

Matrox Meteor-II/Camera Link

Camera Interface Application Note

TOSHIBA TELI CS3970CL

September 16, 2005

*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: $1628 \times 1236 \times 12\text{-bit}$ @ 15 fps.
- Camera Link BASE interface.
- Progressive scan.
- Internal sync.
- Internal or external exposure control.
- 36 MHz pixel clock rate.

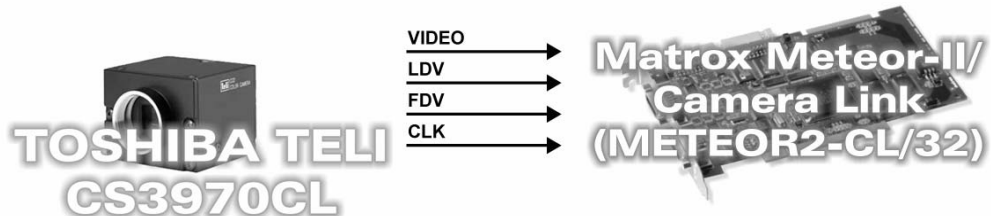
Interface Mode

- Continuous
- Asynchronous reset (Random Trigger Shutter, Pulse Width mode)

Camera Interface Briefs

Mode 1: Continuous

- Up to $1628 \times 1236 \times 12\text{-bit}$ @ 15 fps.
- Camera Link BASE interface.
- Progressive scan.
- Matrox Meteor-II/Camera Link receiving LVAL, FVAL, CLK and video signal from camera.
- DCF used: [CS3970CL1628x1236_12bitCon.DCF](#) (Full scan, 15 FPS)
- DCF used: [CS3970CL1628x552_12bitCon.DCF](#) (Partial scan, 30 FPS)
- DCF used: [CS3970CL1628x309_12bitCon.DCF](#) (High Speed Draft Readout, 48 FPS)



Mode 2: Asynchronous reset

- Up to $1628 \times 1236 \times 12\text{-bit}$.
 - Camera Link BASE interface.
 - Progressive scan.
 - Matrox Meteor-II/Camera Link receiving external trigger signal.
 - Matrox Meteor-II/Camera Link sending TIMER1 (CC1) signal to camera to initiate and control exposure time.
 - Matrox Meteor-II/Camera Link receiving LVAL, FVAL, CLK and video signal from camera.
 - DCF used: [CS3970CL1628x1236_12bitAsync.DCF](#) (Full scan)
 - DCF used: [CS3970CL1628x552_12bitAsync.DCF](#) (Partial scan)
 - DCF used: [CS3970CL1628x309_12bitAsync.DCF](#) (High Speed Draft Readout)
- Continued...

Matrox Meteor-II/Camera Link

Camera Interface Application Note

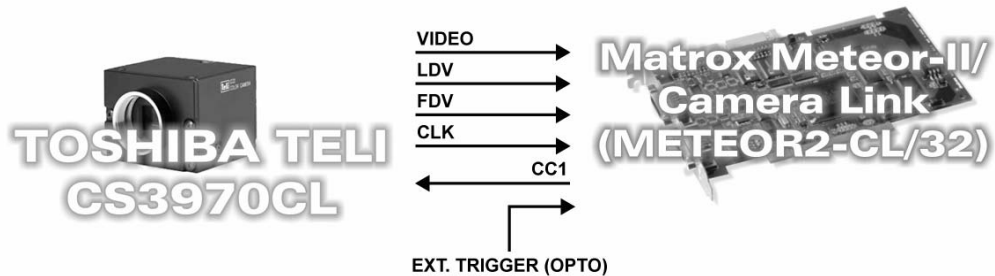
TOSHIBA TELI CS3970CL

September 16, 2005

Basics about the
interface modes

Camera Interface Briefs (cont.)

Mode 2: Asynchronous reset



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 **15** frames per second (full resolution).
- **Exposure time:** Exposure time is determined by the camera shutter setting. Refer to the camera manual for more information.
- **Camera settings:** Camera mode is set using the camera communication software. Refer to the camera manual for additional information.

Mode 2: Asynchronous reset

- **Frame Rate:** The frame rate is determined by the frequency of the external trigger signal and the exposure time period.
- **Exposure time:** The width (rising edge to falling edge) of the TIMER1 (CC1) 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:** Camera mode (Random Trigger Shutter) is set using the camera communication software, refer to the camera manual for additional information.

Matrox Meteor-II/Camera Link

Camera Interface Application Note

TOSHIBA TELI CS3970CL

September 16, 2005

*Cabling details for the
interface modes*

Cabling Requirements

Mode 1: Continuous

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

Mode 2: 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	←	SIGNAL --
OPTOTRIG -	02	←	GROUND --

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-167

