

Matrox Meteor-II/Camera Link

Camera Interface Application Note

REDLAKE MASD ES-11000

February 14, 2005

*Basics about the
camera*

Camera Descriptions

- Effective resolution: $4008 \times 2672 \times 12\text{-bit}$ @ 4.6 fps.
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Internal sync.
- External or internal exposure control.
- 30 MHz pixel clock rate.

Interface Mode

- Continuous (Free run)
- Pseudo-continuous (Edge triggering with Pulse Width Controlled Integration)
- Asynchronous reset (Edge triggering with Pulse Width Controlled Integration)

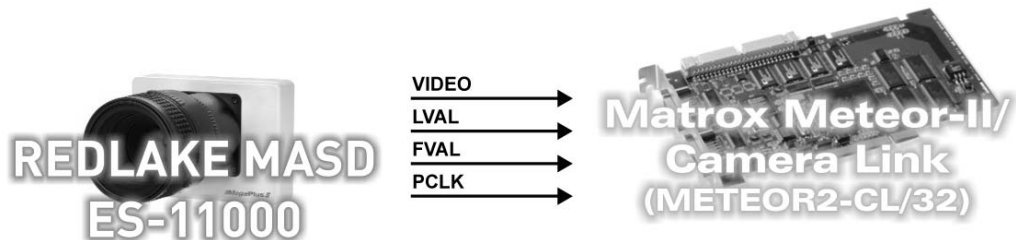
*Mode of operations as
per Matrox Imaging (in
parentheses as per
camera manufacturer)*

*Basics about the
interface modes*

Camera Interface Briefs

Mode 1: Continuous

- $4008 \times 2672 \times 12\text{-bit}$ @ 4.6 fps.
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Matrox Meteor-II/Camera Link receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [ES11000_4008x2672_12bitCon.DCF](#)



Mode 2: Pseudo-Continuous

- $4008 \times 2672 \times 12\text{-bit}$.
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Matrox Meteor-II/Camera Link sending TIMER1 OUT (CC1) signal to camera to initiate and control the exposure.
- Matrox Meteor-II/Camera Link receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [ES11000_4008x2672_12bitPcont.DCF](#)

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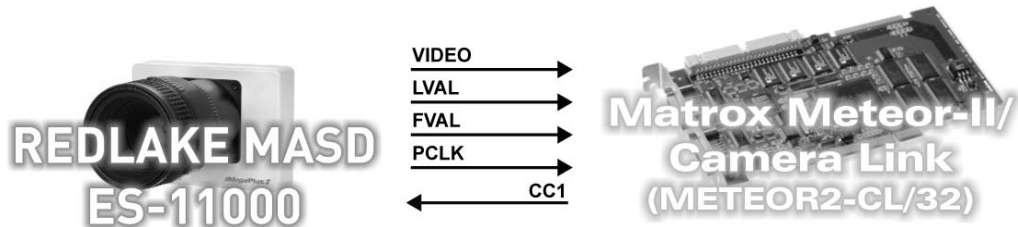
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Basics about the
interface modes

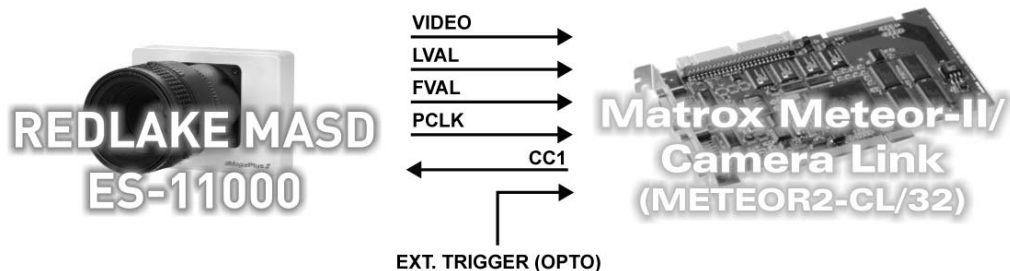
Camera Interface Briefs (cont.)

Mode 2: Pseudo-Continuous



Mode 3: Asynchronous reset

- 4008 × 2672 × 12-bit.
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Matrox Meteor-II/Camera Link receiving external trigger signal.
- Matrox Meteor-II/Camera Link sending TIMER1 OUT (CC1) signal to camera to initiate and control the exposure.
- Matrox Meteor-II/Camera Link receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [ES11000_4008x2672_12bitAsync.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 4.6 frames per second.
- **Exposure time:** Exposure time is set using the shutter speed setting in the Camera Configuration Utility. Refer to the camera manual for more information.
- **Camera control settings:** Using the MegaPlus II Central software, set the camera controls as follows:

Control	Setting
Output Data / Bit Depth	12 Bits
Mode selection	Trigger off – Free run

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Specifics about the
interface modes

Camera Interface Details (cont.)

Mode 2: Pseudo-Continuous

- **Frame rate:** The frame rate is determined by the frequency of the TIMER1 OUT (CC1) signal.
- **Exposure time:** The width (rising to falling edge) of the TIMER1 OUT (CC1) signal is the exposure time, which can be modified in the DCF using Matrox Intellicam or with the MIL MdigControl() function. Consult the respective manual for more information.
- **Camera control settings:** Using the MegaPlus II Central software, set the camera controls as follows:

Control	Setting
Output Data / Bit Depth	12 Bits
Mode selection	Mode 1, Integrate and Dump, Level controlled

Mode 3: Asynchronous Reset

- **Frame rate:** The frame rate is determined by the frequency of the external trigger signal.
- **Exposure time:** Refer to Mode 2: Pseudo-Continuous.
- **Camera Configuration:** Refer to Mode 2: Pseudo-Continuous.

Cabling Requirements

Modes 1 and 2: Continuous, Pseudo-continuous

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

Mode 3: Asynchronous reset

- **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	←	LINE SIGNAL	--
OPTOTRIG -	02	←	LINE GROUND	--

Cabling details for the
interface modes

Cabling details for the
interface modes

The DCF(s) mentioned in this application note can be found on our FTP site ([ftp.matrox.com/pub/imaging/](ftp://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.

Matrox Electronic Systems Ltd.

1055 St. Regis Blvd.
Dorval, Quebec H9P 2T4
Canada
Tel: (514) 685-2630
Fax: (514) 822-6273

MET2-CID-165

