

User Manual

English

Camera Link Repeater



vieworks



Revision History

Version	Date	Description
1.0	2013-04-30	Initial Release
1.1	2013-06-21	Changed the maximum allowed cable length



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1 Precautions

General



- Do not drop, damage, disassemble, repair or alter the device.
- Do not let children touch the device without supervision.
- If any foreign substance is inserted inside of this product, turn off the power, pull the plug out of the socket and contact your nearest distributor.
- Do not operate with wet hands. The electric shock may occur.
- Do not store or operate the device in high temperatures. The device is designed to operate effectively within a specified temperature range (-5°C ~ 40°C). High temperatures can damage the device or shorten the life of the device.
- Do not use the device for any other purpose than specified.
- Contact your nearest distributor in case of trouble or problem.

Installation and Maintenance



- Do not install the device in a place subject to direct sun light, humidity, dust or soot.
- Do not place magnets near the product.
- Do not place the device next to heating equipments.
- Be careful not to let liquid like water, drinks or chemicals leak inside the device.
- Clean the device often to remove dust on it.
- In clearing, do not splash water on the device but wipe it out with smooth cloth or towel.

Power Supply



- It is highly recommended that you use power supplies rated 12V DC $\pm 10\%$ of voltage and over 1A of output current with KC, CE or other local certification (Vieworks Co., Ltd does NOT provide power supplies with the device).
- Applying incorrect power can damage the device. If the voltage applied to the device is greater or less than the device's nominal voltage, the device may be damaged or operate erratically. Please refer to [6.2 Specifications](#) for the device's nominal voltage.



2 Warranty

The warranty does not cover damage caused by:

- repair, modification or other work carried out on the device other than by authorized service personnel;
- incorrect or improper maintenance or failure to maintain the device;
- misuse or abusive use of the device;
- use of non-authorized/non-standard, defective or incompatible parts;
- incorrect operation or not following the operation instructions;
- adverse external conditions such as power surges and dips, thunderstorm activity, acts of God or circumstance beyond Vieworks' control;
- incorrect voltage or non-authorized electrical connections.

Do not open the housing of the device. The warranty becomes void if the housing is opened.

For information about the warranty, please contact your local dealer or factory representative.

3 KCC Statement

Type	Description
Class A (Broadcasting Communication Device for Office User)	This device obtained EMC registration for office use (Class A), and may be used in places other than home. Sellers and/or users need to take note of this.



4 Package Components

Package Components



VLink-Base

or



VLink-Full



5 Connecting VLink

The following instructions assume that you have installed a Camera Link frame grabber in your PC including related software. For more information, refer to your Camera Link frame grabber User Manual.

To connect VLink to your PC, follow the steps below:

1. Make sure whether a camera, Camera Link Frame Grabber and Camera Link cables are PoCL compliant or Non-PoCL compliant before installation.
 - Go on to step 2 if you are using a power supply.
 - Go on to step 3 if you are using a Power over Camera Link (PoCL) compliant products (camera, frame grabber and cables).

2. **If you are using a power supply:**
 - a. Plug one end of a Camera Link cable into the Camera Link connector on the camera and the other end of the cable into the Camera Link input connector (labeled with Camera) on the VLink.
 - b. Plug one end of a second Camera Link cable into the Camera Link output connector (labeled with PC) on the VLink and the other end of the cable into the Camera Link Frame Grabber in your PC.
 - c. Connect the plug of the power adapter to the power input receptacle on the camera and VLink respectively.
 - d. Verify all the cable connections are secure.
 - e. Plug the power adapters for the camera and VLink into working electrical outlets respectively.

3. **If you are using PoCL compliant products:**
 - a. Plug one end of a PoCL compliant Camera Link cable into the Camera Link connector on the camera and the other end of the cable into the Camera Link input connector (labeled with Camera) on the VLink.
 - b. Plug one end of a second PoCL compliant Camera Link cable into the Camera Link output connector (labeled with PC) on the VLink and the other end of the cable into the PoCL compliant Camera Link Frame Grabber in your PC.
 - c. Verify all the cable connections are secure.

6 Product Specifications

6.1 Overview

VLink Series is a cost-effective Camera Link repeater to dramatically increase the distance between a camera and frame grabber. It amplifies video signals that are attenuated on the Camera Link cable and doubles the available cable length through LVDS output connector equipped with a pre-emphasis feature. VLink Series allows not only to simplify the machine vision systems but also to save the cost with the least number of the repeaters and cables.

The VLink-Base model supports Camera Link Base configuration and the VLink-Full model supports Camera Link Base/Medium/Full configurations.

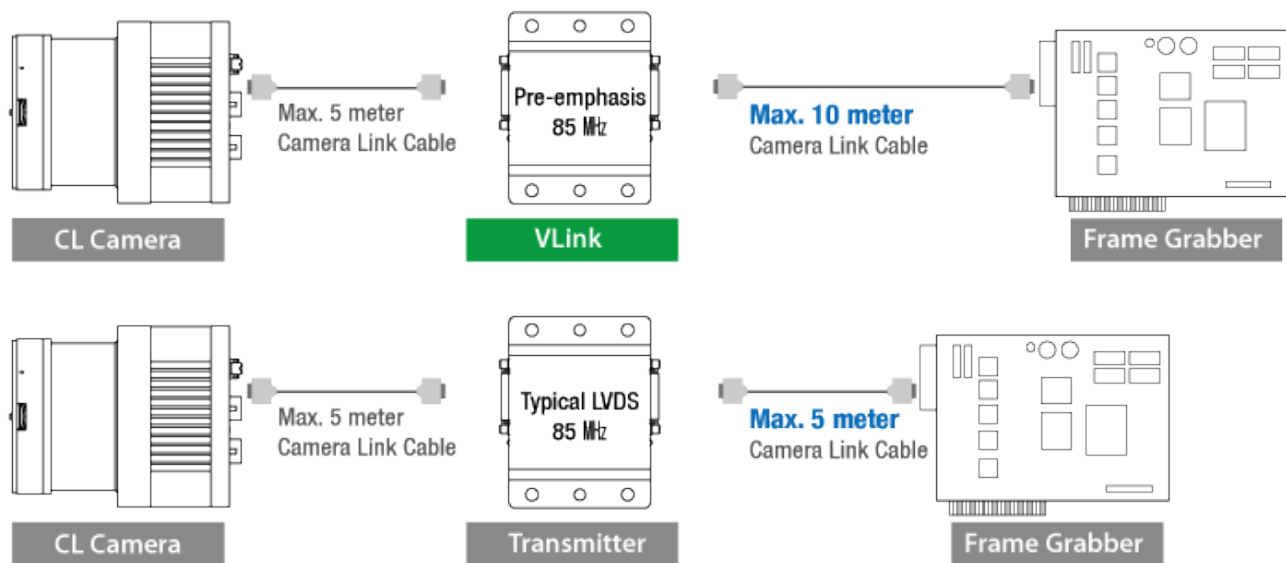


Figure 6.1 Pre-emphasis on VLink

Main Features

- Supports Camera Link Base/Medium/Full Configuration (VLink-Full)
- Uses standard Camera Link cable (not included)
- Supports camera clock rates up to 85 MHz
- 6 dB Pre-Emphasis Feature (doubles max distance between VLink and frame grabber)
- PoCL Compliant



6.2 Specifications

VLink Series technical specifications are as follows.

VLink Series	VLink-Base	VLink-Full
Camera Link Configuration	Camera Link Base	Camera Link Base/Medium/Full
Pixel Clock	20 – 85 MHz	
Connector Type	MDR 26 - PoCL compliant	
Operating Temperature	0°C – 50°C	
Power Requirements	8 – 24 V DC	
Power Supply	Power adapter (not included) or PoCL compliant	
Power Consumption	Typ. 2 W	Typ. 4 W
Weight	160 g	400 g
Dimension (W × H × L)	92 mm × 23 mm × 68 mm	92 mm × 23 mm × 87.5 mm

Table 6.1 Specifications of VLink

The maximum allowed cable length according to the camera's output pixel clock is as follows.

Configuration	Camera to VLink	VLink to VLink / Frame Grabber
40 MHz	10 m	20 m
60 MHz	8 m	15 m
85 MHz	5 m (4 m at 10 Tap)	10 m

Table 6.2 The Maximum Allowed Cable Length according to the Camera's Pixel Clock



The maximum allowed cable lengths in the Table 6.2 are measured using Camera Link Standard cables. The maximum allowed cable length can vary depending on the type or characteristics of the camera, frame grabber and cables.



6.3 Mechanical Specification

The VLink's dimensions in millimeters are as shown in the following figure.

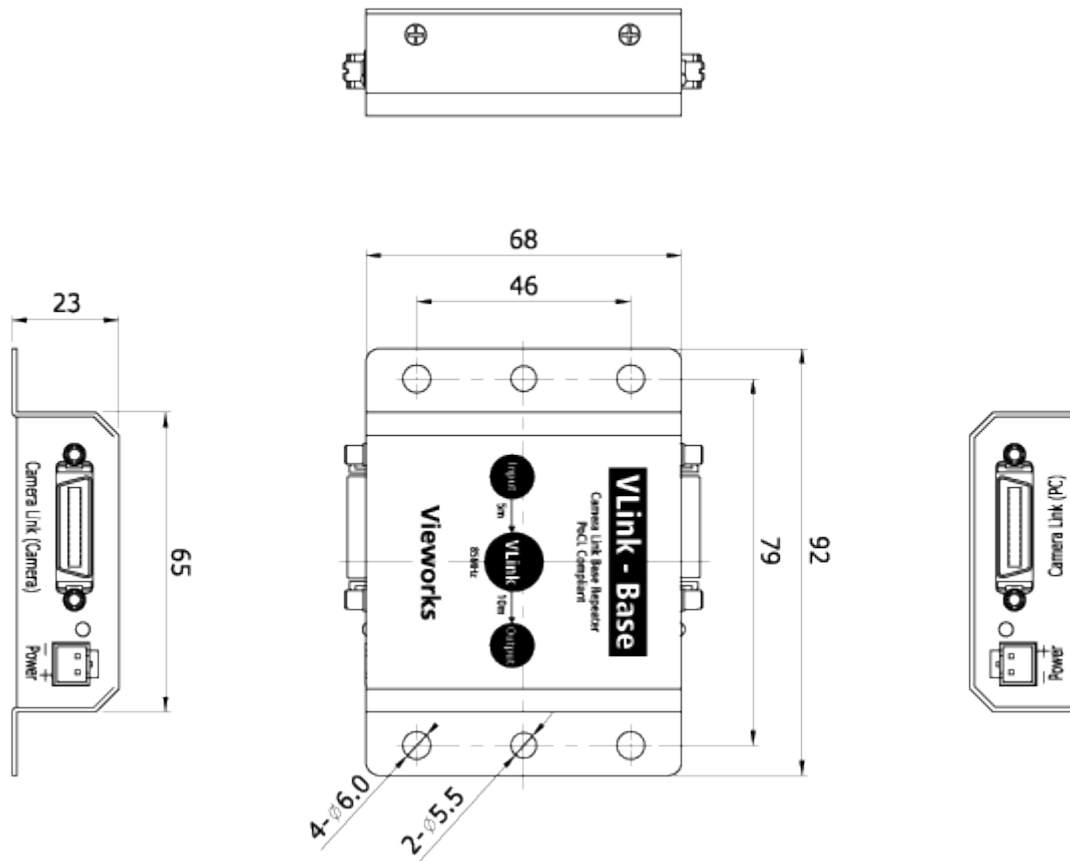


Figure 6.2 VLink-Base Mechanical Dimension

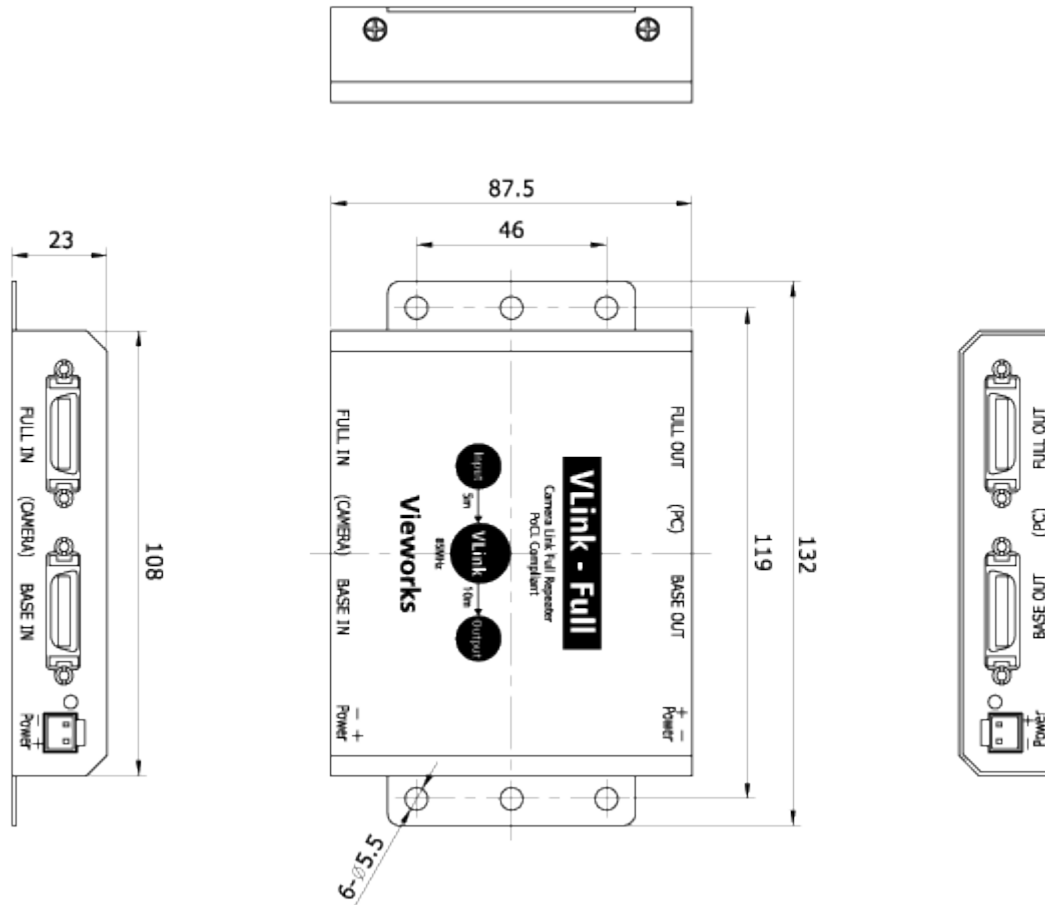


Figure 6.3 VLink-Full Mechanical Dimension

7 VLink Interface

7.1 General Description

As shown in the following figure, two types of connectors and one status indicator LED are located on the both sides of the VLink and have the functions as follows:

- ① 26 pin Camera Link Connector: controls video data transmission and the camera.
- ② Status LED: displays power status.
- ③ 2 pin Power Input Receptacle: supplies power to VLink.

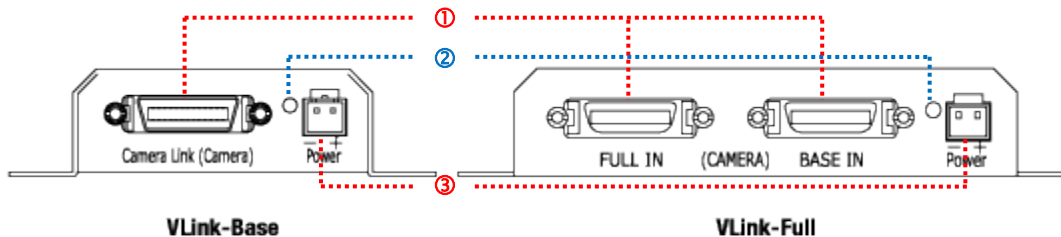


Figure 7.1 VLink Camera Side Panel

7.2 Power over Camera Link

You can supply power to VLink by using a power supply and/or PoCL compliant products.

If you supply power to VLink by using a power supply and PoCL compliant products simultaneously, VLink will use a power source that has a higher voltage level.

A wiring diagram for VLink's external power and PoCL is as follows.

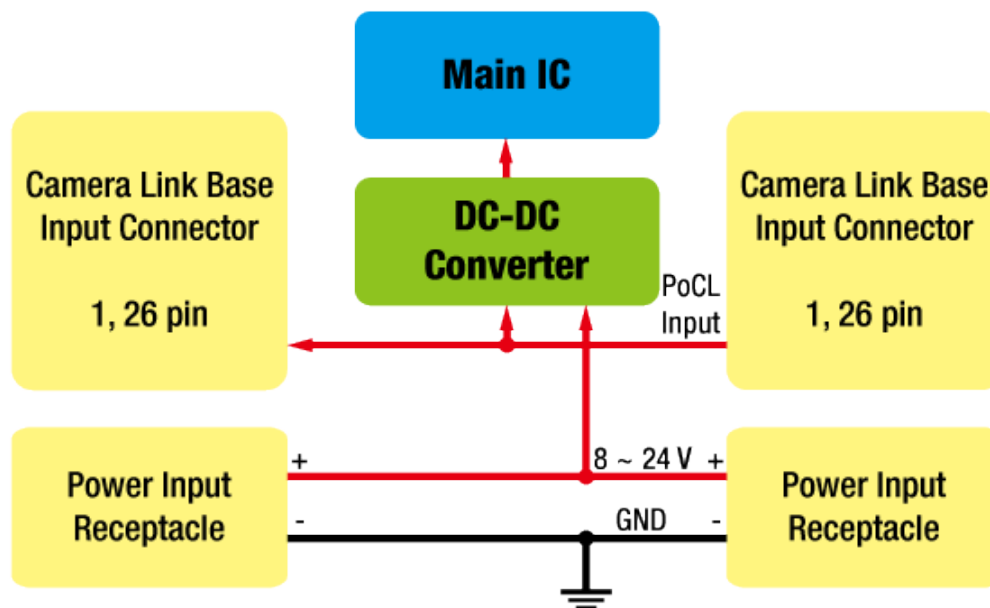


Figure 7.2 VLink External Power and PoCL Wiring Diagram



- Make sure that the camera, frame grabber and cables are specified for use with PoCL when you want to supply power to the camera and VLink via the PoCL connection.
- VLink Series offers two power input receptacles on the both sides (labeled with Camera and PC) of VLink for your convenience. These two receptacles have an electrical connection. You can connect the plug of the power adapter to the desired power input receptacle. At this time, you can also supply power to another camera or other device through another receptacle.

7.3 Power Input Receptacle

VLink's power input receptacle is a Molex 53259 2 pin connector. Pin arrangement and configuration are as follows:



Figure 7.3 Pin Arrangement of Power Input Receptacle

Pin Number	Signal	Type	Description
1	DC Ground	Input	DC Ground
2	+8 – 24 V DC	Input	DC Power Input

Table 7.1 Pin Configuration of Power Input Receptacle

The mating connector is a Molex 51067 2pin plug or the equivalent connectors. It is highly recommended that you use power supplies rated 8–12 V DC $\pm 10\%$ of voltage and over 1A of output current with KC, CE or other local certification (Vieworks Co., Ltd does NOT provide power supplies with the device).

Precaution for Power Input



If the VLink input voltage is greater than [specified input voltage range](#), damage to the device may result.



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