

Matrox Meteor-II/Multi-Channel

Camera Interface Application Note

PULNiX TMC-6700

January 9, 2003

Basics about the
camera

Camera Descriptions

- Effective resolution: $640 \times 480 \times 24\text{-bit}$ @ up to 60 fps.
- RGB analog or Camera Link digital video output.
- Progressive scan.
- Internal or external sync. (camera master).
- Internal or external exposure control.
- 25.49 MHz pixel clock rate.

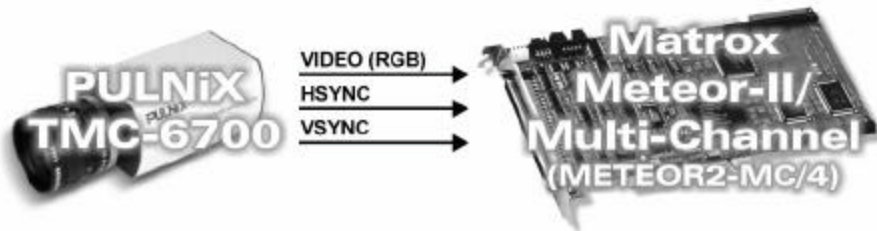
Interface Modes

- Continuous
- Asynchronous reset

Camera Interface Briefs

Mode 1: Continuous

- $640 \times 480 \times 24\text{-bit}$ @ up to 60 fps.
- RGB analog video.
- Progressive scan.
- Matrox Meteor-II/Multi-Channel receiving HSYNC (HD SYNC), VSYNC (VD SYNC) and video signals from camera.
- DCF used: [TMC6700C.DCF](#) (requires MIL 7.0 or higher)



Mode 2: Asynchronous Reset

- $640 \times 480 \times 24\text{-bit}$.
- RGB analog video.
- Progressive Scan.
- Matrox Meteor-II/Multi-Channel receiving external trigger signal.
- Matrox Meteor-II/Multi-Channel sending EXPOSURE2 (VINIT) signal to camera to initiate and control exposure time.
- Matrox Meteor-II/Multi-Channel receiving HSYNC (HD SYNC), VSYNC (VD SYNC) and video signals from camera.

Continued...

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

Basics about the
interface modes

Matrox Meteor-II/Multi-Channel Camera Interface Application Note

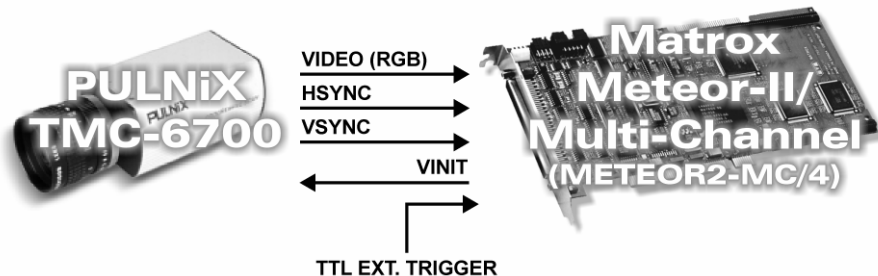
PULNiX TMC-6700

January 9, 2003

Basics about the
interface modes

Camera Interface Briefs

- DCF used: [TMC6700A.DCF](#) (requires MIL 7.0 or higher)



Specifics about the
interface modes

Camera Interface Details

Modes 1: Continuous

- **Frame Rate:** Matrox Meteor-II/Multi-Channel receives the continuous video (and separate digital HSYNC and VSYNC) from the camera at 60 frames per second.
- **Exposure time:** Exposure time is inversely proportionate to the frame rate (no shutter) or determined by the shutter setting. Refer to the camera manual for more information.
- **Camera switch settings:** Refer to the camera manual for additional information. Switches for this mode should be set as follows:

Switch	Setting
Shutter Mode	MANUAL
Shutter Switch	0

Modes 2: Asynchronous Reset

- **Frame rate:** The frame rate is determined by the frequency of the external trigger signal, with a maximum possible rate of up to 60 fps.
- **Exposure time:** The low level pulse period of the EXPOSURE2 (VINIT) signal is the exposure time. The default exposure time is equal to **6.4 ms**. 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.
- **Minimum exposure width:** minimum EXPOSURE2 (TRIGGER) pulse width is equal to **508 ms**.
- **Camera switch settings:** Refer to the camera manual for additional information. Switches for this mode should be set as follows:

Switch	Setting
Shutter Mode	ASYN
Shutter Switch	9

Continued...

Matrox Meteor-II/Multi-Channel

Camera Interface Application Note

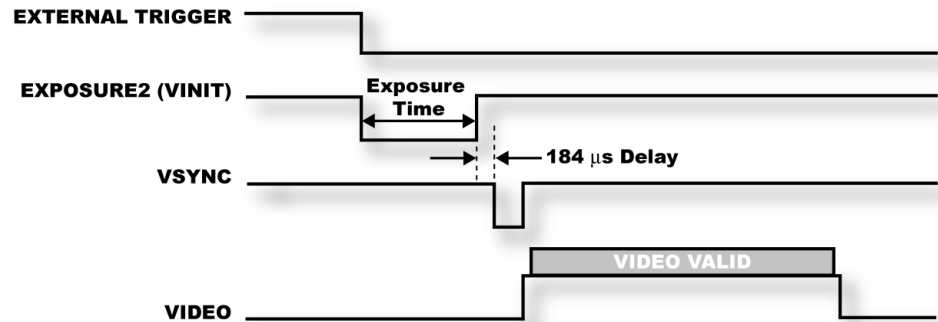
PULNiX TMC-6700

January 9, 2003

Specifics about the
interface modes

Camera Interface Details (continued)

Timing Diagram:



Cabling details for the
interface modes

Cabling Requirements

Mode 1: Continuous

- **Cable:** DH44-TO-8BNC/O (open ended) cable required for video, synchronization and control signals.
- **Connection:** Connections between the 15-pin connector (**SVGA OUTPUT**) of the camera and the 44-pin connector of the Matrox Meteor-II/Multi-Channel are as follows:

METEOR2-MC/4 (44-pin connector)

Pin name	Pin no.
VID1_IN1	15
GROUND	30
VID1_IN2	44
GROUND	29
VID1_IN3	13
GROUND	14
HSYNC_TTL	02
GROUND	03
VSYNC_TTL	32
GROUND	31

PULNiX TMC-1000 (15-pin connector)

Pin name	Pin no.
RED	01
RED GND	06
GREEN	02
GREEN GND	07
BLUE	03
BLUE GND	08
HSYNC	13
VD IN GROUND	10
VSYNC	14
VSYNC GND	11

Mode 2: Asynchronous Reset

- **Cable:** DH44-TO-8BNC/O (open ended) cable required for video, synchronization and control signals.
- **External trigger:** TTL external trigger source should be connected to the TTL trigger input (gray BNC) of the DH44-TO-8BNC/O (open ended) cable.

Continued...

Matrox Meteor-II/Multi-Channel Camera Interface Application Note

PULNiX TMC-6700

January 9, 2003

*Cabling details for the
interface modes*

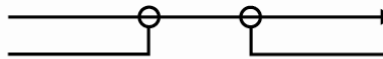
Cabling Requirements (Continued)

Mode 2: Asynchronous Reset

- **Connection:** Connections between the 12-pin connector of the camera and the 44-pin connector of the Matrox Meteor-II/Multi-Channel are as in Mode 1: Continuous along with the following:

**METEOR2-MC/4
(44-pin connector)**

Pin name	Pin no.
EXPS(2)	23
GROUND	25



**PULNiX TMC-1000
(12-pin connector)**

Pin name	Pin no.
VINIT	06
GND	05

The DCF(s) mentioned in this application note can be found on the MIL CD or our FTP site ([ftp.matrox.com](ftp:ftp.matrox.com)). 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.

Corporate headquarters:

Canada and U.S.A.

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

