

# Phantom Camera Use in an HYGE Sled Environment

Phantom cameras can be mounted on HYGE sleds to provide image capture and slow-motion playback of these dynamic events. Care needs to be taken when mounting a Phantom camera and when providing power to the camera system. Below are the issues that need to be addressed when using a Phantom camera in an HYGE sled environment.

## *Phantom Camera Mounting*

### Cameras

The Phantom cameras can be mounted in any orientation. It is the end users responsibility to supply adequate and stable camera mounts. Below are examples of camera mounts currently being used.



Example One



Example Two



Example Three

VRI recommends the mounting bracket shown in example two. This “Wrap-around” style of mounting bracket provides better stability and protection.



**CAUTION:** All four 10-32 and the center ¼-20 mounting screws must be used in an HYGE environment.

### Lenses

1” format c-mount lenses can be used with the V4.2 and V6.2 cameras. F-mount lenses can be used with the rest of the Phantom camera family.



If a F-mount lens is used, the lens needs to be secured to the camera body using a Phantom Lens cage assembly to prevent lens mount shearing.

## Cables

Each camera will need a Capture cable and Communications cable attached. These cables should be routed to the VRI Multi IOIOG Box to prevent pinching and cable whipping during an HYGE event.

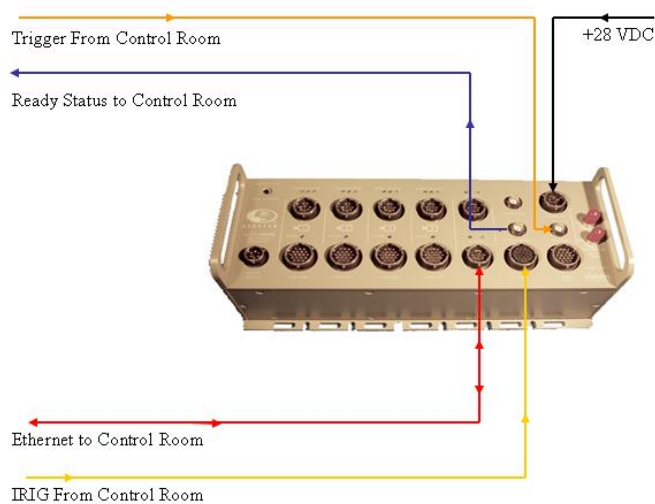
## Multi IOIOG Box

The Multi IOIOG Box may be mounted vertically or horizontally. The Multi IOIOI Box should be mounted in a location that provides protection from flying objects and provides easy access to the end users.

# *Control and Communications Connections*

## Multi IOIOG Box

- Up to four camera heads
- Common point for power, trigger and download
- Ready Status Output
- Download and communication
  - 1 GHz Ethernet
    - Working distance to 100 meters (330 feet)



On-board Connections (Ethernet)

# Control and Communications Connections

## Cables

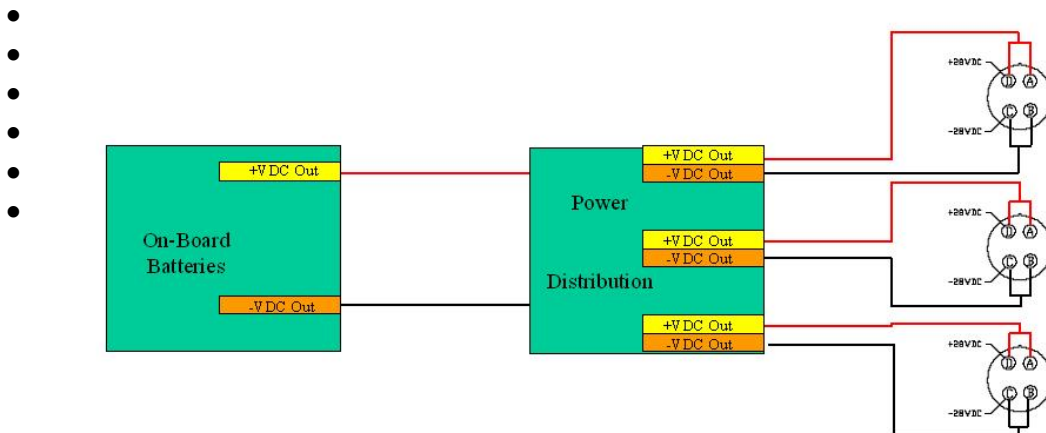
- Trigger and Ready Status should be RG-59 with high quality BNC connectors
- Ethernet cable should be CAT6. The Cat6 cable will be terminated in the Multi IOIOI Box Ethernet Port 5 or Port 6
- GOF cable is Armor shielded glass optical fiber (VRI p/n VRI-GF-X), cut to length per the customers specifications
- Power cable should be 18 gage, stranded copper from the on-board power distribution box

## Power

### Power Supplies

- Onboard
  - Typically a bank of rechargeable batteries.
  - Provided by the customer
  - Power Distribution Box is provided by customer and mounted to provide easy access by end users
  - Power is routed as shown below

On-Board Multi IOIOI Power Connections



+ VDC wires should be 18 gage and connected to pins A & D

- VDC wires should be 18 gage and connected to pins B & C

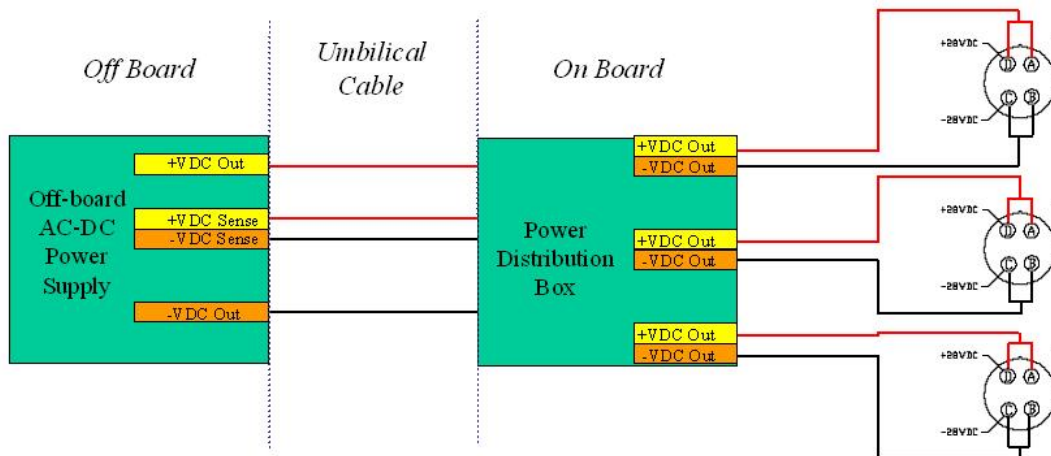
- Off-Board
  - Power supply to be provided by customer or system integrator
  - The following power supplies are being used and supply the necessary voltage and amperage:
    - ◆ Sorensen model DLM 40-15. One Multi IOIOG Box and four Phantom cameras
    - ◆ Sorensen model DCS 40-30E. Up to three Multi IOIOG boxes and twelve Phantom cameras



Voltage Sense Lines must be used to provide stable and noise free voltage to the Phantom cameras

- Power Distribution Box is provided by customer and mounted to provide easy access by end users
- Power is routed as shown below

### Off-Board Multi IOIOI Power Connections



+VDC wires from AC-DC power supply to Power Distribution box should be 16 Gage stranded copper

-VDC wires from AC-DC power supply to Power Distribution box should be 16 Gage stranded copper

+ VDC wires from Power Distribution Box to Multi IOIOI box should be 18 gage stranded copper and connected to pins A &D

- VDC wires from Power Distribution Box to Multi IOIOI box should be 18 gage stranded copper and connected to pins A &D

Sense Wires AC-DC power supply to Power Distribution box should be 20 or 22 Gage stranded copper

# *Communications, Control & Download*

## Computer

- Dell Dimension Desktop (VRI p/n VRI-DTNC)
  - Two Ethernet interface connections are recommended. One Ethernet Interface connections is dedicated to Phantom camera control with a static IP Address. The second Ethernet Interface connection is dedicated to the Local Area Network. This connection is typically built into the desktop motherboard.
- Ethernet Interface PCB (VRI p/n VRI-ETH-PCI)
  - Only one Ethernet Interface is needed for all Multi IOIOI Boxes used
  - Master Multi IOIOG is connected to the Ethernet Interface by high quality CAT6 cable