

Matrox Meteor-II/Camera Link

Camera Interface Application Note

HITACHI KP-F120CL

September 18, 2002

*Basics about the
camera*

*Mode of operations as
per Matrox Imaging (in
parentheses as per
camera manufacturer)*

*Basics about the
interface modes*

Camera Descriptions

- Effective resolution: $1392 \times 1040 \times 10\text{-bit}$ @ 30 fps.
- Camera Link BASE interface (single channel).
- Progressive scan.
- Internal sync.
- Internal or external exposure control.
- 28.8 MHz pixel clock rate.

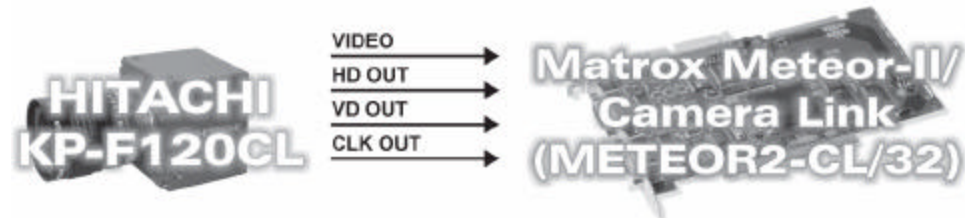
Interface Mode

- Continuous
- Asynchronous reset (Pulse width control)

Camera Interface Briefs

Mode 1: Continuous

- $1392 \times 1040 \times 10\text{-bit}$ @ 30 fps.
- Camera Link BASE interface (single channel).
- Progressive scan.
- Matrox Meteor-II/Camera Link receiving HD OUT, VD OUT, CLK OUT and video signal from camera.
- DCF used: [F120CLC.DCF](#)



Mode 2: Asynchronous reset (Pulse width control)

- $1392 \times 1040 \times 10\text{-bit}$.
- Camera Link BASE interface (single channel).
- Progressive scan.
- Matrox Meteor-II/Camera Link receiving external trigger signal.
- Matrox Meteor-II/Camera Link sending EXPOSURE1 (CAMERA CONTROL BIT1) signal to camera to initiate and control exposure time.
- Matrox Meteor-II/Camera Link receiving HD OUT, VD OUT, CLK OUT and video signal from camera.

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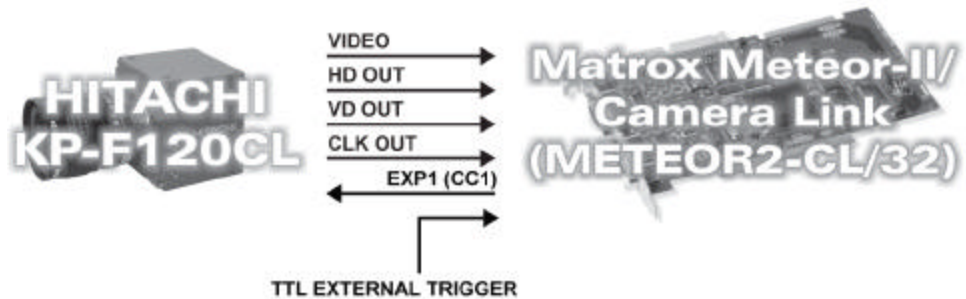
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Basics about the
interface modes

Camera Interface Briefs (cont.)

Mode 2: Asynchronous reset (Pulse width control)

- DCF used: [F120CLA.DCF](#)



Specifics about the
interface modes

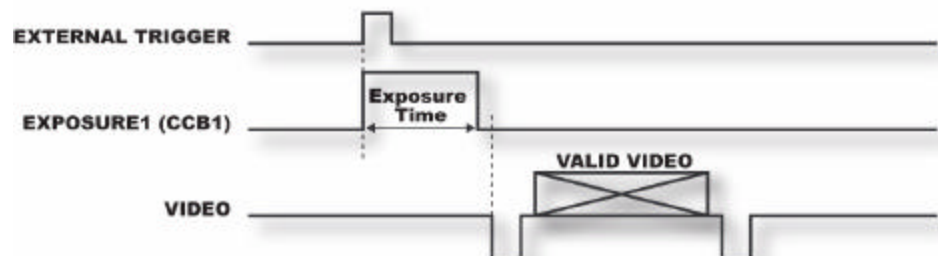
Camera Interface Details

Mode 1: Continuous

- **Frame Rate:** Matrox Meteor-II/Camera Link receives the continuous video from the camera at 30 frames per second (full pixel readout).
- **Exposure time:** Exposure time is determined by the shutter setting. Refer to the camera manual for more information.
- **Camera settings:** **Mode 1** switch on camera's rear must be set to normal mode '0'. Refer to the camera manual for additional information.

Mode 2: Asynchronous reset (Pulse width control)

- **Frame Rate:** The frame rate is determined by the frequency of the external trigger signal and the exposure time period. Maximum frame rate is equal to the Exposure1 period + frame readout period. **For this mode**, with an Exposure1 period of **6.25 ms** (default in DCF), the maximum possible frame rate equals **25 fps**.
- **Exposure time:** The width (rising edge to falling edge) of the EXPOSURE1 (CAMERA CONTROL BIT1) signal is the exposure time. The exposure time can be modified in the DCF using Matrox Intellicam or with the MIL MdigControl() function. Consult the respective manual for more information.
- **Camera settings:** **Mode 1** switch on camera's rear must be set to one trigger mode '1'. Refer to the camera manual for additional information.
- **Timing diagram:**



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*Cabling details for the
interface modes*

Cabling Requirements

Mode 1: Continuous

- **Cable and Connection:** Standard Camera Link cable.

Mode 2: Asynchronous reset (Pulse width control)

- **Cable and Connection:** Standard Camera Link.
- **External trigger:** External trigger should be connected to the OPTO TRIG input of the 9-pin connector (pins 7 and 2) on the Expanded I/O adapter bracket.

EXPANDED I/O BRACKET (9-pin connector)

				External Trigger Source	
OPTOTRIG +	07	←	SIGNAL	--	
OPTOTRIG -	02	←	GROUND	--	

The DCF(s) mentioned in this application note can be found on our FTP site (<ftp.matrox.com/pub/imaging/>). The information furnished by Matrox Electronics System, Ltd. is believed to be accurate and reliable. Please verify all interface connections with camera documentation or manual. Contact your local sales representative or Matrox Sales office or Matrox Imaging Applications at 514-822-6061 for assistance.

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MET2-CID-125

