Technical Bulletin

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Integrating Alternative LCDs with the Prysm Systems Application Appliance

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Affected Products/Components: Prysm Systems Application Appliance X30, PN: 055-00048-00 and X40, PN: 055-00050-00.

Introduction

This bulletin provides recommendations for integrating non-Prysm Systems (alternative) LCD displays with the Prysm Application Suite (PAS) through an Application Appliance kit. It covers:

1. Integration recommendations
2. Roles and responsibilities
3. X30 Application Appliance kit overview
4. Case 1–single LCD configuration
5. Case 2–multiple-LCDs configuration (video wall array)
6. Whitelisting LCDs
7. Touch mosaic configuration

Integration Recommendations

The PAS can be enabled on a variety of LCD displays – single LCD and LCD video wall arrays. For the best results, Prysm Systems recommends the following:

- Touch Sensor:
  - PQLabs G5 for LCD panels, PQLabs G4 for video wall arrays
  - USB 2.0 interface

- Display:
  - Commercial / Industrial grade Panel
  - 4K or UHD resolution for single LCDs
  - DisplayPort 1.4 interface

Roles and Responsibilities

Prysm Systems products are part of an overall solution to be ordered, installed, and supported by an integration partner. That partner must verify that the solution works and supports it over time with the help of Prysm Systems Inc. and the other suppliers.

X30 Application Appliance Kit (X30 Kit) Overview

The X30 kit (PN: 055-00031-00) can enable the PAS on non-Prysm Systems displays that require up to four HDMI-dedicated inputs. The kit includes:

- One NVIDIA Quadro P1000 graphics card with four video outputs (four mini-DisplayPorts, v1.4) at up to 3840 x 2160 @ 60Hz per output
- Two dual-input HDMI ports (1920 x 1080 @ 60Hz).
- One Intel Xeon processor
- 256 GB SSD
- One chassis: W13.3 in. x H 3.6 in. x D 15.1 in. (337 mm x 100 mm x 384 mm); 15.9 lbs (7.2 kg)
- Wireless mouse and keyboard, dongle
- One each of: 15 ft DisplayPort-to-display cable, 15 ft USB-to-touch panel cable, 20 ft HDMI cable for Live Source input

It does not include:

- Cart, mounting hardware, display, USB extension cable (for the wireless mouse/keyboard dongle), Interactive Input Controller (IIC)
- Prysm Application Suite subscription (User License fees required)

(See Price List for "Application Appliance, Base System X30", PN: 055-00048-00.)

If more GPUs or HDMI ports are needed to support an array, consider using the X40 Application Appliance Kit (PN: 055-00050-00), additional HDMI input cards (PNs: 781-00241-00 or 781-00242-00), and GPU cards (PN: 781-00169-00).

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Case 1–Single LCD Displays

Customers may want to add the PAS to LCDs made by a supplier they prefer, or because they have existing LCD displays.

Touch sensors are a key part of the PAS experience. For use with the PAS, Prysm Systems has had the most experience with, and recommends a PQLabs touch sensor. Touch sensors not made by PQLabs may also work with the PAS. Either way, the responsibility of support is with the integrator.
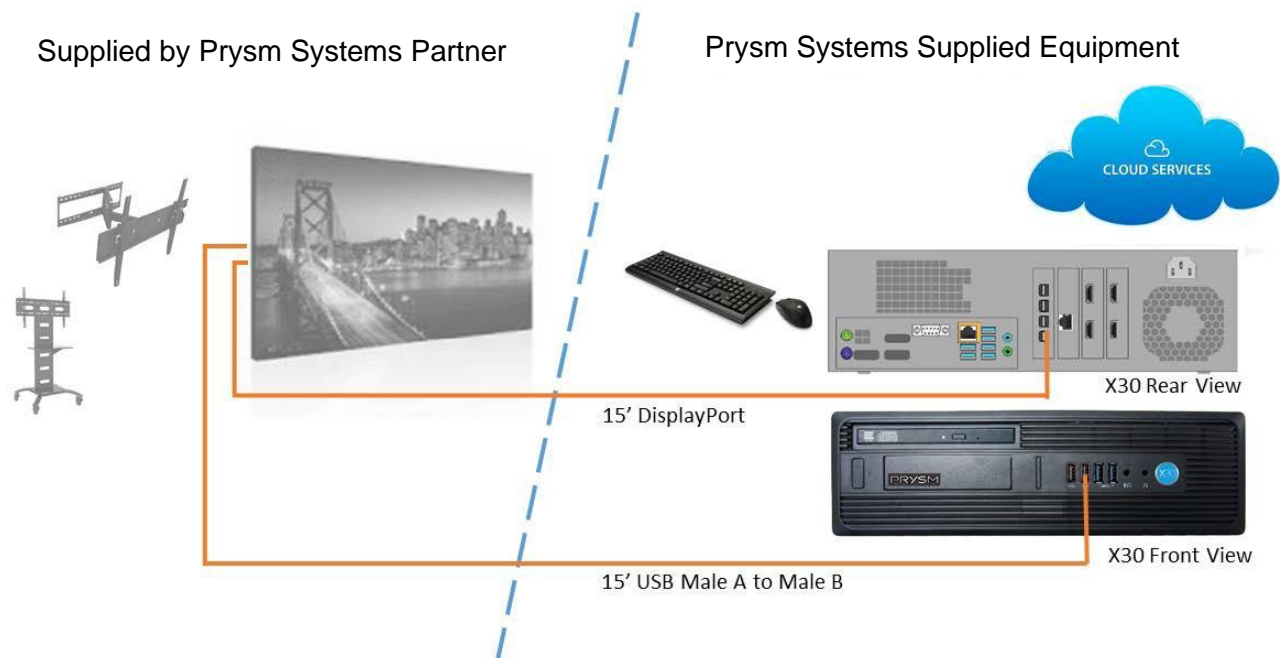
Key questions:

1. Is the display touch-enabled with a PQLabs touch sensor?
   a. If YES, then the PAS is expected work. Validation is highly recommended with a Prysm Systems Application Appliance (X30, X40).
   b. If NO, and the touch sensor is not manufactured by PQLabs, the display *may* work if existing HID drivers can be used. Validation is highly recommended with a Prysm Systems Application Appliance (X30, X40).
2. Is the display 4K / UHD?
   This is important for user satisfaction, especially collaboration systems, where users work close to the display.
3. Is the display commercial / industrial grade?
   This is important for system reliability and ruggedness in mounting, physical contact by users, and continuous 24/7 operation.
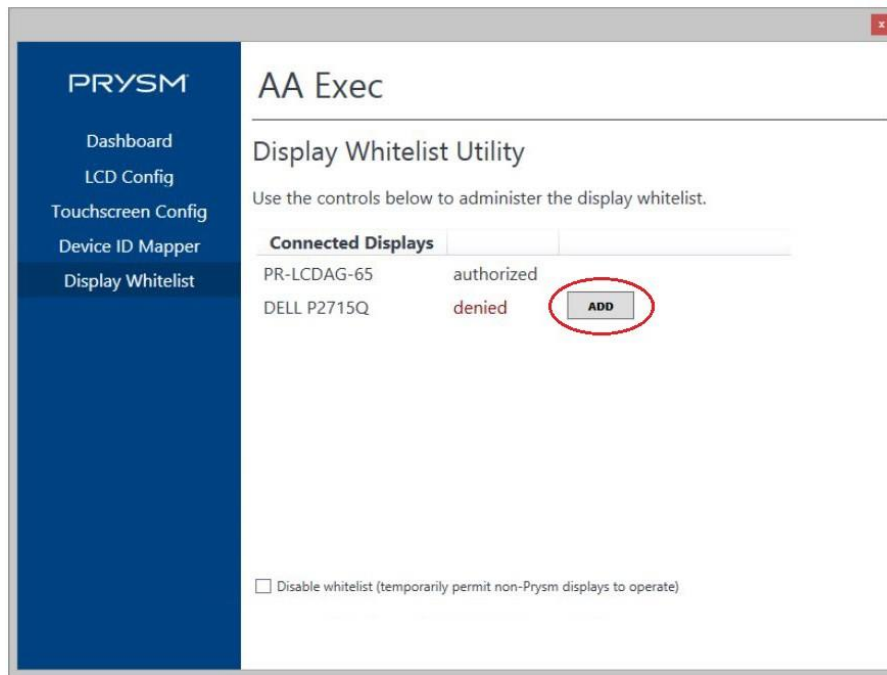
Cabling

Cable the LCD to the Application Appliance as shown below.

Whitelist the LCD

For the PAS to function on an LCD, the Application Appliance must recognize the LCD on its whitelist.

To add an LCD to the whitelist, use the Application Appliance Executive (AAExec) utility, which is available in the Application Appliance's tools directory (`C:\Tools\aaexec.exe`). Documentation for AA Exec is available: *The Prysm Application Appliance Executive Utility Configuration Guide* (520-00092-00 Rev 01). The following figure shows how to add a display to the whitelist.

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Case 2–Multiple LCD Displays (Video Wall Arrays)

Touch-enabled video walls use multiple LCD panels mounted with a touch sensor along the perimeter of the combined panels. Arrays can be used in two ways:

- It can be a combination of individual LCD panels, with a touch sensor on each panel. (Note that each display panel's touch sensor has a USB connector, so a USB hub may be required to combine signals back to the X30.)
- It can be made up of displays without their own touch sensor, where the display panels are mounted close together, and a touch sensor is added to the wall's perimeter. This combines multiple LCD panels to create one complete touch-canvas. A touch canvas is configured using tools supplied by the touch sensor manufacturer.

The configuration of an LCD array is called a mosaic.
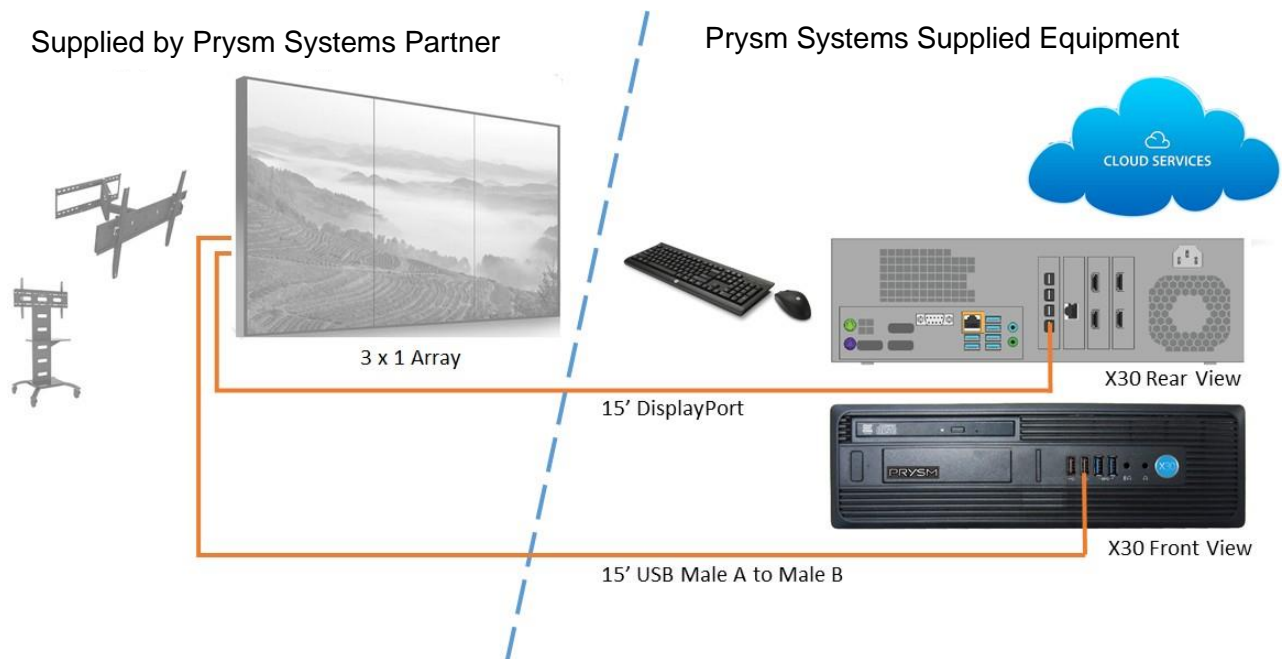
Key questions:

1. Is the display touch-enabled with a PQLabs product?
2. Is the array commercial / industrial grade?
3. Are the LCD panel's bezels narrow and with low height from the glass to function properly with a touch sensor at the array's perimeter?
4. Does the integrator have access to tools for configuring the array and touch sensor?
5. Can the LCD array be validated to work with the video wall and touch sensor before installation?

The Prysm Systems Solutions Consultant should consider providing the integrator with access to an X30 to validate PAS functionality prior to purchasing.

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Cabling

Cable an LCD array to the Prysm Systems Application Appliance as shown in the example below.

Supplied by Prysm Systems Partner

Prysm Systems Supplied Equipment

3 x 1 Array

15' DisplayPort

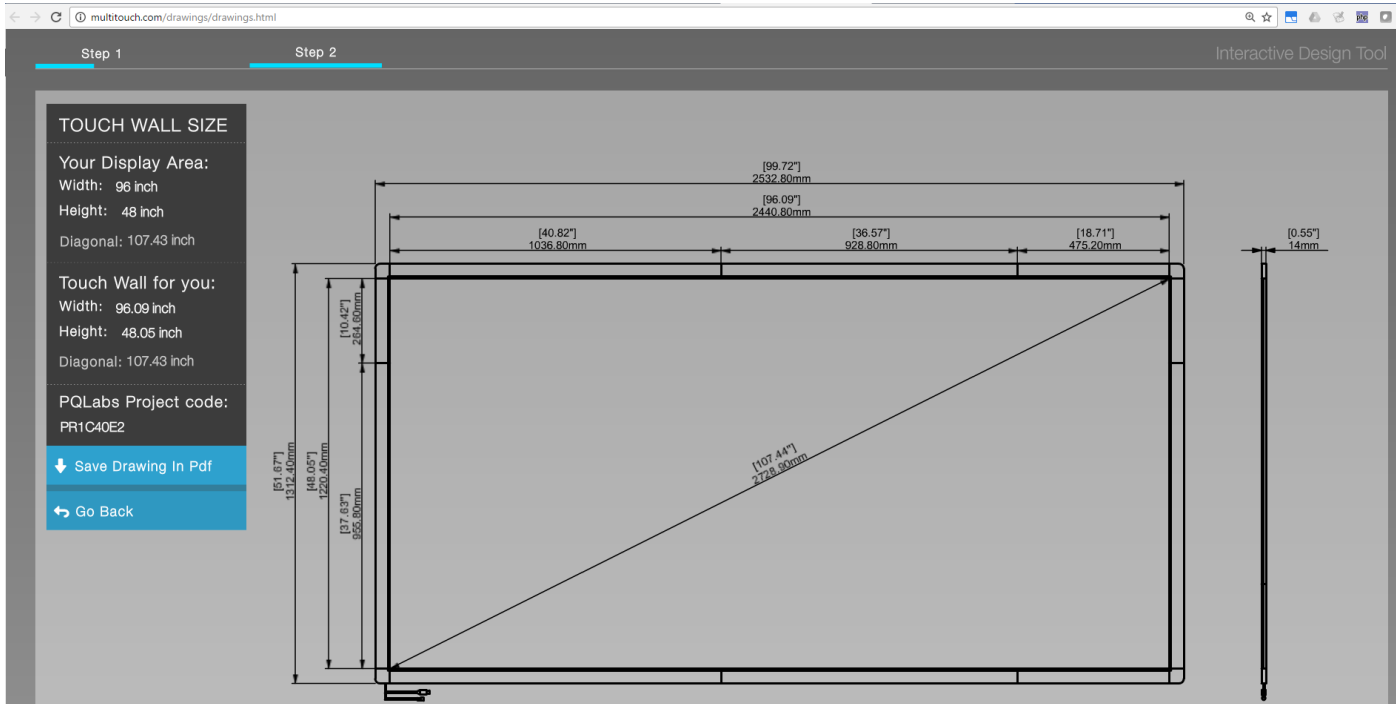X30 Rear View

X30 Front View

15' USB Male A to Male B

Touch Frame Installation Tools

If a touch sensor is to be added to a multi-panel video wall, guide the integration partner to PQLabs and their partners (listed below). The PQLabs configuration page is at http://multitouch.com/multi-touch-wall.html.

PQLabs provides software to specify the display size (width and height) through the "Customize" button (see https://drawings.pqlabs.cn/drawing55.html).
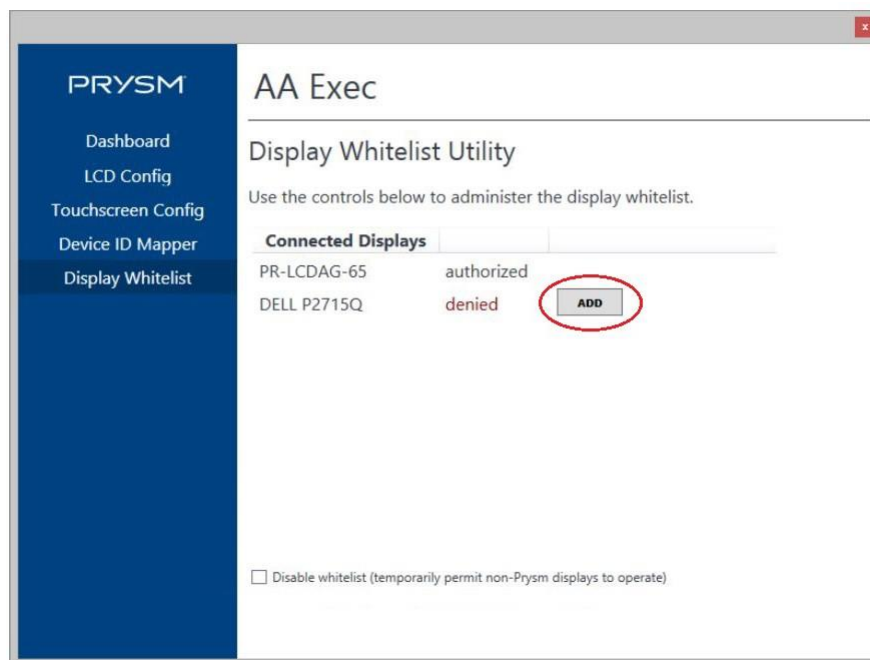
Once the parameters are entered, the website provides drawings of the relevant dimensions.

Whitelist the LCD

For the PAS to operate, it must recognize the LCD video wall on its whitelist. To add an LCD to the whitelist, use the Application Appliance Executive utility, which is available in the Application Appliance's tools directory (`C:\Tools\aaexec.exe`). Documentation for the AA Exec is available: *The Prysm Systems Application Appliance Executive Utility Configuration Guide* (520-00092-00 Rev 01). The following figure shows how to add a display to the whitelist.

Touch Mosaic Configuration

After a video wall array is mounted and operational, configure the touch sensors. Touch sensor manufacturers provide tools for configuration similar to the example below: