serve to power the console On. Pressing the pushbutton when the console is powered On shall provide the operator with selectable options on the touchscreen to; Power Off; proceed to Setup; or Cancel and return to console operation. Pressing the power button for 5 seconds will preform a cold shutdown.
   12. The console shall have a rear-illuminated “PIN” function pushbutton. The operations of the PIN pushbutton are discussed in Part 4 of this specification: “Slider Operation”.
   13. The console shall have an integral color 7” diagonal capacitive touch screen with 800 X 480 resolution or better.
   14. The console shall have twenty 60mm faders with associated RGB rear-illuminated bump buttons.
   15. The console shall have four color coded, rear-illuminated, detented rotary encoder wheels with associated rear-illuminated soft keys labeled A, B, C and D.
   16. The encoder wheels shall have detents that operate in tandem with the fixture definitions such that each tick of the wheel relates to one unit (e.g., Percentage, Degree, RPM, Hertz, etc.) of control.
   17. The console shall have four color coded, rear-illuminated pushbuttons for choosing the control tasks of Intensity, Color, Position and Shape.
   18. The console shall have four color coded, rear-illuminated pushbuttons for choosing Release, Help, Edit and Record functions.
   19. The console shall incorporate two playbacks, each consisting of rear-illuminated PLAY and PAUSE/BACK pushbuttons and an Intensity level fader.
   20. The console shall have a Grand Master fader with associated rear-illuminated Black Out (“DBO”) pushbutton.
   21. The console shall have a Memory Master fader with associated rear-illuminated Black Out pushbutton.
   22. The console shall have two rear-illuminated SHIFT pushbuttons.
   23. The console shall be approximately 19” (483mm) wide, 11.5” (292mm) deep and 3” (76mm) high and shall weigh approximately 8 lbs.
3. **Cognito Operating System**
   1. The console’s main monitor shall display the four major tasks used to control the fixtures and devices in the lighting system. The selection of one task shall clearly and concisely show the available options and tools that can be used in that task by populating a task-related toolbar.
   2. The Select task shall provide graphical, numeric and textual feedback on the lights’ number, type, current intensity level, current color and other attributes where appropriate. The touching of each light on the screen shall select the light for manipulation in the Control task.
      1. Both graphic and numerical Intensity information for a light shall be displayed in a defined set of colors to provide the operator with specific feedback as to what action caused the light to be at a certain intensity.
         1. Red shall indicate a fader set the intensity.
         2. Yellow shall indicate a Memory set the intensity.
         3. Cyan shall indicate a cue set the intensity and the level increased from its state before the cue action.
         4. Green shall indicate a cue set the intensity and the level decreased from its state before the cue action.
         5. Magenta shall indicate a cue set the intensity and the level remained unchanged from its state before the cue action.
      2. The Select Standard sub task displays a list of console-defined grouping of lights (i.e., All, None, Even, Odd, Dimmer, RGB) that will be selected or deselected when the touchscreen button for that specific group is touched.
      3. The Select Groups sub task displays a list of operator-defined groups of lights (i.e., SR Cyc, CTR Cyc, SL Cyc) that will be selected or deselected when the touchscreen button for that specific group is touched.
      4. The Select Recent sub task displays a list of dynamically built list of recent operator light selections that will be selected or deselected when the touchscreen button for that specific group is touched.
      5. The Settings sub task inside Select allows the operator to change the properties (light type and DMX address) of the selected lights.
         1. < and > buttons on the touchscreen shall allow the operator to bank to the left or to the right in the lights display
            1. When a light is selected, holding the left or right Shift key will cause the < and > buttons to select the previous or next light.
            2. When multiple lights are selected, holding the left or right Shift key will cause the < and > buttons to perform a previous or next light function within the range of the selected lights.
      6. In the Select task, + and – buttons on the touchscreen shall act to display a smaller or larger number of lights on the touchscreen. Lights shall be display in groups of 10, 20, 40, 60 or 100 lights.
      7. The Select task shall have an “Airplane” button that will present the operator with dynamically sized pages of lights that will facilitate quick and efficient movement throughout the global range of lights in the show file. For example, if the current show file uses 100 light and the lights are displayed in groups of 10, the “airplane” button will act to display 10 pages of lights displayed as 1 to 10, 11 to 20, and so on through 91 to 100.
      8. The Select task shall have an active Selected/Captured button to display the number of lights selected.
         1. If a light (or lights) is (are) captured by a fader in Intensity mode or by any of the attribute Control functions, the Selected/Captured button shall turn red and display the legend “CAPT” to indicate that one or more lights are captured.
         2. When lights are selected and/or captured, pressing the Selected/Captured button will first cause selected lights to be released and a subsequent press will all other captured lights to be released.
         3. If one light is selected, the button will show a number sign and the light number (i.e., “#2”). If more than one light is selected, the button will display the total number of lights selected without the number sign (i.e., “5”).
      9. The Select task shall have an active Filter button to create and display a list of specially sorted groups of lights in the show file.
         1. “No Filter” shall act to cause all lights in the show file to be displayed on the touchscreen (based on 2.2.6 above).
         2. “In Use” shall act to cause all lights in the show file that are in use (intensity level above 0%) to be exclusively displayed on the touchscreen.
         3. “Left Playback” shall act to cause all lights being driven to an intensity or attribute state by the left playback to be exclusively displayed on the touchscreen.
         4. “Memory” shall act to cause all lights being driven to an intensity or attribute state by a Memory to be exclusively displayed on the touchscreen.
         5. “Selected” shall act to cause all selected lights to be exclusively displayed on the touchscreen.
         6. “Not In Use” shall act to cause all lights not in use (intensity level at 0%) to be exclusively displayed on the touchscreen.
         7. “Right Playback” shall act to cause all lights being driven to an intensity or attribute state by the right playback to be exclusively displayed on the touchscreen.
      10. The Select task shall have an (i) Information button that shall display information about the lights such as DMX start addresses.
          1. If no lights are selected when (i) is pressed, the lights’ DMX starting address is displayed in place of their intensity value.
          2. If one or more lights are selected, the display changes to a grid showing detailed attribute information on the light including
             1. Light Number
             2. Light Manufacturer
             3. Light Model
             4. Light starting DMX address(es)
             5. A list of attributes of the light (i.e., Intensity, Pan, Tilt, Color etc.) showing:

Attribute name

Source (Playlist, Memory, Captured)

Source Item (Cue label where attribute was set, Memory label)

Library reference label if applicable

Current value using color coding from 2.2.1 above

Current effect (if applicable)

Number of Cues attribute recorded in

Number of Memories attribute recorded in

Number of Libraries attribute recorded in

Locks (Tech Lock, Desk Lock)

* + - 1. The (i) screen also shows:
         1. Show information including number of playlists, cues, memory pages and memories
         2. Locks including Tech Locks, Desk Locks and Output Tech Locks
         3. Media information including how many versions of the current show are stored on the console, number of other show files and how much free disk space.
  1. The Control task shall be divided in to four families of attribute control that can be accessed through buttons on the touch screen or through pushbuttons at the left of the touchscreen.
     1. Control Intensity populates a toolbar with a number of methods for setting lights’ intensity.
        1. Selecting Wheels in the Intensity task shall display a Wheel Bank tool bar. See additional Wheels tools in section 2.4 below.
           1. Where applicable, the Control tool on the Wheel Bank provides natural control for functions such as Lamp On, Lamp Off Reset, Recalibrate Light, Fan Speed, etc.
           2. The Timing tool on the Wheel Bank provides natural language control for functions such as Position timing, Color timing, Lens timing and Gobo timing.
        2. Selecting Advanced in the Intensity task shall display tools on the touchscreen for functions such as Desk Lock Intensity, Desk Lock Light, release Tech Lock Intensity, Default Intensity, Release Intensity, Knockout Intensity, Knockout Light.
        3. Selecting Libraries in the Intensity task shall display shortcut Intensity options for Out (0%), 10%, 20%, 50%, 80%, 90% and Full (100%).
           1. When the Libraries tool is chosen, the A encoder button will select 20%, the B encoder button will select Out (0%), the C encoder button will select Full (100%), and the D encoder button will select 80%.
           2. Any intensities selected with the Library tools can be adjusted by the Raise/Lower buttons displayed in the Libraries tool.
        4. Selecting IRGB in the Intensity task shall display tools on the touchscreen for adjusting Intensity, Red, Green and Blue.
           1. For each of the Intensity, Red Green and Blue attributes, the touchscreen shall graphically display the wheel that will manipulate that particular attribute.
           2. The graphic representation of the attribute can be operated as a fader on the touchscreen.
           3. Each attribute shall be provided with a Raise/Lower button that shall also manipulate the particular attribute.
        5. When a selected light with CTO or RGBA or RGBW or RGBAW properties is set to operate under Console CCT during programming (see Section 2.3.2.1.2) the Cognito software shall use the additional attributes in the light to produce the desired Correlated Color Temperature in response to manipulation of the color attributes.
        6. When a selected light has color mixing attributes and the color is mixed to a particular hue, continually asserting Red or Green or Blue with the wheels or the Raise button shall cause the console to subtract the colors not being asserted. For example, 100% red, 50% green 0% blue will produce an amber color in the light. Continually asserting Blue will automatically produce blue without the operator needing to takes steps to adjust Red and Green to 0%.
        7. While in the Intensity task, selecting “Effects” in the toolbar followed by “New Effect” will display a library of intensity effects such as Marquee, Wave, Strobe, Twinkle, Flash On, Flash off. When a specific effect is selected, the Wheel Bank will display the effect that has been selected and the console wheels will be loaded with parameters of the effect that can be adjusted by the operator such as Rate, Size and Repeat in order to customize the effect. The order in which you select the lights will be preserved and used with effects.
        8. When an effect is running, a Stop Effect command button will appear on the touchscreen.
     2. Control Color populates a toolbar with a number of methods for adjusting lights’ color.
        1. Selecting Wheels in the Color task shall display a Wheel Bank tool bar. See additional Wheels tools in section 2.4 below.
           1. The Color Mixing tool on the Wheel bank allows the operator to select the Color Space to be used for adjusting and fading the lights’ color and displaying the attribute parameters the wheels will control according to the selected Color Space.

|  |  |  |  |
| --- | --- | --- | --- |
| Color Space  On Wheel A | Wheel B | Wheel C | Wheel D |
| CMY | Cyan | Magenta | Yellow |
| RGB | Red | Green | Blue |
| HSV | Hue | Saturation | Value |

* + - * 1. When LED fixtures are selected, the Wheel bank will include a Correlated Color Temperature tool where the operator may use the A wheel to select Color Modes such as Console CCT, Fixture CCT or Direct.
      1. Selecting Advanced in the Color task shall display tools on the touchscreen for functions such Desk Lock Color, release Tech Lock Color, Default Color, Release Color and Knockout Color.
      2. Selecting Libraries in the Color task shall make the user-defined colors and the individual colors from the Apollo, Gam, Lee and Rosco swatch books available for selection.
      3. Selecting Picker in the Color task shall cause the touchscreen to display a color gamut for creating color in the selected lights.
         1. Picker shall include a tool to select Single Color, Rainbow Mirror Left, Rainbow Mirror Right, Rainbow Mirror Right and Spread that can be applied across a range of selected lights.
         2. Picker shall include a tool to adjust the width of a Rainbow or Spread.
      4. While in the Color task, selecting the Effects tool followed by “New Effect” will display a library of color effects such as Rainbow and Step. When a specific effect is selected, the Wheel Bank will display the effect that has been selected and the wheels will be loaded with parameters of the effect that can be adjusted by the operator such as Rate, Size, Offset and Repeat in order to customize the effect. The order in which you select the lights will be preserved and used with effects.
      5. When an effect is running, a Stop Effect command button will appear on the touchscreen.
    1. Control Position populates a toolbar with a number of methods for adjusting position attributes in selected automated lighting fixtures.
       1. Selecting Wheels in the Position task shall display a Wheel Bank tool bar. The tool bar will be populated with controls appropriate to the pan and tilt attributes in the selected light(s). See additional Wheels tools in section 2.4 below.
          1. Wheels shall be used to select Pan/Tilt Mode (Polar or Linear). When cues or memories are recorded with the Linear mode, moving head lights will transition from the initial position to the new position in a straight line.
       2. Selecting Advanced in the Position task shall display tools on the touchscreen for functions such as Desk Lock Position, Invert Pan, Invert Tilt, Release Tech Lock Position, Default Position, Knockout Position.
       3. Selecting Libraries in the Position task shall make the user-defined position palettes (pan and tilt attributes) available for selection.
       4. Selecting Joystick in the Position task shall cause the touchscreen to display a joystick position control for relative movement of the selected light(s).
       5. Selecting Bullseye in the Position task shall cause the touchscreen to display a track pad position control for absolute movement of the selected light(s).
       6. While in the Position task, selecting the Effects tool followed by “New Effect” will display a library of effects such as Ballyhoo, CanCan, PanCan and Circle. When a specific effect is selected, the Wheel Bank will display the effect that has been selected and the wheels will be loaded with parameters of the effect that can be adjusted by the operator such as Rate, Size, Offset and Repeat in order to customize the effect. When an effect is running, a Stop Effect command button will appear on the touchscreen.
       7. When an effect is running, a Stop Effect command button will appear on the touchscreen.
    2. Control Shape populates a toolbar with a number of methods for adjusting gobo and lens attributes in selected automated lighting fixtures.
       1. Selecting Wheels in the Shape task shall display a Wheel Bank tool bar. The tool bar will be populated with controls appropriate to the controllable gobo and lens attributes in the selected light(s). See additional Wheels tools in section 2.4 below.
       2. Selecting Advanced in the Shape task shall display tools on the touchscreen for functions such Desk Lock Shape, release Tech Lock Shape, Default Shape, Release Shape and Knockout   
          Shape.
       3. Selecting Libraries in the Shape task shall make the user-defined shape palettes (gobo and lens attributes) available for selection.
       4. While in the Shape task, selecting the Effects tool followed by “New Effect” will display a library of effects such as Iris, Zoom and Edge. When a specific effect is selected, the Wheel Bank will display the effect that has been selected and the wheels will be loaded with parameters of the effect that can be adjusted by the operator such as Rate, Size, Offset and Repeat in order to customize the effect.
       5. When an effect is running, a Stop Effect command button will appear on the touchscreen.
       6. When an effect is running, a Stop Effect command button will appear on the touchscreen.
  1. In each of Intensity, Color, Position and Shape Wheel tools the display also includes these items
     + 1. A Light mimic showing the selected light’s current attributes as described in 2.2 above.
       2. Four ‘fanning’ toggles including Left, Right, Center and Ends.
          1. Turning on any of the fanning tools allows the wheels to adjust the associated attribute in non-lock-step movements. i.e., with Fan Center on 3 lights, moving the wheel clockwise adjusts light number 1’s attributes in a negative offset, light number 2 would not move and light number 3 would get a positive offset.

The order in which you select the lights will be preserved and used with Fanning.

* + - * 1. Highlight takes the current light’s intensity to Full and temporarily removes and shape or color attributes.
        2. Lowlight takes all lights being played back from cues to 20 except the selected light whose intensity is take to full temporarily.
        3. When Position Wheels are shown, a Flip button will adjust the Pan and Tilt attributes such that the light uses new values but remains in the same location on stage.
  1. The Record task shall record the current state of the lights into one of four categories. When recording, users shall be able to set various attributes of the item, such as label and timing options.
     1. Record Memory records the current console output into a memory assigned to a slider for later recall of an entire lighting look. Memories shall reside on a Memory page. There shall be no practical limit on the number of Memory pages and a Memory page shall be capable of storing up to 400 memories.
     2. Record Cue records the current console output into a cue for later recall of an entire lighting look. Cues shall reside on a Playlist for later recall in a sequenced operation. Cues shall fade and delay parameters of each of the four attribute families (Intensity (up and down times), Color, Position and Shape). There shall be no practical limit on the number of Playlist and a Playlist shall be capable of storing up to at least 1000 cues.
     3. Record Library will record captured attributes automatically filtered by attribute family to Libraries (sometimes referred to as palettes) for each of Color, Position and Shape.
        1. Captured shape attributes will be recorded into Position Libraries so that Zoom, Edge and Shutter information can be added to Position libraries such as “Chair”.
     4. Record Group will record selected lights into a group for easy recall during programming sessions.
     5. An advanced SETUP option will allow only recording captured attributes vs. the default of recording the stage look.
  2. The Play task shall configure the touchscreen for specific playback scenarios. Regardless of the screen layout, the two PLAY buttons on the two Playbacks shall remain active, as will the 20 Memory sliders.
     1. Play Memory will optimize the touchscreen to show what is currently assigned to the 20 sliders. Touching one of the memory labels then pressing edit will allow changing memory properties such as its label, bump mode and bump timing. Edit will also allow the moving and deleting of memories. Arrow buttons allow banking to additional sets of 20 sliders. Selection of the active Memory Page is done via the Play Memory Task toolbar.
     2. Play L[eft] Playback and Play R[ight] Playback shall optimize the screen to show Playlists and shall be used to assign a Playlist to one or both of the Playbacks. The touchscreen screen shall show the properties and progress of advancing cues and clearly show which cue the console is currently in. Touching one of the cues in a Playlist then pressing the Edit button will enable the operator to change cue properties such as its label, timing, follow and wait properties. Edit will also allow the moving and deleting of cues.
     3. Individual Cues can be highlighted and edited by pressing the BLIND button. The contents of the cue will be displayed in the SELECT task (whereas the LIVE levels will be displayed as thumbnails in each light’s mimic). Lights can be selected and altered with Intensity, Color, Position and Shape Control tools and when the desired changes are made, pressing REC will updated the selected Cue.
     4. Play toolbars include:
        1. Transport (including Go, Pause, Back, Release, Restart, Step forward and back)
        2. Options (including toggles for Is Chase, Edit Lock, Reset on Release, AutoRun and Allow MSC)
        3. Timecode (including Source (External MTC, Internal 1,2,3) Learn TC, Clock Start, Pause, Reset and Set)
        4. Rate (including Rate in BPM, Tap Sync, rate multiplier)
        5. Chase (including Hard, Soft, xFade %, Build, Solo and direction)
     5. The Play Mixed task configures the touchscreen with a condensed version consisting of the Left playback, the Right playback and Memories. Editing of Memories and Cues is not supported in this task. You can copy Memories and Cues between the active Memory page and Playlists in the Play Mixed task.
     6. The Play Schedule task allows you to add Time Events to occur at specific times of the day and on specific days of the week. Time Events can occur relative to astronomical events based on your current geographic location as configured in SETUP.
  3. An external monitor may optionally be connected to the HDMI port on the rear of the console.
     1. The monitor shall support HD1080 resolution. HD720 resolution shall not be supported.
     2. The first 100 lights in the show file will be displayed, similar to 3.2 above.
     3. The cues from the Playlists loaded on the Left and Right Playback will be displayed on the external monitor
     4. The first 20 Memories recorded in the active Memory Page will be displayed on the external monitor.

1. **Slider Operation** 
   1. In the Select task, the 20 faders can be used to set lights’ intensities. There shall be filtering, paging and zoom buttons to allow control and display of more or less lights.
   2. In the Select task, the 20 buttons below the sliders act temporarily take the light’s intensity to full (bump) when pressed. Holding down Shift while pressing the bump button shall cause the light to be at full until Bump is pressed again.
   3. In the Play task, the 20 sliders will control all the attributes of lights that have been recorded to the corresponding memory. Intensity attributes shall respond at a highest takes precedence level, whereas all other attributes shall use latest take precedence.
   4. Any attribute(s) of any number of lights can be controlled by successively activating more and more Memories. When deactivating (fading down) these memories, the lights will automatically take on the value on the remaining active memories. There will be no need for the operator to re-assert prior memories. This activation/deactivation sequence can happen in any order and predictable results will always prevail.
   5. In the Select or Play task, when the bank of sliders being displayed changes, indicator lights will warn the operator that the hardware level does not match the light level. The operator may adjust the slider to ‘match’ the correct level before the lights’ level changes on the stage in order to prevent lighting levels from ‘slamming’ levels on slider movement.
   6. In either the Play or Select tasks, the operator can press the Pin button to hold the stage output allowing sliders, buttons, touchscreen and encoders to change the attributes of the lights without change to the lighting state on stage. Pressing the Pin button shall cause a smooth cross-fade from the live stage state to a new live stage state using the attribute levels set Blind and thus accomplish two-scene operation. Pressing Shift+Pin enables the operator to set the desired fade time for the crossfade.
   7. The console shall have a SETUP option where the 20 sliders will always control all the attributes of lights that have been recorded to the corresponding memory in all four tasks (Select, Control, Record and Play).
   8. A Memory can be can be highlighted on the touch screen and edited by pressing the BLIND button. The contents of the Memory will be displayed in the SELECT task (whereas the LIVE levels will be displayed as thumbnails in each light’s mimic). Lights can be selected and altered with Intensity, Color, Position and Shape Control tools and when the desired changes are made, pressing REC will updated the selected Memory.
2. **General Operation**
   1. At any time, the operator may press a record button to save a lighting setting. When activated, the user is presented with options such as where to record, what to label it and various other properties such as timing information that may be altered. This operation shall use sensible defaults so that a user can execute this command with as few as two button presses (for example, REC+BUMP to record a memory to a slider or REC+GO to record a cue in a playlist).
   2. When the operator adjusts a light’s intensity or any of its other attributes, a Release button shall allow those changes to be discarded and cause the light(s) to return to its previous control state (whether that be from a memory on a slider, from a cue in a playlist or its default values).
   3. A lock function shall be available to selectively prevent a light changing its intensity, color, position or shape on the stage. Locking a light will not prevent the operator from continuing to program the show including the ability to set new values for that light.
   4. When the libraries are applied to lights and those lights are subsequently recorded into memories or cues, any updates to the libraries will be reflected in the playback of the memories or cues without further action required on behalf of the operator.
   5. A show file may contain as many as 20 playlists. Any and all of those may be assigned to either of the two Playbacks. Playlists may also be controlled without being assigned to a Playback via on screen buttons, external show control via the API or iOS remotes.
   6. Memories and cues may be organized and reordered using ‘drag-and-drop’ operations. Memories can be copied from Slider to Slider, from Slider to Playback, from Playback to Slider and from Playback to Playback.
3. **Console Setup Mode**
   1. The Setup mode shall be outside of the general operational screens the operator interacts with during Select, Control, Record and Play.
   2. In Setup mode the operator shall be able to manage various aspects of the console and the show file including but not limited to
      1. System settings
         1. Time
         2. Touchscreen calibration
         3. Sliders always play memories ON | OFF
         4. Number of Lights in show.
         5. Console Name
         6. Time Zone
         7. Astronomical location
         8. Record Only Changes YES | NO
      2. Network Setup
         1. Advanced
         2. Automatic
         3. Pathport
         4. Static
      3. DMX512
         1. Select DMX512 refresh rate option
            1. Slow
            2. Medium
            3. Fast
            4. Maximum
         2. DMX512 port configuration option
            1. 1-512
            2. 513-1024
            3. Off
      4. Network DMX512
         1. Pathport universe offset or Off
         2. Art-Net universe offset or Off
         3. sACN (E1.31) universe offset or Off
         4. KiNet universe offset or Off
      5. neato
         1. Define neato access password
         2. Define neato device access
            1. Allow all devices
            2. No new devices allowed
            3. No devices allowed
         3. Wallstation Mode
            1. Mode

Logo only

Playlist

Memory buttons

* + - * 1. Unlock Password
      1. Install console channel & feature upgrade authorizations
         1. Starter to Pro 512
         2. Starter to Pro1024
         3. Add 512 (2048 max)
         4. Add 1024 (2048 max)
    1. Software
       1. Display software release date
       2. Display console serial number
       3. Display console Authorization
       4. Display fixture definition release date
       5. Update system
    2. Show file
       1. Save Show to USB
       2. Open Show from USB
       3. Create a new show
       4. Open a different show file
       5. Open a previous version of this show
       6. Save show as
       7. Delete a show file

1. **Help System and Documentation**
   1. The console shall be shipped with printed a Quick Start Guide.
   2. The “?” button will overlay text and graphics on the active touchscreen pointing out various controls on the screen. The presence of these hints shall not impede the ability of the user to operate the console. The hints shown shall always be relevant to the screen in use.
   3. Additional on-screen help shall be available where operators shall be able to navigate documentation with hyperlinks and full color graphics.
2. **iOS Application for remote connectivity**
   1. A free iOS application shall be available on the iTunes store. This application, when installed on an iPod Touch, an iPhone, an iPad Mini or an iPAD, shall provide connectivity to the console when connected to a WiFi network.
   2. The “Work” tab in the app shall allow remote level control of any fixture in the system for the purposes of a technician focusing lights. The technician shall be able to operate and lock the light level independently of the console operator. Work shall enable a technician to patch lights and perform a “channel” check.
   3. The “Run” tab in the app shall enable remote recall of recorded memories in an easy to understand interface. Each memory assigned to the remote will show its current level, its name and optionally a photograph as chosen by the user.
   4. The “Play” tab in the iPad app shall function as a wing for the console that can be sliders, wheels or playback controls.
   5. The “Spot” tab in the iPad app shall enable remote selection and control of lights. Spot shall serve to expand the surface of the console with tools not found on the console, i.e. a 101-key array to enable discrete intensity level selection.
3. **Off-Line versions of the console software**
   1. A off-line editor for the software capable of operating on either Windows or Mac OSX systems shall be available on the manufacturer’s web site for download free of charge.
   2. This off-line software will allow the creation, loading and editing of show files compatible with the console.
4. **Included Furnishings**
   1. 24V power supply
   2. Dust cover
5. **Acceptable Product**
   1. Provide a Cognito lighting control console as scheduled.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Features** | **Starter** | **Pro512** | **Pro1024** | **Pro1536** | **Pro2048** |
| Part Number | xxx | xxx | xxx | xxx | xxx |
| DMX outputs | 512 | 512 | 1024 | 1536 | 2048 |
| Pathport protocol | Yes | Yes | Yes | Yes | Yes |
| E1.31 sACN | No | Yes | Yes | Yes | Yes |
| Art-Net | No | Yes | Yes | Yes | Yes |
| KiNet | No | Yes | Yes | Yes | Yes |
| External Display | Yes | Yes | Yes | Yes | Yes |
| DMX512 OUT ports | 1 | 2\* | 2 | 2 | 2 |
| DMX512 IN port | Not enabled | Yes | Yes | Yes | Yes |
| MIDI show control | Not enabled | Yes | Yes | Yes | Yes |
| MIDI Time Code | Not enabled | Yes | Yes | Yes | Yes |
| Internal Time Code Clocks | Not enabled | 3 | 3 | 3 | 3 |
| RS232 port | Not enabled | Yes | Yes | Yes | Yes |
| Contact closure | Not enabled | 3 | 3 | 3 | 3 |
| Scheduled Time Events | No | Yes | Yes | Yes | Yes |
| Regulated power supply | Included | Included | Included | Included | Included |
| Dust cover | Included | Included | Included | Included | Included |
| Rack-mount kit | Optional | Optional | Optional | Optional | Optional |