

## KEY FEATURES

- ❖ Fully supports medium or dual base Camera Link™ cameras/frame grabbers
- ❖ Provides 4Gb/s transport bandwidth – up to 6 tabs 8 bits (48 bits) and 66 MHz pixel clock (85MHz optional)
- ❖ Zero loss and transparent transport – no changes required for camera and/or frame grabber
- ❖ Two LC duplex fiber interface
- ❖ 8 opto-isolated GPIO channels (4 inputs and 4 outputs) for external trigger and control
- ❖ Two full duplex RS232 for remote instrument control
- ❖ Single 5V~24V DC power supply
- ❖ Locking AC/DC power adapter
- ❖ Transmission distance depending on your choice of fiber:
  - Multi-mode fiber – up to 250m
  - Single-mode fiber – up to 50km

## APPLICATIONS

- ❖ High precision security surveillance (e.g. border control, airport)
- ❖ Bar code reading and sorting (e.g. postal center, packaging)
- ❖ Vehicle license plate reading/recording (e.g. toll booth)
- ❖ Product inspection (e.g. automated production line)
- ❖ Port/Harbor cargo container management
- ❖ Railroad measurement/inspection
- ❖ Traffic surveillance/control
- ❖ Cameras placed in harsh environment (e.g. nuclear plant)
- ❖ Long haul image transmissions (e.g. bridge inspection)
- ❖ Other Machine Vision Applications

**PHRONTIER™**  
TECHNOLOGIES

## PHOX™ Camera Link Fiber Extender

### Medium/Dual Base Convertible

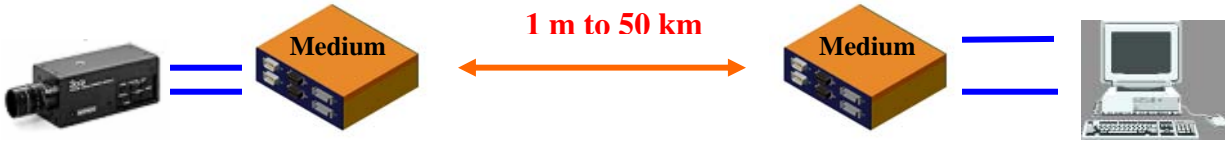
PHOX-MM-250  
PHOX-MM-A250  
PHOX-ML-10/20/40/50  
PHOX-ML-A10/A20/A40/A50



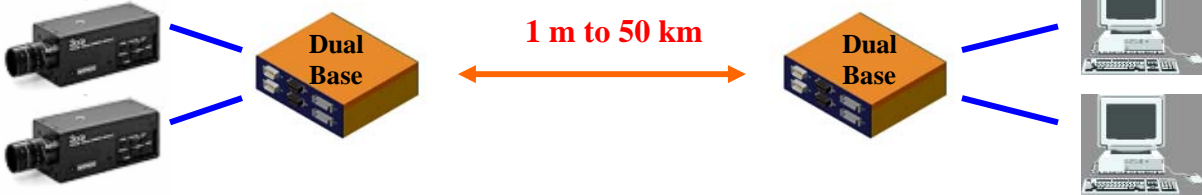
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**SYSTEM FLEXIBILITY**

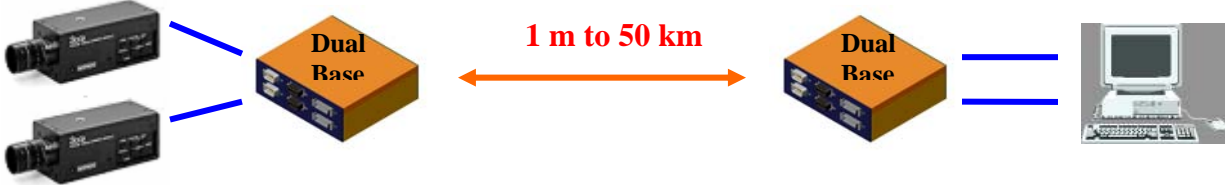
1 Medium CL Camera to 1 Medium Framegrabber



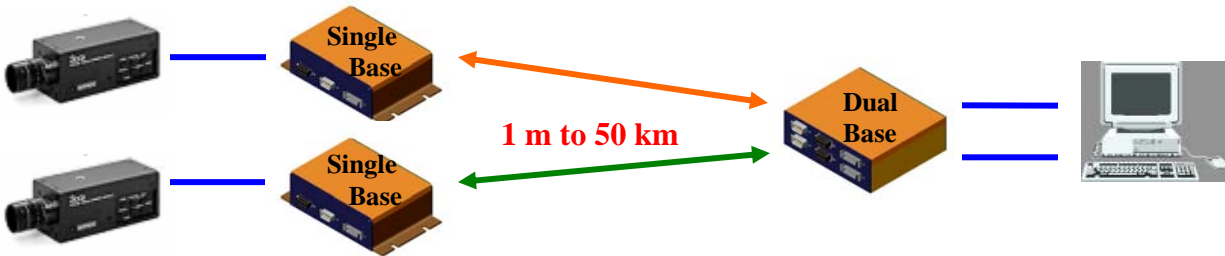
2 CL Cameras to 2 separate CL Base Framegrabbers



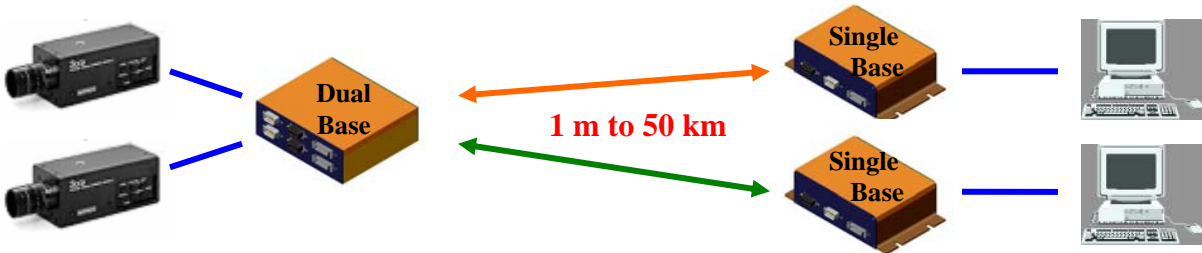
2 CL Cameras to 1 Dual Base Framegrabber



2 Remote CL Cameras to 1 Dual Base Framegrabber



2 CL Cameras to 2 Remote CL Framegrabbers

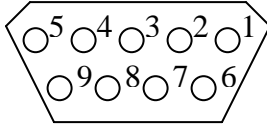


## TECHNICAL SPECIFICATIONS

<b>Camera Link Interface</b>				
Max Pixel Clock	66 MHz (85MHz optional)			
Max Data Width	48 bits			
Compatibility	Full Camera Link Medium/Dual Base/Base mode			
Connector Type	2x MDR26			
<b>Opto-isolated GPIO Interface</b>				
Number of I/O Channels	4 input and 4 output (all are opto-isolated)			
Operating Voltage	0~3.3V			
Max. Data Rate	1 Mbps			
Connector Type	2x DB9 male			
<b>RS232 Interface</b>				
Number of Data Channels	8 (2 sets of Rx/D Tx/D RTS CTS)			
Operating Voltage	Input: +/- 25V, Output: +/- 6V			
Max Data Rate	250 Kbps			
Connector Type	2x DB9 female			
<b>Optical Interface</b>				
Model #	Operating Wavelength	Optical Tx Output Power	Min. Optical Rx Power	Fiber Type
PHOX-MM-250	850 nm	-9.5 to -4 dBm	-17 dBm	62.5/125 $\mu$ m or 50/125 $\mu$ m multimode fiber
PHOX-ML-10	1310 nm	-10 to -3 dBm	-18 dBm	9/125 $\mu$ m single mode fiber
PHOX-ML-20	1310 nm	-5 to 0 dBm	-18 dBm	
PHOX-ML-40	1550 nm	-5 to 0 dBm	-18 dBm	
PHOX-ML-50	1550 nm	-2 to +3 dBm	-18 dBm	
Connector Type	LC duplex			
<b>General Electrical Specification</b>				
Input Voltage	DC 5 ~ 24 V			
Supply Current	600 mA @12V each module			
Typical Power Consumption	7.2 W each module			
Operating Temperature	0 ~ 50°C (non-condensing)			
Connector Type	Switchcraft TA3FX locking connector			
Weight (Approx. each module)	370 gram			

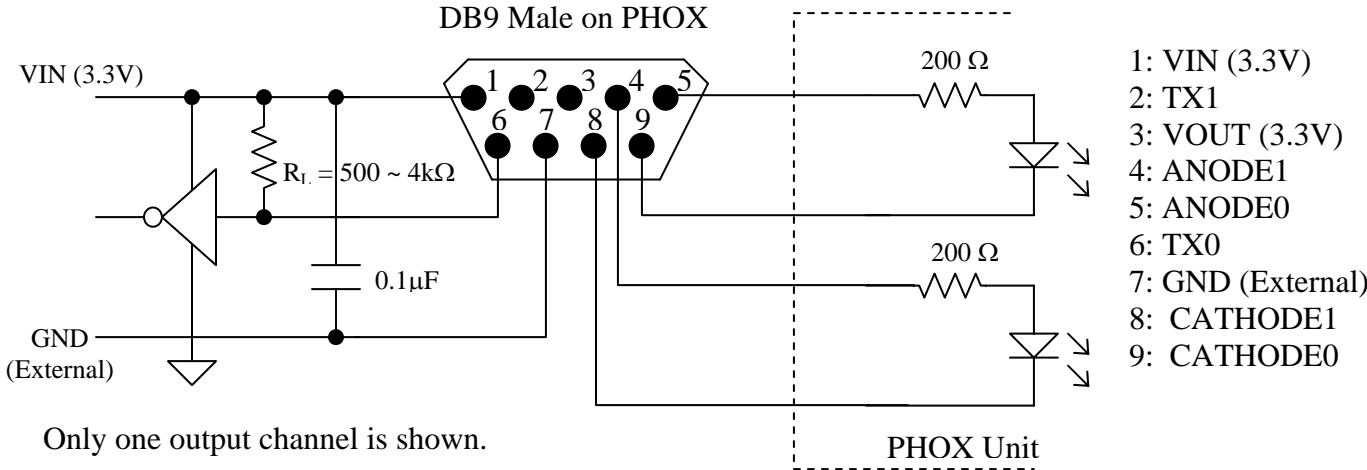
**RS232 PIN ASSIGNMENT (FEMALE DB9)**

DB9 Female on PHOX

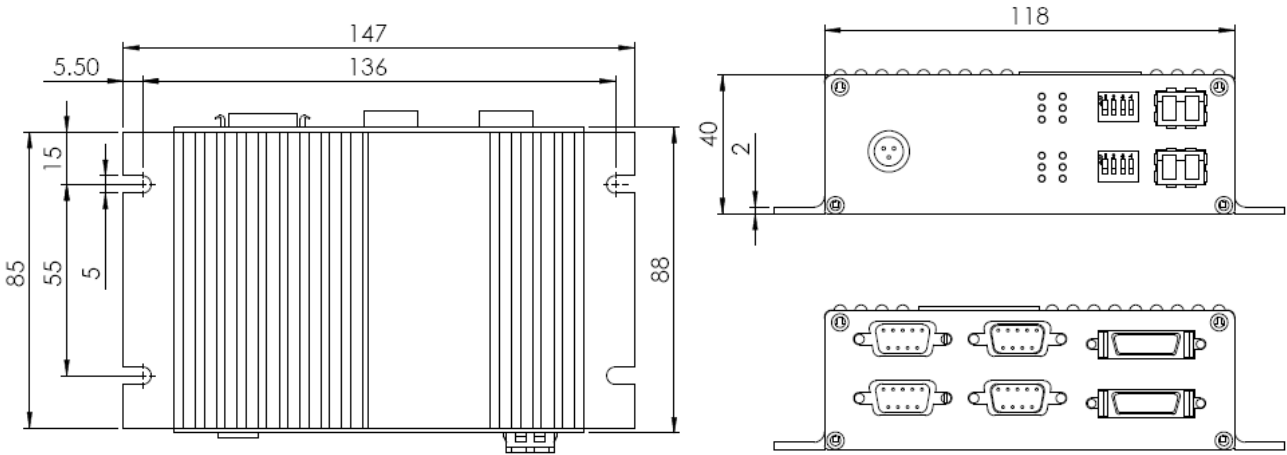


- 1: N/C
- 2: Data Tx
- 3: Data Rx
- 4: N/C
- 5: GND
- 6: N/C
- 7: CTS (Clear To Send)
- 8: RTS (Request To Send)
- 9: N/C

**GPIO PIN ASSIGNMENT (MALE DB9)**



**MECHANICAL INFORMATION (mm)**



**ORDERING INFORMATION**

Model #	Pixel Clock	Transport Distance	Check List
PHOX-MM-250	66 MHz max.	Up to 250 meters*	1x PHOX-CM 1x PHOX-FG 2x international AC/DC power adapters 12V DC output with locking plug 4x DB9 Male-Female 6ft cable (upon request) (LC duplex fiber cable not included)
PHOX-MM-A250	85 MHz max.	Up to 250 meters*	
PHOX-ML-xx	66 MHz max.	Up to 50 kilometers*	
PHOX-ML-Axx	85 MHz max.	Up to 50 kilometers*	

- Note: xx = Maximum transporting distance in kilometers. Available in 10KM, 20KM, 40KM, and 50KM.
- \* Distance depending on fiber type and system design. 250 m transmission distance for PHOX-MM is based on 50/125 MM fiber. Extra optical losses in the system will reduce the maximum transmission distance.



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