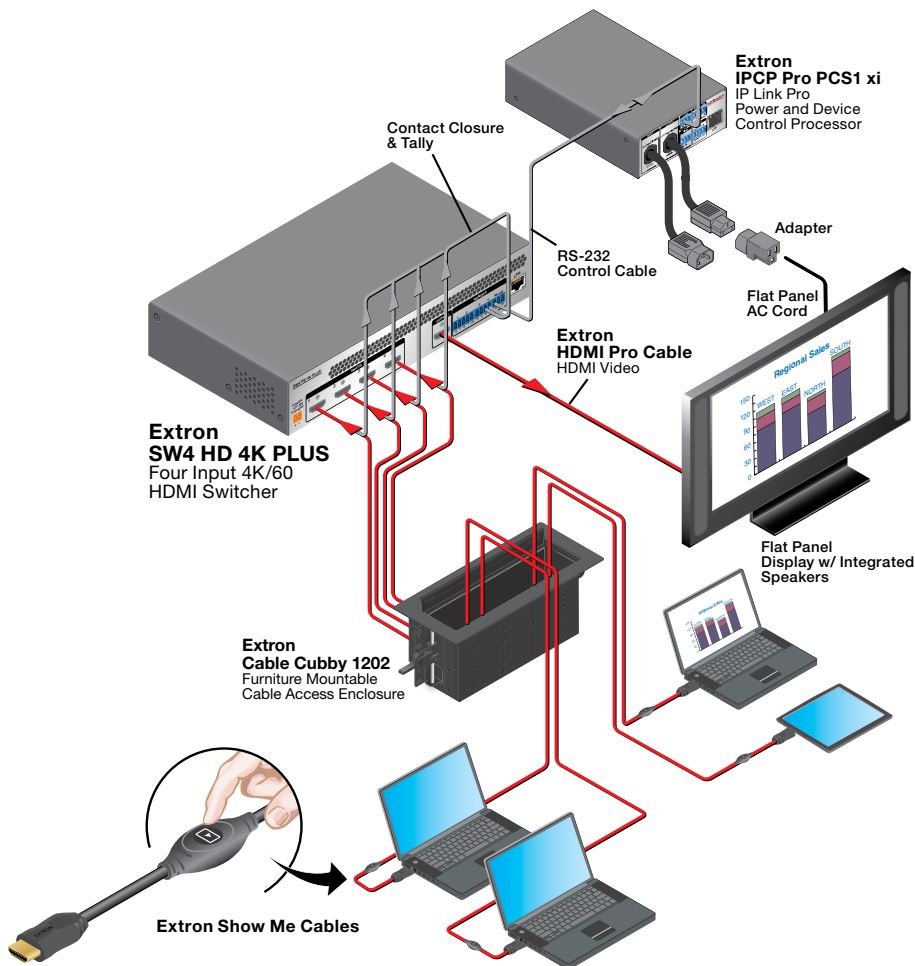# Extron

TeamWork® 400 Kit • Installation Guide

TeamWork 400 Kit

The TeamWork 400 kit consists of an HDMI switcher, system controller, Cable Cubby®, and cables packaged together as a complete system that, in most cases, requires no configuration.

The diagram above shows a typical TeamWork 400 application. The input devices (laptops and a tablet) connect to the switcher, using Show Me® cables. The Show Me cables allow the user to select the active input on the switcher.

A control cable connects the RS-232 ports on the switcher and the system controller.

The system controller powers the display on and off. The system controller has been configured so that when a video signal is detected on any of the switcher inputs, the display is powered on. A 30 second timer is started when no signal is detected on any of the switcher inputs. If an active source is detected before the timer expires, the display remains on and the timer is reset. If 30 seconds pass without an active signal, the system controller powers off the display.

The TeamWork kits work, as described, without further software configuration. If you need to change the behavior or operation of the system, you must configure the system controller (see the *IPCP Pro xi Series User Guide* at **www.extron.com**).

Features

- Standard systems support groups of up to four users.
- Standard systems contain a complete turnkey package that includes cables, switcher, system controller, and Cable Cubby enclosure.
- System controller pre-loaded with Global Configurator that requires no further adjustment.
- Works with most commercially available flat panel displays, laptops and tablets.
- HDCP compliant.
- Section 508 compliant.

Kit Components

When your kit is delivered, check that all the components are present.

TeamWork 400 Kit

	TeamWork 400
HDMI switcher	1 (SW4 HD 4K PLUS, 4 input)
System controller	1 (IPCP Pro PCS1 xi)
Cable Cubby	1 (Cable Cubby 1202)
Power modules (included with Cable Cubby)	1
HDMI Show Me cables	4
HDMI cable	1
Switcher control cable	1
4-cable Cable Cubby Bracket Kit	1 pair
Installation Guide	*TeamWork 400 Kit Installation Guide*

Display Requirements

The TeamWork system is designed to work with most brands and models of flat panel displays available worldwide. For optimum performance, consider the following when selecting the displays for your TeamWork installation. The display should be tested thoroughly prior to installation or mass deployment of TeamWork systems.

Power attributes — The system works by controlling AC power to the display. When the display is in the ON state with an HDMI input selected, it must be able to power back ON to the same HDMI input when AC power is disconnected and reconnected. If the display doesn't behave this way, an alternate display should be used. Alternatively, you may need to control the display a different way (i.e. RS-232, infrared, or via Ethernet) using a different type of Extron control processor.
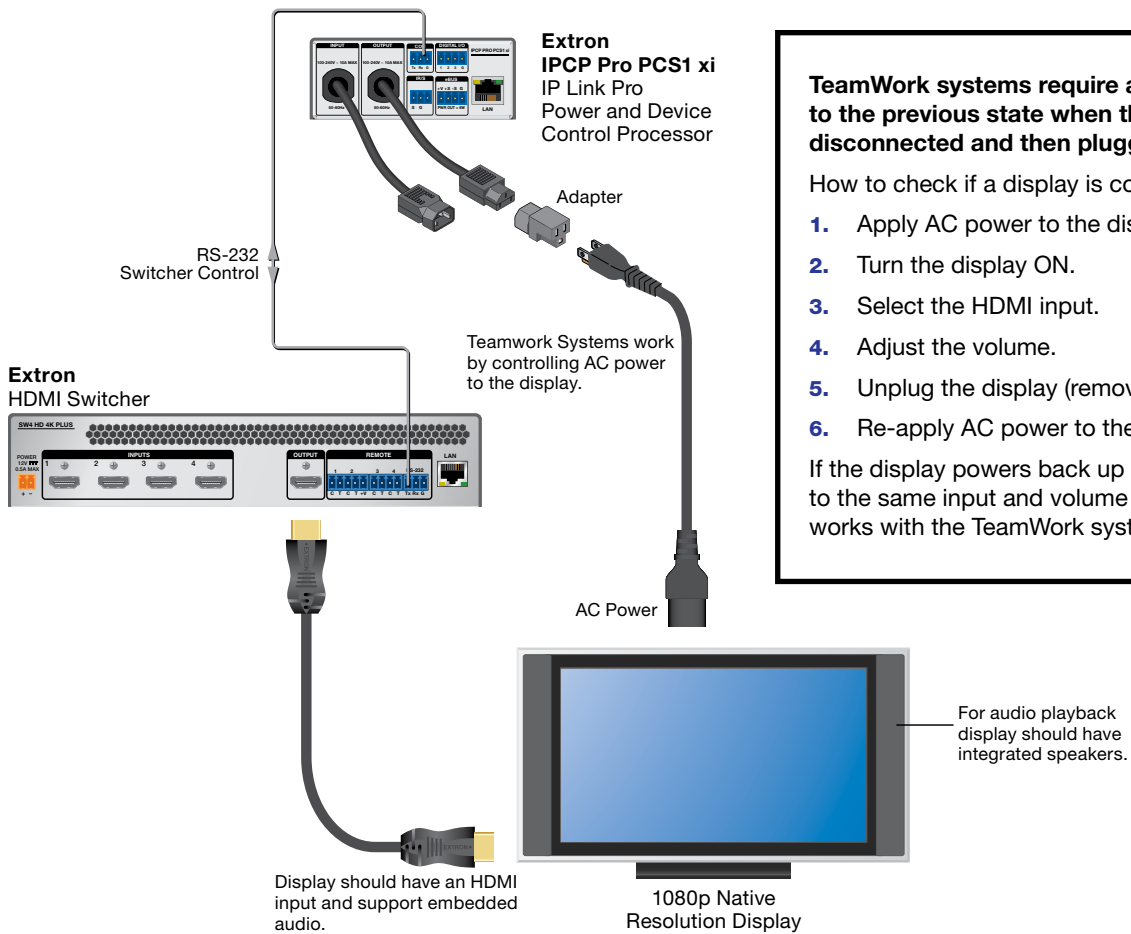
Sleep mode — If the display has a Sleep Mode feature (sometimes called 'auto sleep'), it must be disabled. Many displays have an option to disable this within the menu settings.

Resolution — The TeamWork systems were designed for use with flat panels having an HDMI input connector and having a native resolution of 1080p. Many of the readily available consumer and professional displays support 1080p natively.

Audio — Audio from source devices is supported in the TeamWork system by routing it as an embedded audio signal to the display for playback via integrated speakers. Most displays with HDMI inputs and integrated speakers work this way. Some professional or commercial grade displays do not have integrated speakers and do not support audio playback. Typically, source devices with HDMI output connectors embed audio onto the HDMI connector.

NOTES:

- Always check and test compatibility before installation. Some systems may require advanced configuration of the system controller and require the display to be controlled by RS-232, Ethernet, or Infrared.

- Some displays support a lockout of local buttons. Extron recommends that, after setup, user accessible controls are locked whenever possible. This ensures the display remains optimized for the TeamWork system.

Extron
IPCP Pro PCS1 xi
IP Link Pro
Power and Device
Control Processor

Adapter

RS-232
Switcher Control

Teamwork Systems work
by controlling AC power
to the display.

Extron
HDMI Switcher

SW4 HD 4K PLUS

AC Power

Display should have an HDMI
input and support embedded
audio.

1080p Native
Resolution Display

For audio playback
display should have
integrated speakers.

TeamWork systems require a display that returns to the previous state when the power cord is disconnected and then plugged back in.

How to check if a display is compatible:

1. Apply AC power to the display.
2. Turn the display ON.
3. Select the HDMI input.
4. Adjust the volume.
5. Unplug the display (remove AC power).
6. Re-apply AC power to the display.

If the display powers back up (to the ON state) and to the same input and volume level, the display works with the TeamWork system.
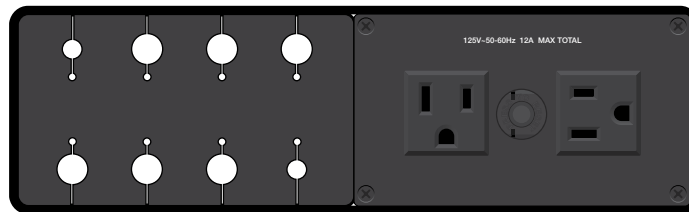
Installation

Install the Cable Pass-through Cassette Module and Show Me Cables

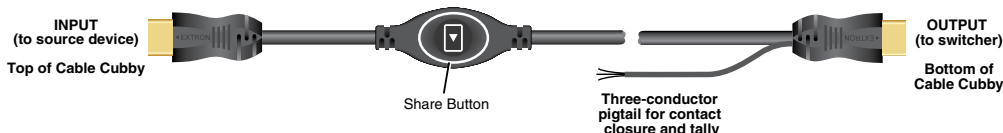Detailed instructions are in the *Cable Cubby Setup Guide*.

Extron recommends the layout shown to the right with cable pass-through module to the left of the power module.

> **NOTE:** The figure to the right shows the US power module. Power modules for other countries look different.


Cable Pass-through Cassette Module   Power Module

INPUT (to source device)   OUTPUT (to switcher)

Top of Cable Cubby   Bottom of Cable Cubby

Share Button   Three-conductor pigtail for contact closure and tally


ATTENTION:

- The end with the button and LED connects to the input devices and must come out of the top of the Cable Cubby.

- Le bout avec le bouton et la LED se connecte aux appareils d'entrée et doit ressortir du haut du Cable Cubby.

- The end with the three-conductor pigtail connects to the switcher and must come out of the bottom of the Cable Cubby.

- Le bout avec le mini câble à trois conducteurs se connecte au sélecteur et doit ressortir du bas du Cable Cubby.

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1. Assemble the cable pass-through cassette module as shown in "Assemble Cable Module" in the diagram to the right.

2. Insert the cable cassette module into the Cable Cubby from underneath and secure them in position with the provided #4-40 Phillips head screws and star washers.
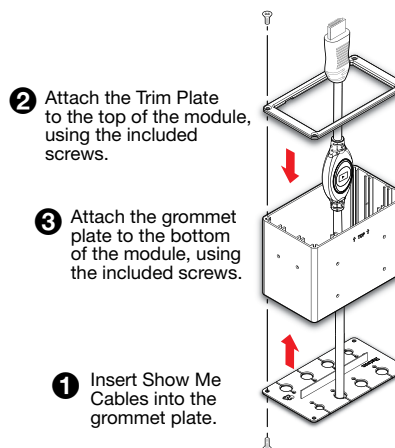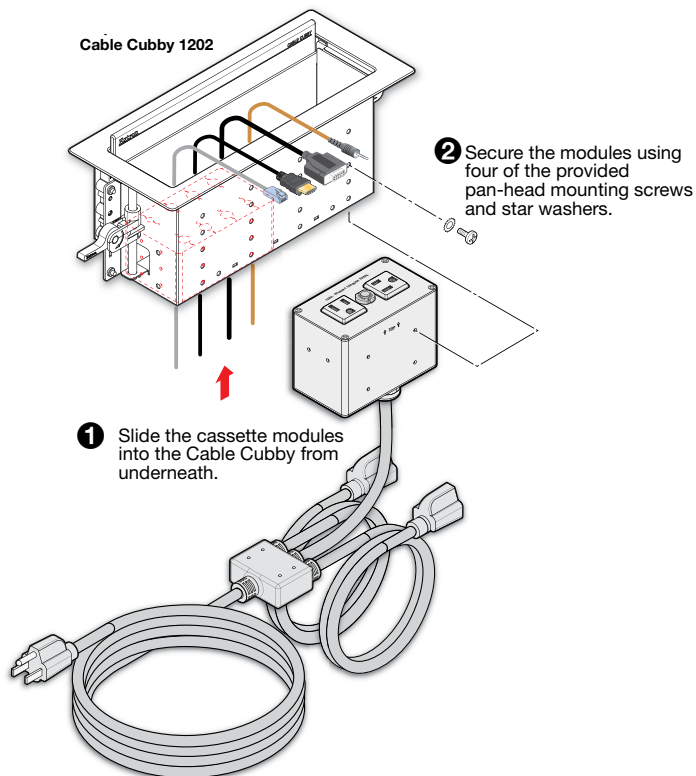
Install the Power Modules in the Cable Cubby

Insert the power module into the Cable Cubby from underneath and secure the power modules in position with the provided #4-40 Phillips head screws and star washers (see "Install Power Module" in the diagram to the right).
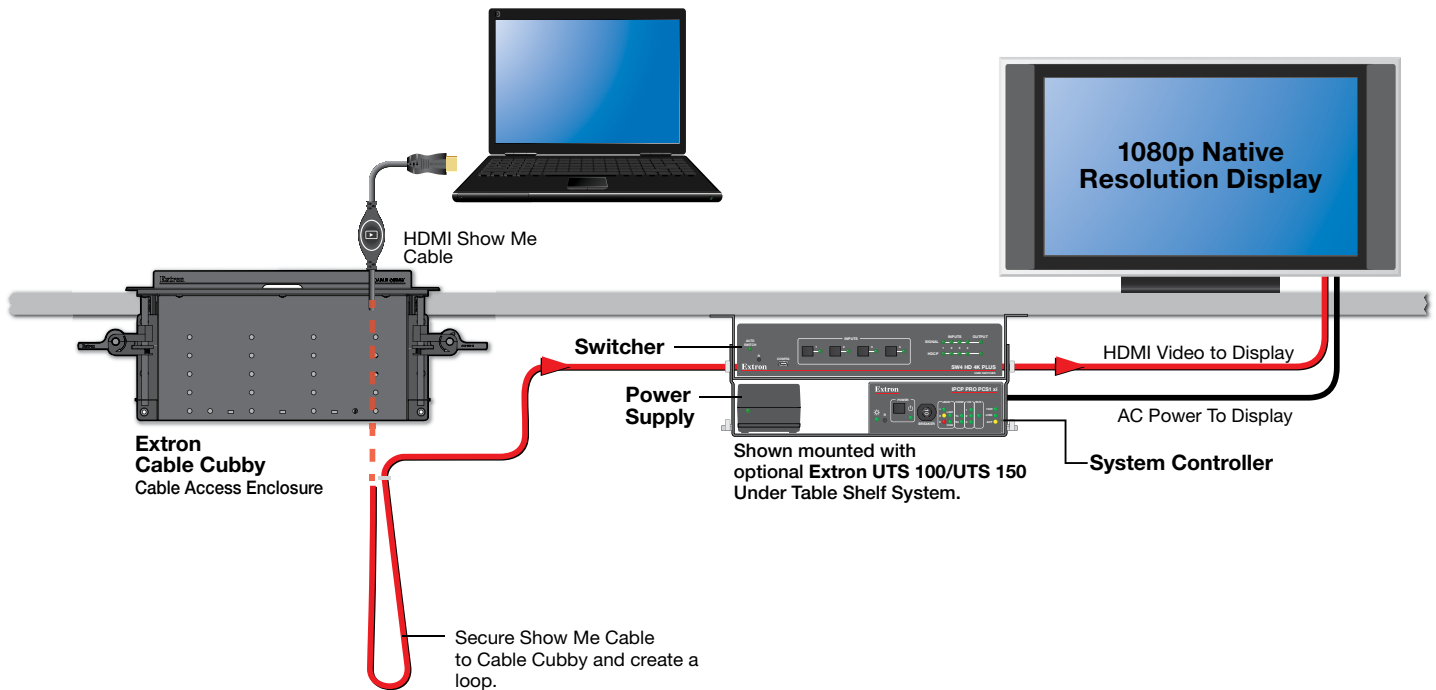
> ⚠ **WARNING: Possible electric shock:** To ensure good electric grounding, you must use the star washers with the screws.
>
> **AVERTISSEMENT: Risque de choc électrique:** Afin d'assurer une mise à la terre correcte, vous devez fixer les modules d'alimentation au Cable Cubby à l'aide de vis et de rondelles en étoile.

Assemble Cable Module

2 Attach the Trim Plate to the top of the module, using the included screws.

3 Attach the grommet plate to the bottom of the module, using the included screws.

1 Insert Show Me Cables into the grommet plate.

Install Power Module

Cable Cubby 1202

2 Secure the modules using four of the provided pan-head mounting screws and star washers.

1 Slide the cassette modules into the Cable Cubby from underneath.

Mounting and Placement of System Components

Decide where to install your TeamWork system and where to place the individual components.

• The Cable Cubby should provide easy access for as many users as possible. Ensure that there is ample space for cables under the table. Ensure that the edge on which the lid opens is correctly oriented.

• The system controller should be placed close to the display.

• The switcher should be placed close to the Cable Cubby.

HDMI Show Me Cable

1080p Native Resolution Display

Switcher

Power Supply

Extron Cable Cubby
Cable Access Enclosure

HDMI Video to Display

AC Power To Display

Shown mounted with optional **Extron UTS 100/UTS 150** Under Table Shelf System.

System Controller

Secure Show Me Cable to Cable Cubby and create a loop.

Installing the Cable Cubby in the Table

Before cutting the table and installing the Cable Cubby, see the *Cable Cubby Setup Guide* (see **www.extron.com**).

| ATTENTION: |
|---|
| • Ensure that the orientation of the Cable Cubby and the hole dimensions are correct before cutting the table. |
| • Assurez vous que la position du Cable Cubby et les dimensions du trou soient correctes avant de couper la table. |
| • After installation, secure the cables to avoid them becoming tangled (see the figure above). |
| • Après l'installation, sécurisez les câbles de façon à éviter qu'ils ne s'emmêlent (voir l'illustration au-dessus). |

Cabling
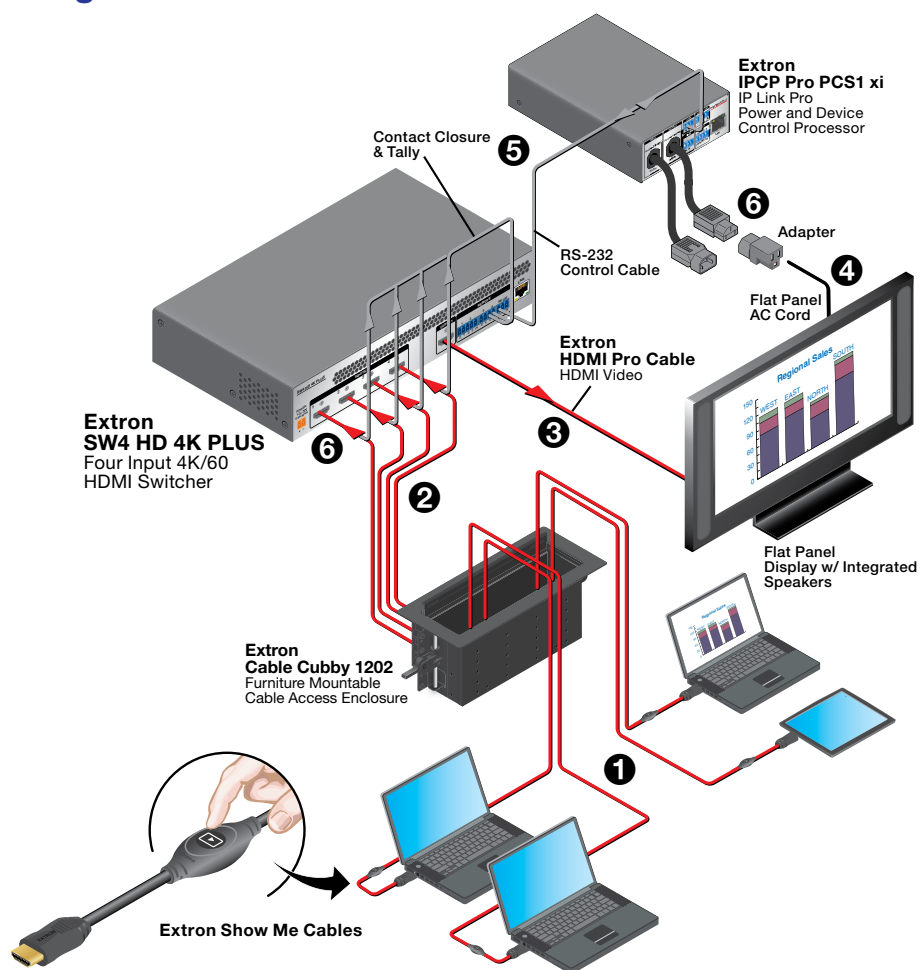
❶ Connect the Show Me cables to the source devices.
❷ Connect the Show Me cables to the switcher.
❸ Connect the switcher to the display.
❹ Connect the display to the system controller.
❺ Connect the system controller to the switcher.
❻ Connect power to the switcher and system controller.

NOTE: The **power module** shown on page 4 has two sockets on the top and two outlet cables underneath. The two outlet cables are 2 feet (61 cm) and can be used to power the switcher and system controller of the TeamWork kit, if required.

HDMI Show Me Cables

The Extron Show Me cables are for use with Extron TeamWork systems. They feature a **Share** button for remote input source selection and a control pigtail, which may be wired directly into Extron switchers with contact closure and tally outputs.

HDMI Show Me cable
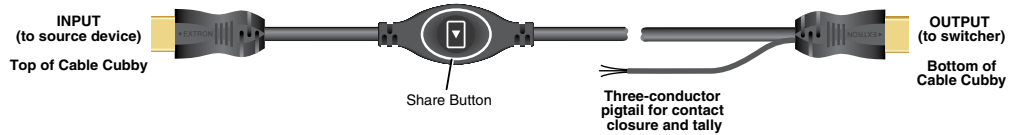
1. Connect the input end of the Show Me cable to the source device.

2. Connect the HDMI output to the Extron switcher.

Extron SW4 HD 4K PLUS Switcher (HDMI input)
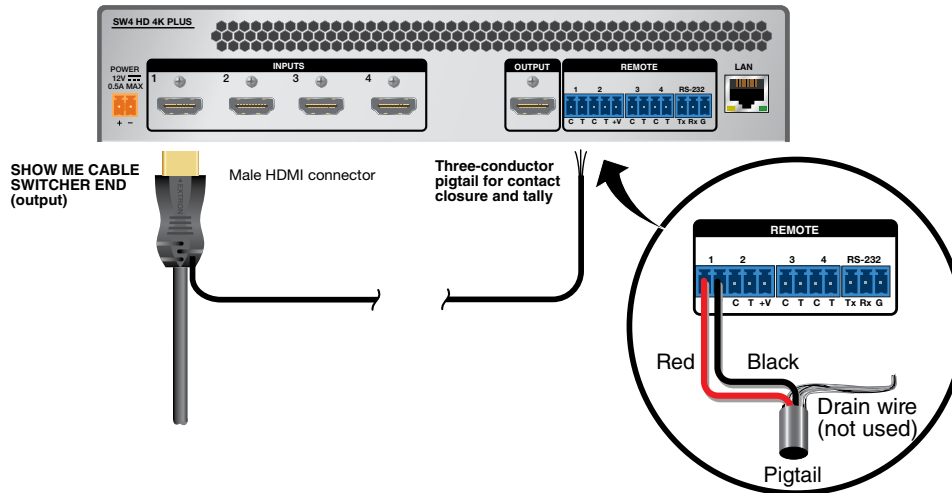
3. Connect the black (`Tally Out`) and red (`Contact`) pigtail wires as shown above. The number next to the Tally Out and Contact pins must correspond to the video input on the switcher.

> **NOTES:**
> - The drain wire does not need to be wired to the switcher. The Show Me cables are grounded via the video connectors.
> - Do not connect the Show Me cable to the +V pin on the Extron switcher.

Press the **Share** button to switch the connected source to the main presentation display.

Pressing the **Share** button creates a momentary contact closure, which triggers the switcher to select the connected source device. If a tally output is available, the button lights blue.

> **NOTES:**
> - The source device provides the +5 VDC supply voltage needed to illuminate the **Share** button. If the source device does not supply this +5VDC, the **Share** button does not light. Some mobile devices do not provide the required voltage to light up the button.
> - Digital Show Me cables support embedded audio and CEC signals.
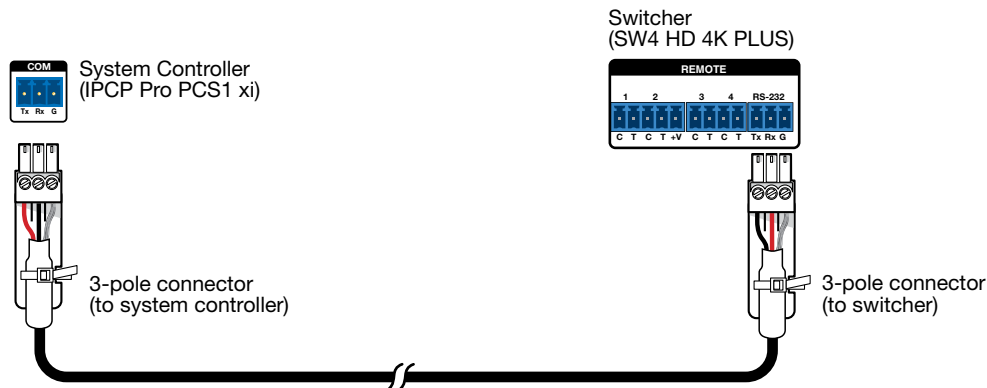
Connect the Switcher to the Display Device

Connect the switcher HDMI output to the HDMI input of the display device, using the provided cable. Do not use HDMI to DVI adapters. If necessary, see the user guide for the display device.

Connect the Display to the System Controller

Connect the power cord from the display device to the power output receptacle of the system controller. TeamWork systems work by controlling the AC power to the display.

Connect the System Controller to the Switcher

Connect the COM port of the system controller to the RS-232 port on the switcher with the provided control cable.

Switcher
(SW4 HD 4K PLUS)

REMOTE

1   2   3   4   RS-232

C T C T +V   C T C T Tx Rx G

COM

Tx Rx G

System Controller
(IPCP Pro PCS1 xi)

3-pole connector
(to system controller)

3-pole connector
(to switcher)

Connect Power

The system controller uses an internal power supply. Connect the power cord to a wall outlet.

The TeamWork 400 systems use a 4 input switcher with a 12 VDC, 1.5 A power supply, which is provided with the switcher.

POWER
12 V ⎓
0.5 A MAX

+ −

> **ATTENTION:**
>
> - Do not connect the power supply to the SW4 HD 4K PLUS switcher until you have read the Attention notifications in the "Wiring the Power Supply" section of the *SW HD 4K PLUS Series User Guide*.
>
> - Ne branchez pas le sélecteur SW4 HD 4K PLUS avant d'avoir lu la mise en garde dans la section « sources d'alimentation » du *SW HD 4K PLUS Series User Guide*.
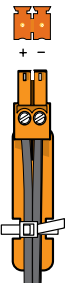
Testing the System

The TeamWork system has been pre-configured so that, once all the connections have been made and the devices are all powered on, there should be no need of further configuration for the system to work. To ensure that the system has been set up correctly, follow these steps:

1. Power on the equipment:
    - Source devices
    - Switcher
    - System controller (IPCP Pro PCS1 xi)

2. Press the **POWER** button (❶) on the front panel of the system controller. The LED (❷) lights green when power is being supplied to the attached output device.

3. Turn on the display and confirm that the display is receiving power.

4. Go to the menu for the display and disable the sleep mode feature. If necessary, see the display user guide.

5. Press the **POWER** button on the power controller. The LED should go out and the display should be turned off.

6. Connect one of the Show Me cables to a video source, such as a laptop.

7. Press the **Share** button on that cable. If the source device is providing a video signal, the LED on the Show Me cable lights blue and the display automatically turns on.

8. Connect a second Show Me cable to a second video source.

9. Repeat step 7 to verify that the second source device is providing a video signal and it is the output signal from the switcher.

    When the button on the second Show Me cable is pressed, the LED lights blue and the LED on the first cable is switched off.

10. Disconnect all the Show Me cables from the source devices.

    After about 30 seconds without an input signal, the display should turn off.

11. Connect a Show Me cable to a source device and press the **Share** button on that cable.

    As soon as an active video signal is detected, the display should automatically turn on.
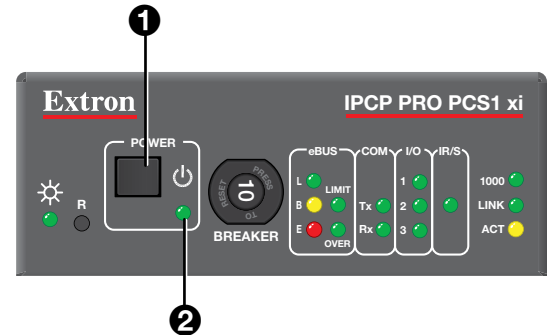
Troubleshooting

No Image on the Display:

Cause 1 — There is a problem with the source device:

Solution — Verify that the source device is powered **on** and outputs an active signal.

Cause 2 — Cable connections are incorrect:

Solution — Verify that the HDMI output cable from the switcher is connected to the current HDMI input of the display.

Cause 3 — Display is off:

Solution 1 — Verify that the display is in the **on** state.

Solution 2 — The TeamWork system turns the display on and off by controlling the AC power. If the display has a Sleep Mode feature, this feature must be disabled to prevent the display from accidentally powering **off**.

Cause 4 — The display has a problem:

Solution — Verify that the display functions correctly.

Cause 5 — The display cannot show video at the incoming resolution:

Solution — The EDID settings on the switcher may need to be changed. Refer to the *SW HD 4K Series User Guide* (see **www.extron.com**) or contact an Extron Support representative at **www.extron.com/company/contactus.aspx**.

Show Me Button LEDs Stay Off When Pressed:

Cause 1 — The cable is not plugged into a source device that is producing an active video output signal:

Solution — Verify that the source device is on and producing an active signal.

Cause 2 — Contact or Tally wiring is incorrect:

Solution — See **HDMI Show Me Cables** on page 7 to ensure the contact and tally pins are correctly wired.

Cause 3 — The switcher is not powered on:

Solution — Verify that the switcher is powered **on**.

Cause 4 — Problem with Show Me cable:

Solution — Try connecting the video source to a different cable. If the second cable works correctly, there may be a problem with the Show Me cable. Contact an Extron Support representative at **www.extron.com/company/contactus.aspx**.

Cause 5 — Problem with Switcher:

Solution — If none of the cables work correctly, there may be a problem with the switcher. Contact an Extron Support representative at **www.extron.com/company/contactus.aspx**.

Cause 6 — The source device does not output +5V:

Solution — This is a problem with the source device. HDMI specifications require pin 18 to carry a +5V output.

The Display Does Not Automatically Turn On:

Cause 1 — Incorrect wiring:

Solution — Verify that the RS-232 communication cable is connected properly between the IPLink Pro controller and Extron switcher.

Cause 2 — There is no video signal present at Show Me cables:

Solution — Verify that an active signal is present at the input of any of the Show Me cables.

Cause 3 — IP Link Pro configuration is missing or corrupted:

Solution — Contact an Extron Support representative at **www.extron.com/company/contactus.aspx**.

Cause 4 — Display power is out of sync:

Solution — The display is in standby mode. Turn on the display using the remote or the physical power button.

Cause 5 — Display has sleep mode enabled

Solution — Go to the menu for the display and disable the sleep mode feature. Turn on the display using the remote or physical power button.

The Display Stays On and Never Turns Off:

Cause 1 — Video signal is present at Show Me cables:

Solution — Verify that no active signals are present at the inputs of any of the Show Me cables. The TeamWork system is designed to turn off the display only when no video signals are present.

For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the **Extron Safety and Regulatory Compliance Guide** on the Extron website.
For information about replacing and disposing of batteries, see the *IPCP Pro xi Series User Guide* at **www.extron.com**.