

Telecast Fiber Solutions

Power Plus 2, HDX-Plus and SHED User Guide

4049-99M00-103

2 May 2018



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Title	Power Plus 2, HDX-Plus and SHED User Guide
Part Number	4049-99M00-103
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Important Safeguards and Notices

This section provides important safety guidelines for operators and service personnel. Specific warnings and cautions appear throughout the manual where they apply. Please read and follow this important information, especially those instructions related to the risk of electric shock or injury to persons.

Symbols and Their Meanings



Indicates that dangerous high voltage is present within the equipment enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



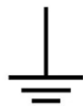
Indicates that the user, operator or service technician should refer to the product manuals for important operating, maintenance, or service instructions.



This is a prompt to note the fuse rating when replacing fuses. The fuse referenced in the text must be replaced with one having the ratings indicated.



Identifies a protective grounding terminal which must be connected to earth ground prior to making any other equipment connections.



Identifies an external protective grounding terminal which may be connected to earth ground as a supplement to an internal grounding terminal.



Indicates that static sensitive components are present, which may be damaged by electrostatic discharge. Use anti-static procedures, equipment and surfaces during servicing.



Indicates that the equipment has more than one power supply cord, and that all power supply cords must be disconnected before servicing to avoid electric shock.



The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Canadian Standard Association (CSA) regulations and recommendations for USA/Canada.



The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Underwriters Laboratory (UL) regulations and recommendations for USA/Canada.



The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Intertek Testing Services regulations and recommendations for USA/Canada.



The presence of this symbol in or on Grass Valley product means that it complies with all applicable European Union (CE) directives.



The presence of this symbol in or on Grass Valley product means that it complies with safety of laser product applicable standards.

Warnings



A warning indicates a possible hazard to personnel, which may cause injury or death. Observe the following general warnings when using or working on this equipment:

- Appropriately listed/certified mains supply power cords must be used for the connection of the equipment to the mains voltage at either 120 V AC or 240 V AC.
- This product relies on the building's installation for short-circuit (over-current) protection. Ensure that a fuse or circuit breaker for 120 V AC or 240 V AC is used on the phase conductors.
- Any instructions in this manual that require opening the equipment cover or enclosure are for use by qualified service personnel only.
- Do not operate the equipment in wet or damp conditions.
- This equipment is grounded through the grounding conductor of the power cords. To avoid electrical shock, plug the power cords into a properly wired receptacle before connecting the equipment inputs or outputs.
- Route power cords and other cables so they are not likely to be damaged. Properly support heavy cable bundles to avoid connector damage.
- Disconnect power before cleaning the equipment. Do not use liquid or aerosol cleaners; use only a damp cloth.
- Dangerous voltages may exist at several points in this equipment. To avoid injury, do not touch exposed connections and components while power is on.
- High leakage current may be present. Earth connection of product is essential before connecting power.
- Prior to servicing, remove jewelry such as rings, watches, and other metallic objects.
- To avoid fire hazard, use only the fuse type and rating specified in the service instructions for this product, or on the equipment.
- To avoid explosion, do not operate this equipment in an explosive atmosphere.
- Use proper lift points. Do not use door latches to lift or move equipment.
- Avoid mechanical hazards. Allow all rotating devices to come to a stop before servicing.
- Have qualified service personnel perform safety checks after any service.

Cautions



A caution indicates a possible hazard to equipment that could result in equipment damage. Observe the following cautions when operating or working on this equipment:

- This equipment is meant to be installed in a restricted access location.
- When installing this equipment, do not attach the power cord to building surfaces.
- Products that have no on/off switch, and use an external power supply must be installed in proximity to a main power outlet that is easily accessible.
- Use the correct voltage setting. If this product lacks auto-ranging power supplies, before applying power ensure that each power supply is set to match the power source.
- Provide proper ventilation. To prevent product overheating, provide equipment ventilation in accordance with the installation instructions.
- Do not operate with suspected equipment failure. If you suspect product damage or equipment failure, have the equipment inspected by qualified service personnel.
- To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel. Servicing should be done in a static-free environment.
- This unit may have more than one power supply cord. Disconnect all power supply cords before servicing to avoid electric shock.
- Follow static precautions at all times when handling this equipment.

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About Power Plus 2, HDX-Plus and SHED

This chapter provides an overview of the Power Plus 2, HDX-Plus and SHED and includes the safety and warranty information about it.

<i>About the Power Plus 2, HDX-Plus and SHED System</i>	2
<i>Optical Fiber Safety</i>	3
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Optical Fiber Safety

Never look directly into the end of the optic fiber while either end of the system is operating.

Always use cable connector caps when the cables are not connected. This protects the connector from damage and the unlikely event of exposure to an operating optical link. Keeping the caps in place when the connectors are not in use will prevent dirt and dust from entering the connector and degrading the performance of the optical link.

Power Fuses

The HDX-Plus is equipped with an internal fuse. Refer to the ordering and manufacturer code below:

60-02110 Fuse 5 x 20mm Slow-blow, radial, 250 V/5A (Littelfuse 0218 005.HXP)

Never operate the HDX-Plus without properly installed and rated fuses. Severe electrical and heat damage could result as well as personal injury or death.

3

Detailed System Description

This chapter describes the components of the HDX-Plus and Power Plus 2 system

HDX-Plus Power Unit

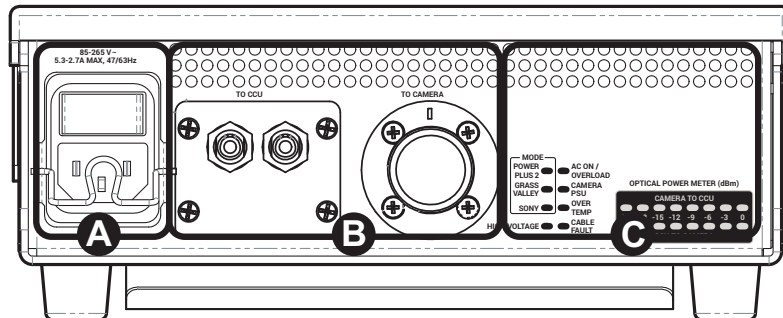


Fig. 3-1: HDX-Plus Front Panel

The HDX-Plus has three areas of interest:

- A) AC Power module
- B) Fiber optic connectors
- C) System indicators

Area A - AC Power Module

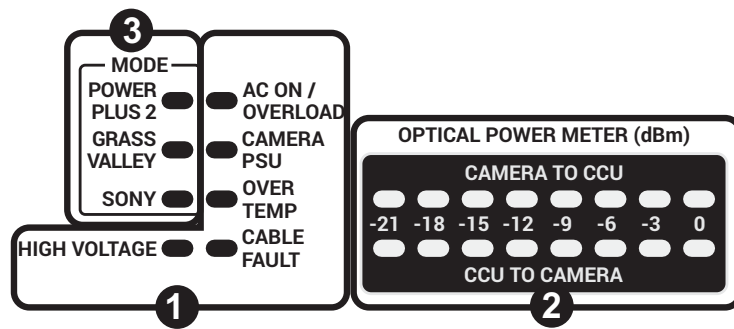
The HDX-Plus operates over an AC power input range of 100 - 240 VAC, with a frequency range of 50 to 60 Hz.

Area B - Fiber Connectors

Code	Description
UFP-2LC	Dual LC connector
UFP-2SC	2 SC fiber, ultra polished
UFP-2SCA	2 SC fiber, angle polished
UFP-2STSM	2 ST fiber connectors
UFP-MX2	MX dual fiber
UFP-NOC2	Neutrik OpticalCon Duo 2 Fibers

The HDX-Plus power supply connects to the Power Plus 2 / Camera Unit using SMPTE 304M Hybrid connectors over Hybrid Fiber Optic cable.

Area C - System Indicators



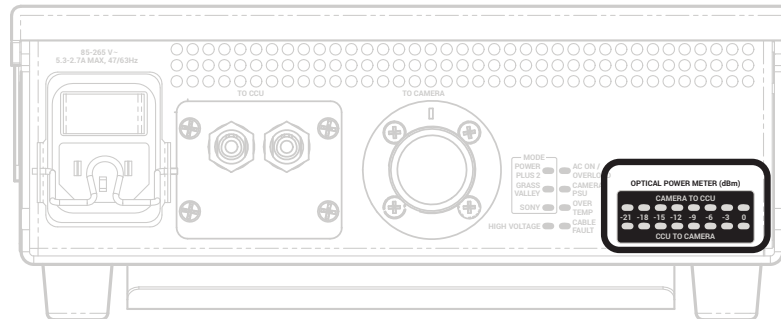
The HDX-Plus power supply provides three types of indicators:

- The first group is power and cable integrity indicators.
- The second group is an Optical Power meter.
- The third is mode of operation.

Optical Power Monitoring

The HDX-Plus power supply monitors the optical power for both the Camera unit and the CCU and uses a sequence of multi-colored LEDs to indicate the optical power level of each from -21dBm to 0 dBm.

The unit has two rows of LEDs:



- Top row LEDs indicate the optical power level at the camera unit.
- Bottom row indicates optical power level at CCU.

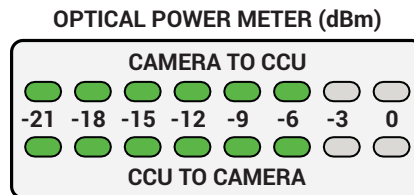
All of the indicator LEDs are multi-color:

- Green - good power
- Yellow Orange - Marginal power
- Red - Insufficient power.

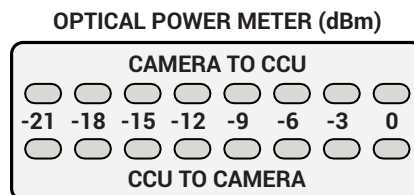
Power Monitoring Scenarios

The following diagrams illustrate operational scenarios in which the Optical Power Indicator LEDs provide a visual indication of the CCU and Camera fiber optical status.

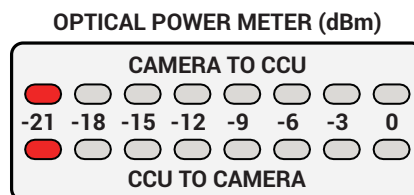
This scenario is a good operational situation. The input optical power from both the camera and the CCU is at -6 dBm. The Camera and the CCU will operate reliably at this signal strength.



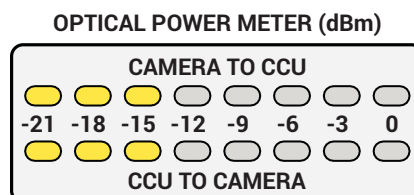
This scenario indicates that a possible faulty Fiber Optic link and no Optical Power comes in from either the camera or CCU. Check to make sure Fiber Optic connections, cable, camera, and CCU are in working condition.



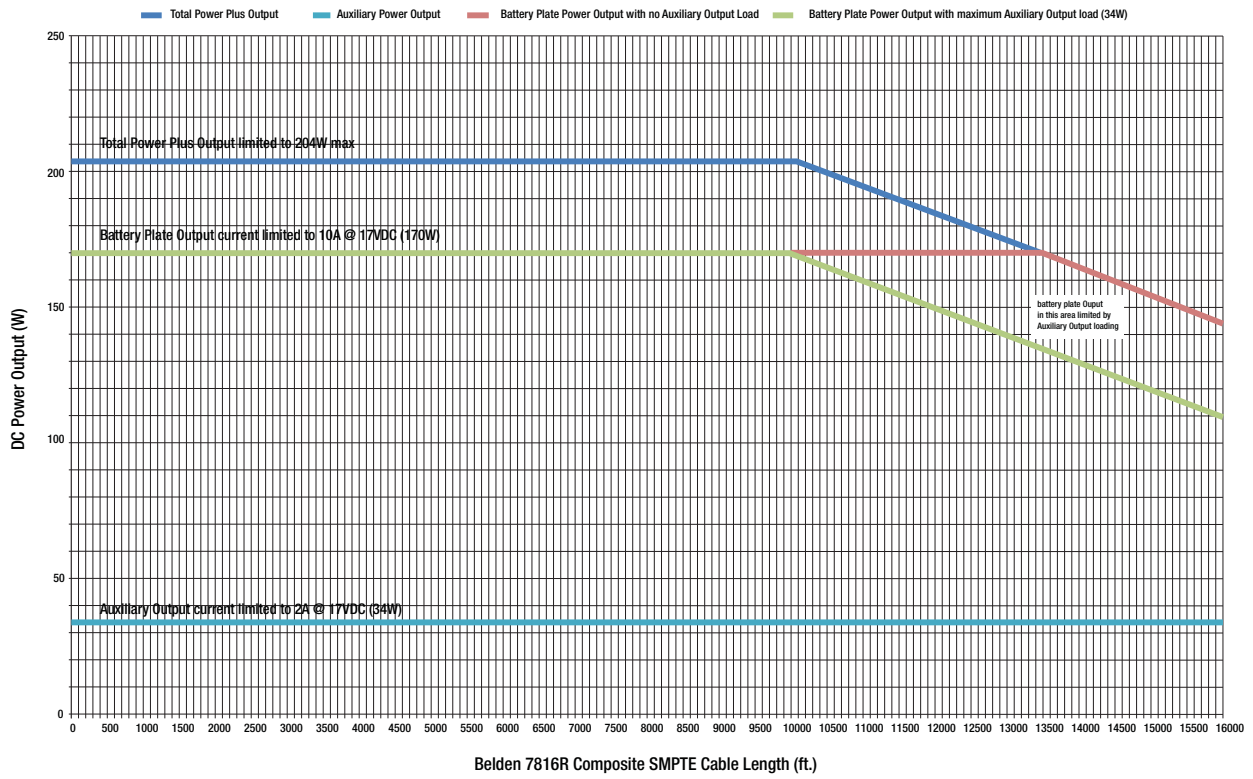
This scenario indicates that the input Optical Power from the camera and the CCU is at -21 dBm, the lowest threshold to provide an operational link. Check the Fiber Optic cable run for possible damage or physical interference such as sharp bends in the cable. Also check the Fiber Optic connectors for dust, dirt or damage.



This scenario indicates that the input Optical Power from the camera and the CCU is -15 dBm, low but more than adequate for a usable link. This would be a normal meter display if the fiber cable lengths are very long ($\geq \sim 8\text{km}$). However, if this display is seen when the fiber cable length is relatively short, check the cable run as above and check the Fiber Optic connectors for dust, dirt or damage.



HDX-Plus and Power Plus 2 Output Derating



* Maximum length of SMPTE cable with power varies with the camera system configuration, lens type, viewfinder type, size of the optical fiber cable and the number of cable connectors

4 Installation and Mounting

This chapter explains how to install and mount the Power Plus 2, HDX-Plus and SHED device and how to attach the power supply and camera unit.

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Mounting the Power Plus 2

When mounting the CopperHead Camera Unit and Power Plus 2, always position the camera so that the battery mounting plate at the rear of the camera is easy to access. Ensure that the camera is well supported and stable. If a battery is mounted, remove it.

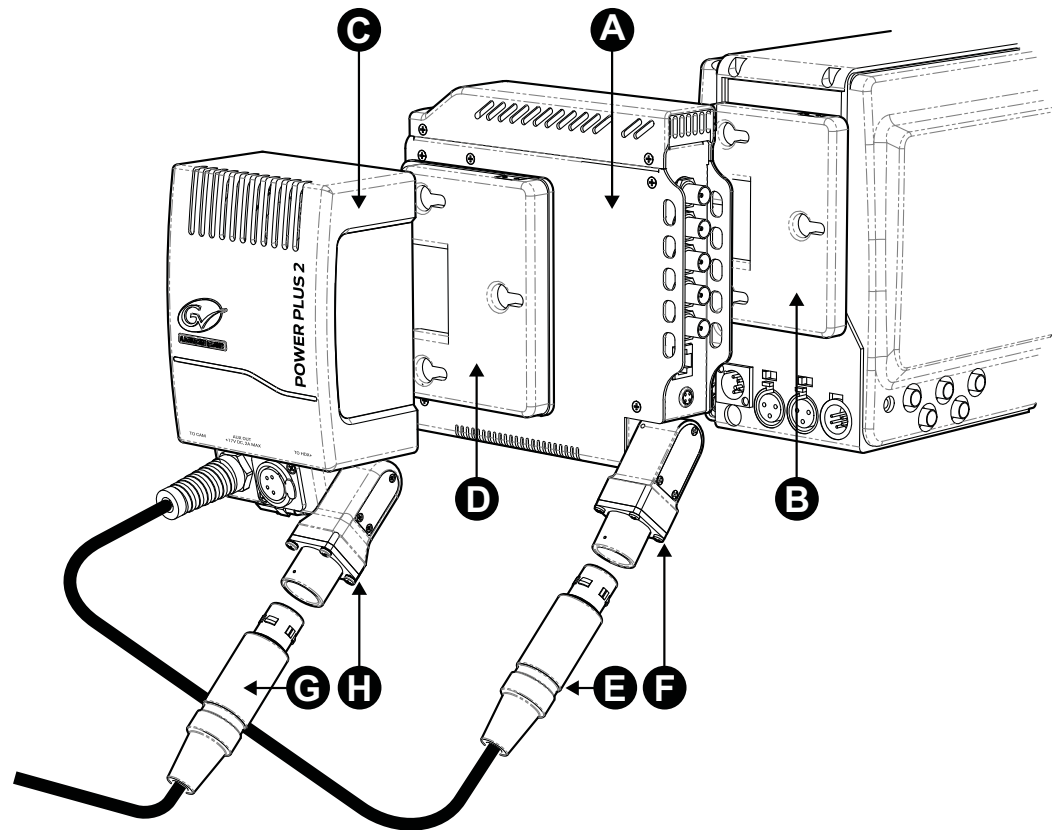


Fig. 4-1: Mounting the Power Plus Unit to the CopperHead Camera Unit

To mount the camera unit

- 1 Attach the CopperHead Camera Unit (A) to the camera's battery mounting plate (B). The mounting is mechanically identical to attaching a battery to the camera.
- 2 Mount the Power Plus 2 (C) to the CopperHead Camera Unit battery mounting plate (D) exactly as you would mount a battery to the camera.
- 3 Connect the Power Plus 2 dongle (E) to the fiber optic swivel F on Camera Unit (A). Connect the SMPTE hybrid cable connector (G) from the HDX to the SMPTE receptacle (H) on the Power Plus 2.

Connecting the HDX-Plus Power Supply and Camera Unit

Mount the Power Plus 2 (C) to the CopperHead Camera Unit (A) as shown in [Mounting the Power Plus 2](#) on page 2, being sure to plug the Power Plus 2 tactical fiber dongle (E) into the swivel-mounted fiber connector (F) on Camera Unit (A).

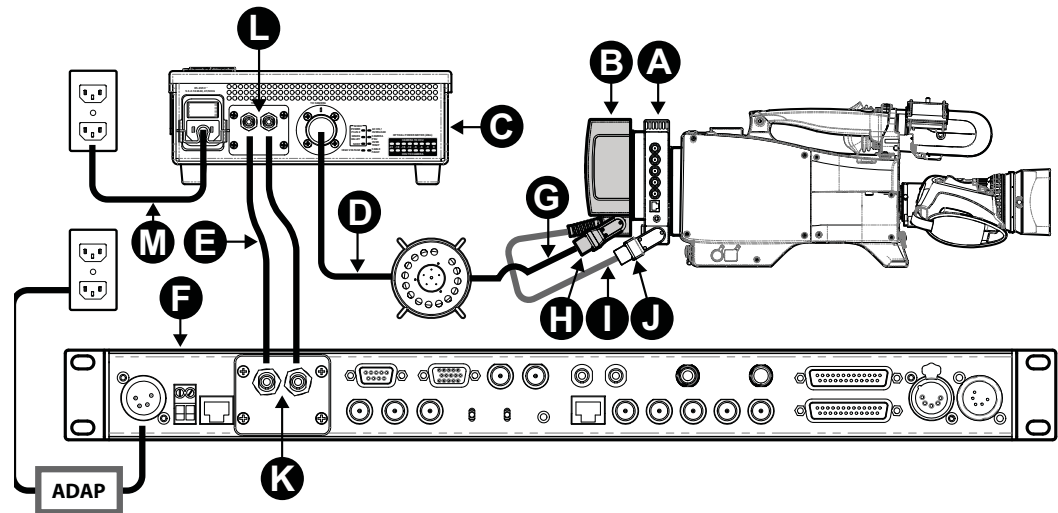


Fig. 4-2: SMPTE Hybrid Fiber between the HDX Power Supply and Camera Unit

- Connect dry (unpowered) fiber cable (J) between the fiber connector(s) (K) on Base Station (I) and the "dry" fiber connector(s) (L) on the HDX Power Supply (M).
- Connect the HDX Power Supply (M) to AC Mains (N).
- Connect a length of hybrid fiber cable (O) between the HDX Power Supply (M) and the swivel-mounted hybrid fiber connector H on the Power Plus (C).

The camera and CopperHead Camera Unit will be powered via the hybrid cable (O) by the Power Plus (C).

Mounting HDX-Plus in 19" rack

The optionally available HDX-TRAY allows up to two HDX-Plus units to be mounted into a standard 19" rack. The tray itself takes up 2RU of rack space.

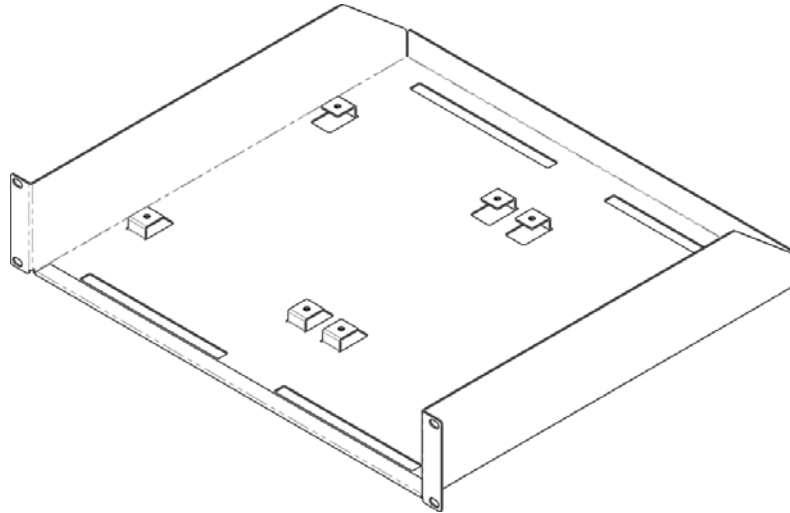


Fig. 4-3: Illustration of the HDX-TRAY for two HDX-Plus units

To mount the HDX-Plus onto the HDX-TRAY follow these steps:

- Turn the HDX-Plus upside down, loosen the four screws from the rubber feet and remove the feet.

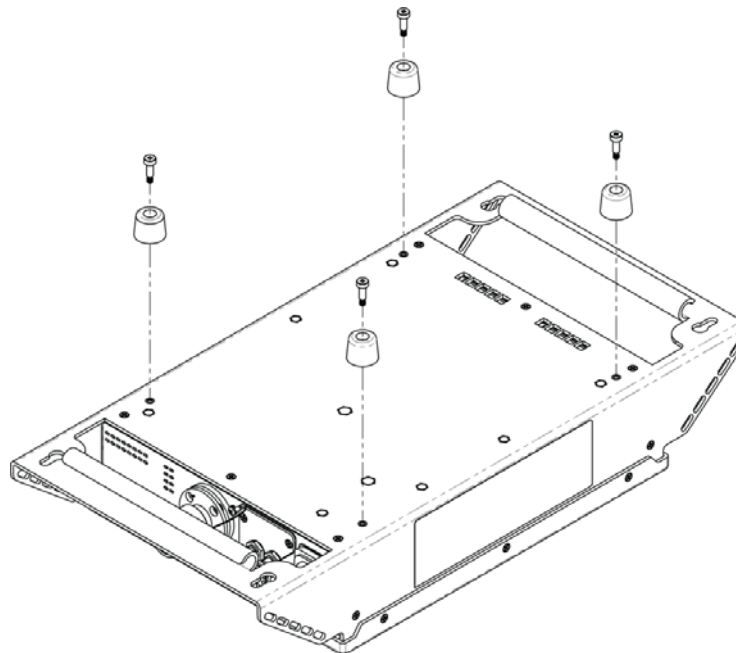


Fig. 4-4: Removal of rubber feet from unit

- Place the HDX-Plus on top of the studs of the tray and use the provided screws (4) to attach the unit to the tray from below.

- If needed, mount the second HDX-Plus unit to the tray in the same way.

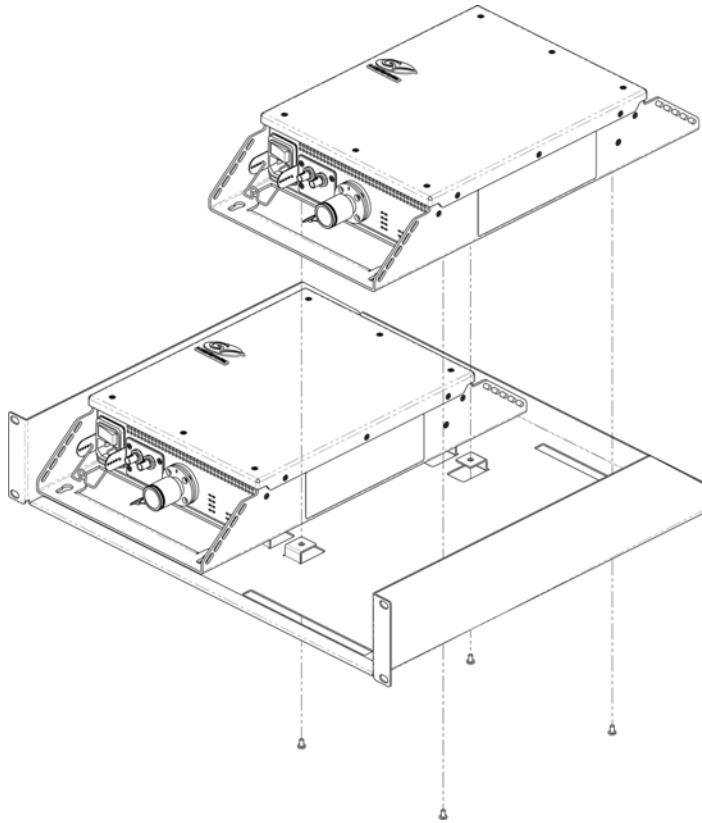


Fig. 4-5: Mounting HDX-Plus unit(s) to HDX-TRAY.

- The tray with the attached HDX-Plus unit(s) can now be mounted into a standard 19" rack.

Passive Set-up - SHED-BS and SHED-C

In a **Passive** set-up, a SHED-BS is connected to a SHED C with two singlemode fibers. In this configuration, the camera head must be locally powered via a battery or a suitable local power supply.



Fig. 4-6: Passive SHED-SHED System

SHED-BS Configuration for Camera Types

The SHED-BS supports multiple camera types, and each has different interface requirements at the CCU end. The SHED-BS must be manually configured for the type of camera in the system, using four DIP switches on the side of the case. A label is mounted on the case to show the switch positions for the supported cameras.

Camera	Sw 1	Sw 2	Sw 3	Sw 4
Sony	ON	ON	ON	OFF
Hitachi HD5000	OFF	ON	ON	OFF
Ikegami	ON	OFF	ON	OFF
Panasonic 3500	OFF	OFF	ON	OFF
Panasonic 931B	ON	ON	OFF	OFF
Panasonic 3800	OFF	ON	OFF	OFF

SHED-C and PANASONIC 3800 Camera

The Panasonic 3800 camera is a special case - it can be locally powered, but requires 10 VDC for handshaking on the sense line of the hybrid cable input. The SHED-C feeds this power to the camera. A jack on the SHED-C case accepts 12 VDC, and the 10 VDC required for the camera is fed down the hybrid fiber cable to the camera.

Setting up SHED-BS and SHED-C

The SHED-BS and SHED-C do not require an external electrical power supply of any kind. The only exception is SHED-C for the Panasonic 3800 camera, which requires an external power supply. What little power they do consume is provided by the camera system. In a passive system, only the fiber link of two singlemode ST terminated fibers needs to be provided. As the camera head is locally powered, the SHED-BS and SHED-C merely serve to "fool" the camera and base station into believing there is a piece of SMPTE hybrid cable between them.

Although SMPTE Hybrid cable lengths of up to 1500 m are supported, it is good practice to keep the cables as short as possible between the CCU and the SHED-BS and between the camera and the SHED-C to maintain optimum performance. Individual SHED-BS and SHED-C units can be mounted directly to an access panel in a frame if convenient.



Fig. 4-7: SHED Mounted to Access Panel

SHED-6

For users with multiple listed Sony or Ikegami cameras (only), it may be convenient to use Grass Valley's SHED-6, a 1-RU frame that houses six SHED-BS units (Figure 4-8).



Fig. 4-8: SHED-6 Front and Rear Panels

Note that the SHED-6 requires 12VDC via a 4-pin XLR-M connector.

Connector pinout: Pin 1: Ground Pin 2: Unused
 Pin 3: Unused Pin 4: + 12 VDC

Mounting SHED units in 19" rack

The optionally available SHED-TRAY allows up to 8 SHED units to be mounted into a standard 19" rack. The tray itself takes up 2RU of rack space.

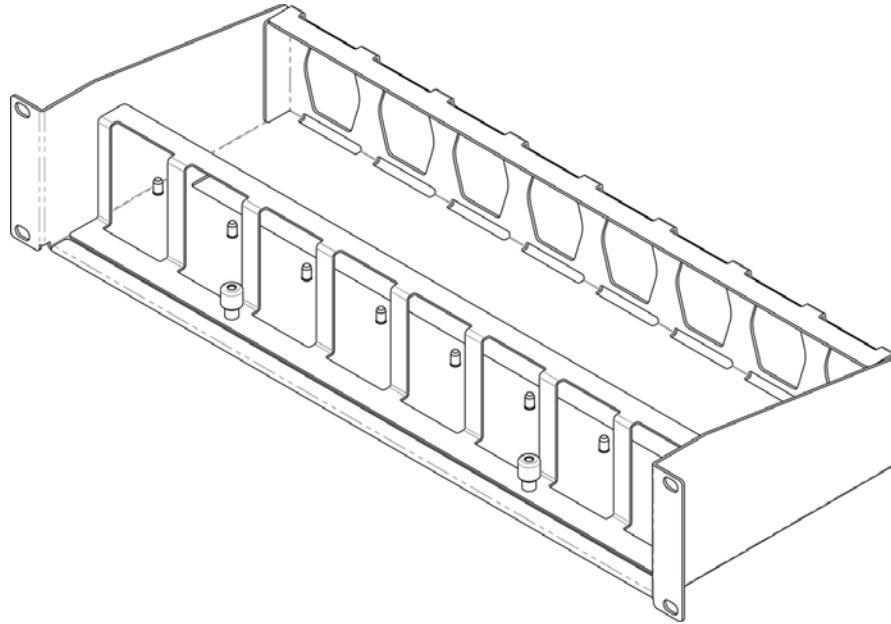


Fig. 4-9: Illustration of the SHED-TRAY for up to 8 SHED units

To mount SHED units into the SHED-TRAY follow these steps:

- Slide the SHED units into the tray. They can be placed in either orientation, depending on the direction of the signal conversion.

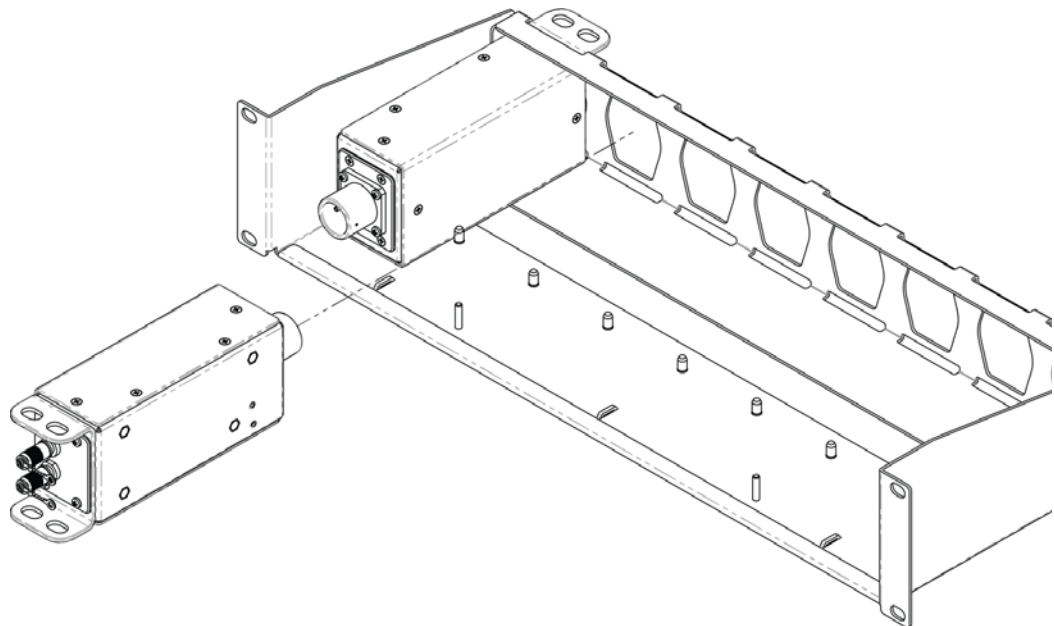


Fig. 4-10: Sliding in SHED units

- After placing the SHED units, mount the supplied cover plate and fix it with the two knurled screws at the bottom. The SHED units are now locked in place.

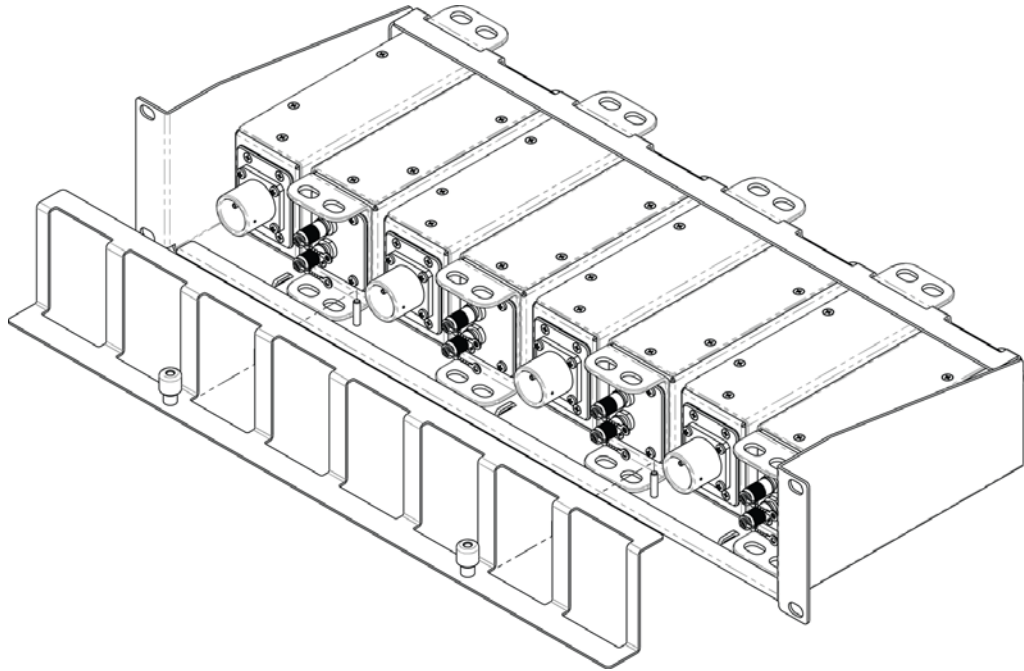
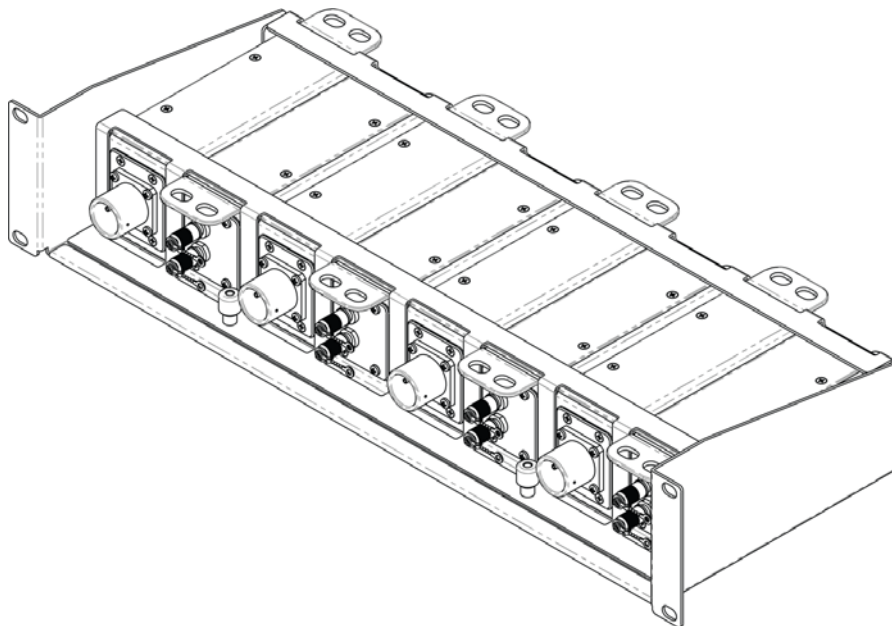


Fig. 4-11: Fixing SHED units with locking plate

- The tray with the attached SHED unit(s) can now be mounted into a standard 19" rack.



Fiber Connectors

Your system can be equipped with a variety of different fiber optic connectors, both for the Hybrid cable and for the two fibers that connect the system together.

Connector options are as shown below.

SHED-BS (Universal Base-Station end, stand-alone)

One End (choose 1)	Other End (choose 1)
UFP-304F	UFP-2ST
UFP-FIS	UFP-2SC
UFP-2STM	UFP-2SCA
	UFP-2LC
	UFP-NOC2
	UFP-MX2

SHED-C (Universal Camera end, stand-alone)

One End (choose 1)	Other End (choose 1)
UFP-304M	UFP-2ST
UFP-FISM	UFP-2SC
UFP-2STM	UFP-2SCA
	UFP-2LC
	UFP-NOC2
	UFP-MX2

5 Power Plus 2, HDX-Plus and SHED Components

This chapter describes the components included with the Power Plus 2, HDX-Plus and SHED system.

<i>Camera Power Adaptor (Power Plus 2)</i>	22
<i>SHED-BS</i>	25
<i>SHED-C</i>	28

Camera Power Adaptor (Power Plus 2)

The new generation HDX-Plus allows you to extend the distance between the CCU and camera through SMPTE hybrid fiber cable. In addition to the Power Plus 2, the HDX-Plus is compatible with Grass Valley's LDX range of cameras and many Sony DC powered cameras.

In addition, when HDX-Plus is used with Power Plus 2, it can be matched with any camera manufacturer when either an Anton Bauer or IDX power plate is available. Power Plus 2 replaces the on-board battery and provides up to 204 W over 3km (1.86 mi.) to the camera and accessories (Battery plate power draw must be limited to 170 W due to its inherent 10 A dc maximum current limit. Accessory power is 34 W max.). HDX-Plus is compatible with Grass Valley's SHED-BS device when SMPTE power is required to be eliminated and converted to a fiber-only connection from CCU to HDX-Plus.

The Power Plus 2 is connected to the HDX power supply using Hybrid fiber cable with SMPTE 304 connectors.

The distance between the HDX-Plus power adaptor and the camera can be up to 3 km (2.4 miles) using Hybrid fiber cable and the distance between the HDX-Plus power adaptor and Base Station can be up to 8 km (4.3 miles).

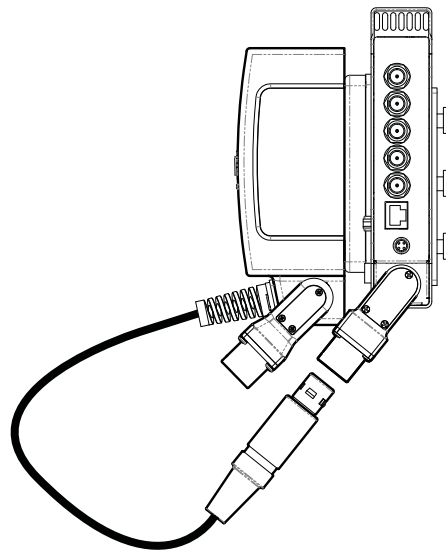


Fig. 5-1: Power Plus 2 mounted to CopperHead Camera Unit

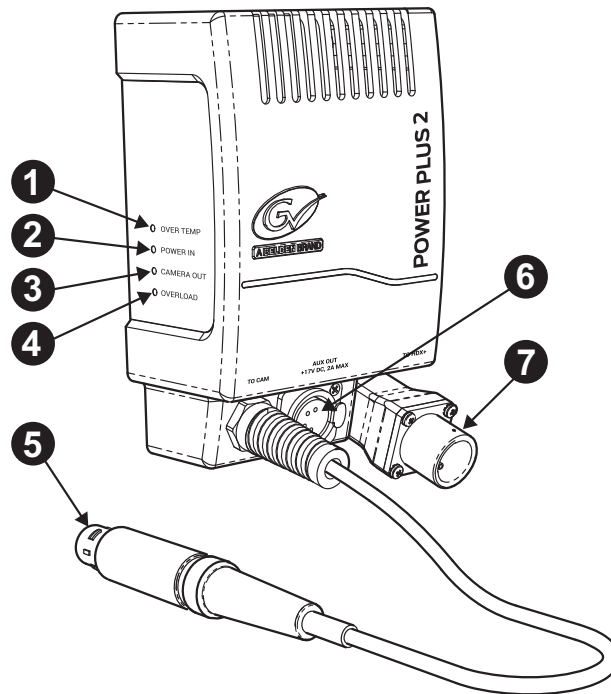
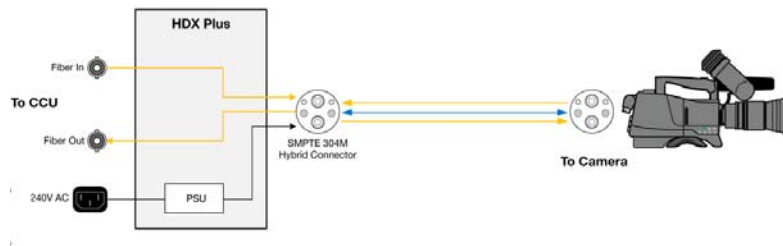


Fig. 5-2: Power Plus 2 LED Indicators and Connectors

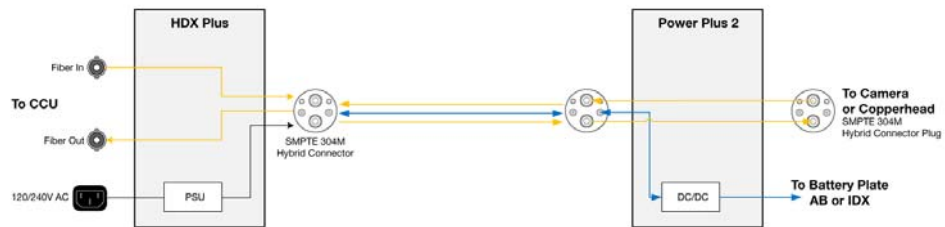
No.	Description	No.	Description
Power Plus 2 LED Indicators			
1	OVER TEMP: Internal temperature has exceeded the specified operating limits of internal components. Prolonged use at this temperature could result in premature component failure	3	CAMERA OUT: 17VDC is being supplied to the battery plate
2	POWER IN: Power is being received from the HDX-Plus power supply <ul style="list-style-type: none"> • Green - This LED lights green when power is received from the HDX-Plus. 	4	OVERLOAD: Output loading has exceeded the specified design limit. Unit will shut-down if excess load is not removed

No.	Description	No.	Description
Power Plus 2 Connectors			
5	Tactical Fiber Connector Dry fiber connector at the end of the dongle, matching the connector on the swivel of the mating CopperHead Camera Unit. Available with the following termination: <ul style="list-style-type: none"> • MX plug • OpticalCON Connector • SMPTE 304M plug 	7	SMPTE Swivel: Adjustable swivel for Hybrid Fiber receptacle arm.
6	AUX OUT +17VDC+, 2A MAX: 4-Pin XLR output connector for 12 Volt accessories		

Connection Diagram for HDX-Plus and camera, DV/LDX or Sony:



Connection Diagram for HDX-Plus, Power Plus 2 and Camera or Copperhead.



SHED-BS

Description

The SHED-BS is a universal model that can be configured manually, using four switches, to support the following cameras:

- SONY
- HITACHI HD5000
- IKEGAMI
- PANASONIC 3500
- PANASONIC 931C
- PANASONIC 3800

Before operating the SHED-BS interface, you must first configure the DIP switches for the appropriate Camera Control Unit (CCU).

The DIP switch positions for the cameras, as shown on the label, are as follows:

Camera	Pos 1	Pos 2	Pos 3	Pos 4
Sony	ON	ON	ON	OPT
Hitachi HD5000	OFF	ON	ON	ON
Ikegami	ON	OFF	ON	ON
Panasonic 3500	OFF	OFF	ON	ON
Panasonic 931C	ON	ON	OFF	ON
Panasonic 3800	OFF	ON	OFF	ON

- 1 With no cable connected, unscrew and open switch cover, configure switches per chart:

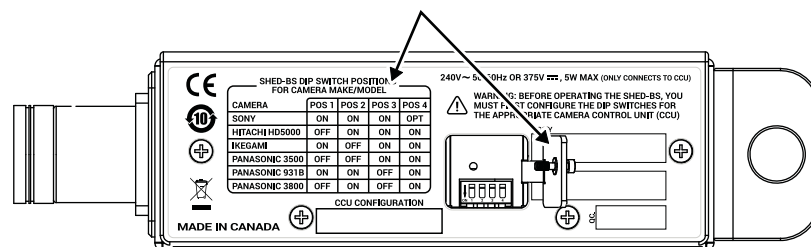


Fig. 5-3: Label on SHED-BS, showing DIP switch settings for CCU selection.

2 Set DIP switches for appropriate CCU:

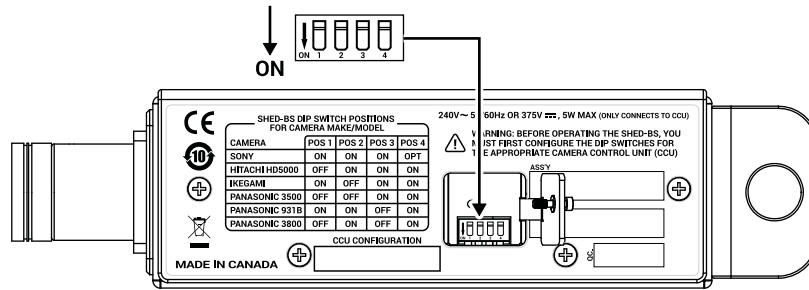


Fig. 5-4: Label on SHED-BS, showing DIP switch settings for CCU selection.

- 3 Close and screw down DIP switch cover.
- 4 Apply appropriate CCU configuration label:

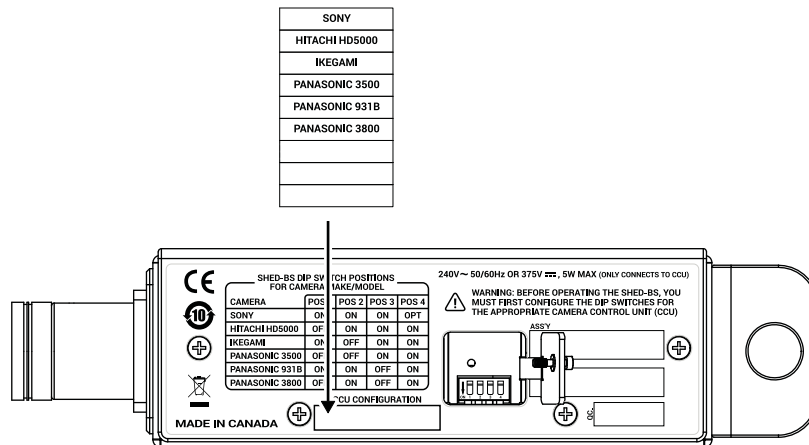


Fig. 5-5: Label on SHED-BS, showing DIP switch settings for CCU selection.

Connectors

The SHED-BS is equipped with ST connectors on the fiber-run side, and a LEMO connector on the CCU side, as shown in the figure. Note that other connectors are available as an option.



Fig. 5-6: SHED-BS fiber-run side - ST connectors



SHED-BS CCU side - LEMO connector

Deployment

A typical deployment of the SHED-BS and HDX-Plus to interface a remotely-powered camera to its CCU is shown in the diagram.

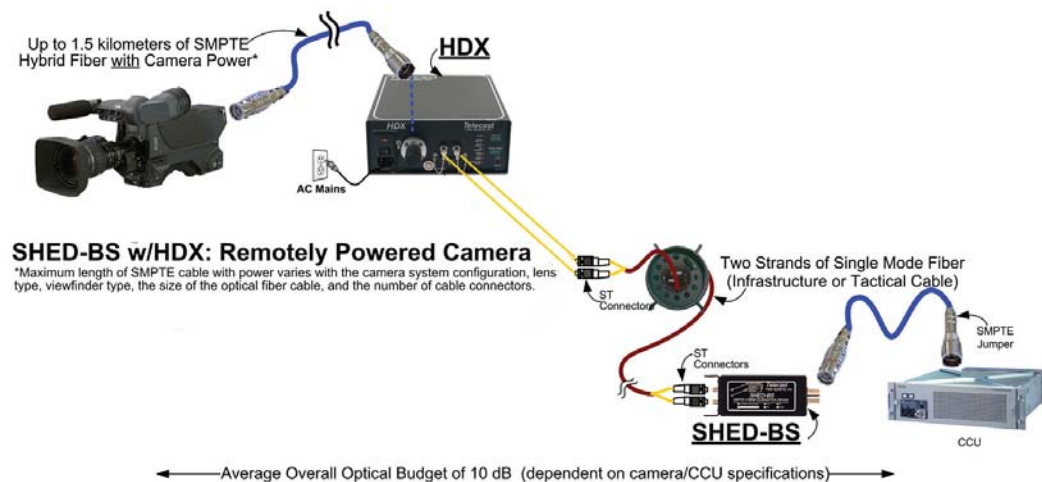


Fig. 5-7: SHED-BS and HDX Deployment Diagram

SHED-C

Application

The SHED-C is used in applications where power is applied to the camera locally. The SHED-SHED-C can operate in two modes:

- *Active - used only with the PANASONIC 3800 camera* - power is applied to the camera from the SHED-C, via a 12VDC external supply connected to the jack on the SHED-C case. The SHED-C generates the 10 VDC required by the camera, and sends it to the camera through an SMPTE Hybrid Fiber cable that can be up to 1.5 Km long.
- *Passive - used with all other cameras* - a local power supply is connected directly to the camera. The camera is connected to the SHED-C via an SMPTE Hybrid Fiber cable. A resistive load is placed on the Grey camera control wire of the SMPTE cable.

In both cases, the CCU-end of the fiber run uses a SHED-BS as the Fiber/CCU interface.

Connectors

The SHED-C is equipped with ST connectors on the fiber-run side, and a LEMO connector on the camera side, as shown in the figure. Note that other connectors are available as an option.



Fig. 5-8: SHED-C fiber-run side - ST connectors

SHED-C camera side - LEMO connector

The power jack for the 12 VDC supply for active-mode operation with a PANASONIC 3800 camera is located on the side of the case, as shown in the figure.

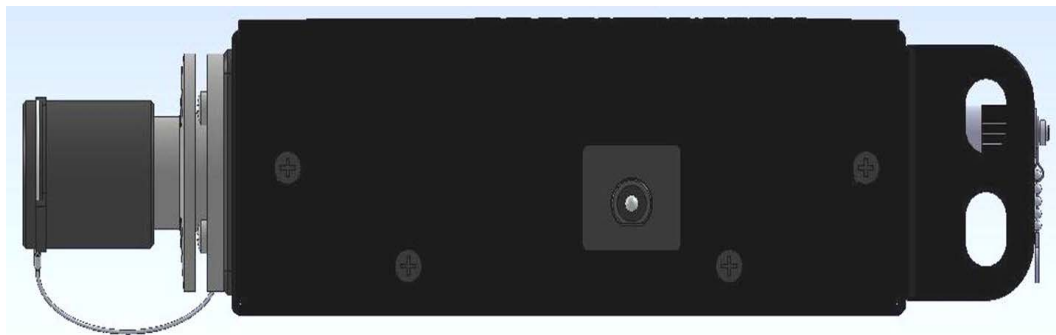


Fig. 5-9: SHED showing the 12 VDC input jack location

Deployment

The figure shows a typical deployment of a SHED-C and SHED-BS. In this case, the SHED-C is in passive mode, as a local power supply is connected directly to the camera.

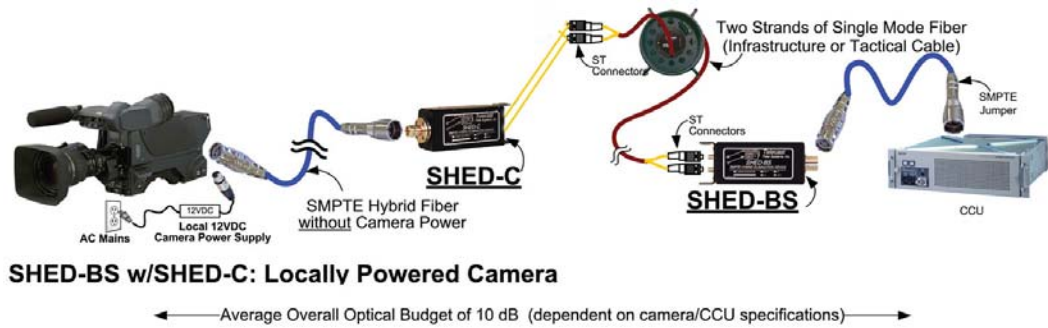


Fig. 5-10: SHED-C and SHED-BS Deployment Diagram

6 Specifications

Electro-Optical

Fiber Type Single Mode

(Note: HDX-Plus and Power Plus 2 are optically passive)

Compatible Cameras:

- Grass Valley: LDX Series and Focus 70 & 75
- Sony: Sony HDC-1K series, HDC-2K series and HDC-4300 to HDC-4K series

Power

HDX-Plus 100-240 VAC, 50- 60 Hz, 5.3-2.7A max or 450 VA max.

Power Plus 2 (only connects to HDX-Plus)..... 280-350 VDC, 240 W max.

SHED-BS (only connects to CCU)240 VAC or 375 VDC, 5 W max.

Mechanical/Environmental

Dimensions (WxHxD)

HDX-Plus209.55 x 76.20 x 406.40 mm (8.25 x 3 x 16 in.)

Power Plus 2108.71 x 167.64 x 63.50 mm (4.28 x 6.60 x 2.50 in.)

Weight

HDX-Plus2.72 kg (6.0 lbs.)

Power Plus 2 1.25 kg (2.75 lbs.)

Temperature range

HDX-Plus -25° to 55° C (13° to 131° F)

Power Plus 2 -25° to 50° C (13° to 131° F)

Humidity range

HDX-Plus 0 to 95% RH

Power Plus 2 0 to 95% RH



Grass Valley Technical Support

For technical assistance, contact our international support center, at 1-800-547-8949 (US and Canada) or +1 530 478 4148.

To obtain a local phone number for the support center nearest you, please consult the Contact Us section of Grass Valley's website (www.grassvalley.com).

An online form for e-mail contact is also available from the website.

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A


Parts and Accessories

This appendix describes the various parts and accessories for the Power Plus 2, HDX-Plus and SHED system.

<i>Electrical Connectors</i>	<i>page 6</i>
<i>Fiber Connectors</i>	<i>page 7</i>
<i>Power Plus 2 & HDX Plus/HDX Parts</i>	<i>page 9</i>

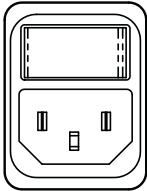
Electrical Connectors

Power Plus 2 Connectors

	Pin	Signal
Power Plus 2, 17 Vdc Accessories Output Connector		
 <p>Power Plus #8 XLR 4-pin Female (Ext View)</p>	1	GND
	2	Unused
	3	Unused
	4	+ Power 17 VDC

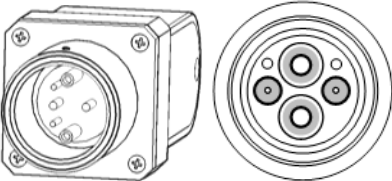


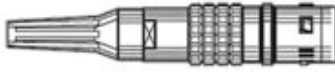
HDX Power Supply Connector

AC Power Input Connector

Item	Description
 <p>AC Power Interface IEC C14 receptacle</p>	Panel mounted AC Power Entry Module: 85 to 265 Vac.

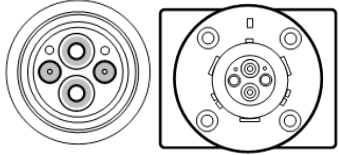
Fiber Connectors

Power Plus 2 Fiber Connectors

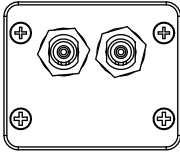
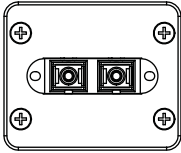
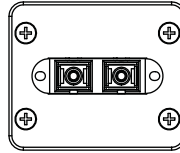
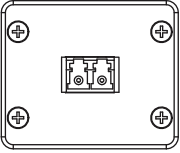
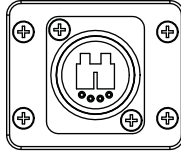
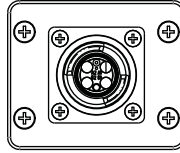
Power Plus 2 Powered Fiber Connector Options (swivel)	
	
SMPTE 304M Receptacle	
Power Plus 2 Unpowered Fiber Connector Options (dongle)	
	MX Plug
	OpticalCON Plug
	SMPTE 304M Plug

HDX-Plus Fiber Connectors

HDX-Plus Powered Fiber Connector options:

 <p>SMPTE 304M Panel Mounted Plug</p>		
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HDX-Plus Unpowered Fiber Connector options:

 <p>2STSM Receptacle</p>	 <p>2SC Receptacle</p>	 <p>2SCA Receptacle</p>
 <p>2LC Receptacle</p>	 <p>NOC2 Receptacle</p>	 <p>MX2 Receptacle</p>

Power Plus 2 & HDX Plus/HDX Parts

HDX-Plus

HDX-Plus with LEMO, for PP2, LDX, Focus and Sony Cameras (UFP added under MTO)

HDX-ENCL



Fig. 8-1: HDX-Plus waterproof enclosure

Power Plus 2

Model	Description
PWRPL2-304-AB	Power Plus 2 camera power adapter: SMPTE 304M dongle & SMPTE 304M receptacle on swivel, 17VDC Anton/Bauer mount. HDX Plus required.
PWRPL2-304-V	Power Plus 2 camera power adapter: SMPTE 304M dongle & SMPTE 304M receptacle on swivel, 17VDC IDX V mount. HDX Plus required.
PWRPL2-NEU-AB	Power Plus 2 camera power adapter: SMPTE Neutrik DualCon dongle & SMPTE 304M receptacle on swivel, 17VDC Anton/Bauer mount. HDX Plus required.
PWRPL2-NEU-V	Power Plus 2 camera power adapter: SMPTE Neutrik DualCon dongle & SMPTE 304M receptacle on swivel, 17VDC IDX V mount. HDX Plus required.

