

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

CIS VCC-8350

August 12, 2002

Basics about the
camera

Camera Descriptions

- Effective resolution: $648 \times 490 \times 8\text{-bit}$ @ 60 fps.
- RGB analog video output.
- Progressive scan.
- Internal or external sync.
- External exposure control.
- 24.54 MHz pixel clock rate.

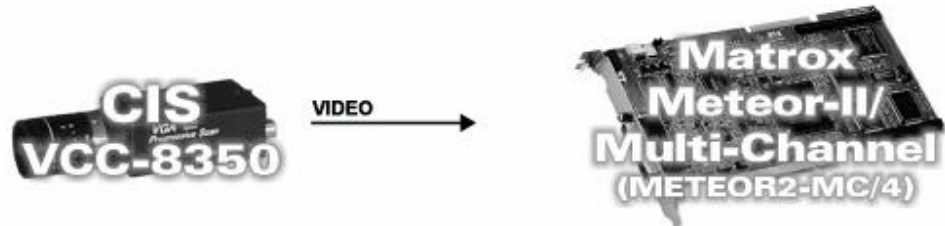
Interface Modes

- Continuous
- Asynchronous Reset (Restart/Reset mode)

Camera Interface Briefs

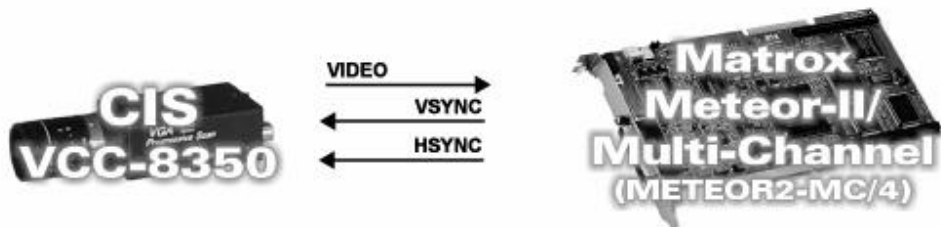
Mode 1: Continuous (Meteor-II/Multi-Channel Slave)

- $648 \times 490 \times 8\text{-bit}$ @ 60 fps.
- RGB analog video.
- Progressive scan.
- Matrox Meteor-II/Multi-Channel receiving video (with composite sync) signal from camera.
- DCF used: [VCC83501.DCF](#)



Mode 2: Continuous (Meteor-II/Multi-Channel Master)

- $648 \times 490 \times 8\text{-bit}$ @ 60 fps.
- RGB analog video.
- Progressive scan.
- Matrox Meteor-II/Multi-Channel sending HSYNC (HD INPUT), VSYNC (VD INPUT) to camera.
- Matrox Meteor-II/Multi-Channel receiving video signal from camera.
- DCF used: [VCC83502.DCF](#)



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

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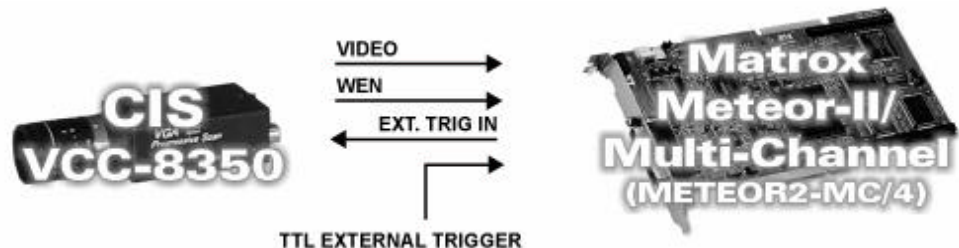
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Basics about the
interface modes

Camera Interface Briefs (cont.)

Mode 3: Asynchronous Reset (Restart/Reset mode)

- $648 \times 490 \times 8$ -bit.
- RGB analog video.
- Progressive scan.
- Matrox Meteor-II/Multi-Channel receiving TTL external trigger signal.
- Matrox Meteor-II/Multi-Channel sending EXPOSURE1 (EXT.TRIG IN) signal to camera to initiate exposure time.
- Matrox Meteor-II/Multi-Channel receiving VSYNC (WEN OUT) and video signal from camera.
- DCF used: [VCC83503.DCF](#)



Specifics about the
interface modes

Camera Interface Details

Mode 1 and 2: Continuous

- **Frame Rate:** Matrox Meteor-II/Multi-Channel receives the continuous video from the camera at 60 frames per second respectively.
- **Exposure time:** Exposure time 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 modes 1 and 2 should be set on as follows:

Internal Switch Settings								
Switch	SW4-1	SW4-2	SW4-3	SW4-4	SW4-5	SW4-6	SW4-7	SW4-8
Setting	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF

External Switch Settings	
Parameter	Setting
75 Ω	ON
HD/VD	OUT (Mode 1), IN (Mode 2)

Mode 3: Asynchronous Reset (Restart/Reset mode)

- **Frame rate:** The frame rate is determined by the frequency of the external trigger signal, up to a maximum of 60 fps.

Continued...

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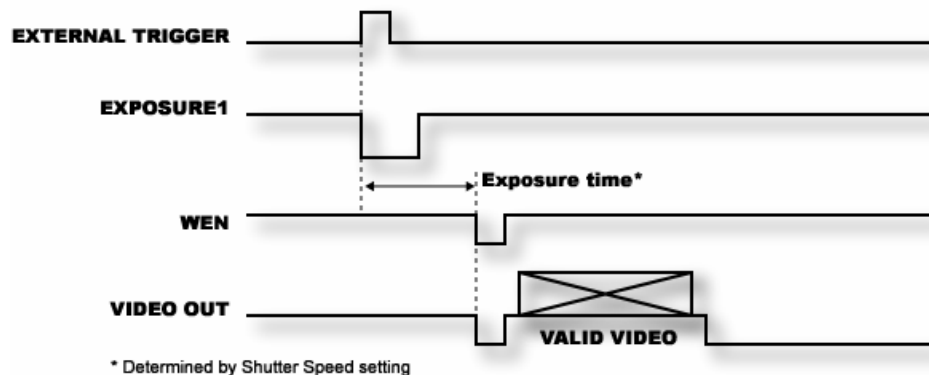
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Specifics about the
interface modes

Camera Interface Details (cont.)

Mode 3: Asynchronous Reset (Restart/Reset mode)

- **Exposure time:** The shutter speed of the camera determines the exposure time. The exposure time can be modified on the camera via the shutter setting, consult the camera manual for more information.
- **Timing diagram:**



- **Camera switch settings:** Refer to the camera manual for additional information. Switches for this mode should be set on the camera rear as follows:

Internal Switch Settings								
Switch	SW4-1	SW4-2	SW4-3	SW4-4	SW4-5	SW4-6	SW4-7	SW4-8
Setting	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF

External Switch Settings	
Parameter	Setting
75 Ω	ON
HD/VD	OUT

Cabling Requirements

Mode 1: Continuous (Meteor-II/Multi-Channel Slave)

- **Cable:** DBHD44-TO-8BNC/O (open ended) cable required for video signal.
- **Connection:** Connections between the 9-pin connector of the camera and the 44-pin connector of the Matrox Meteor-II/Multi-Channel are as follows:

METEOR2-MC/4 (44-pin connector)			CIS VCC-8350 (9-pin connector)	
Pin name	Pin no.		Pin name	Pin no.
VID1_IN	15	←	RED	03
VID2_IN	44	←	GREEN	04
VID3_IN	13	←	BLUE	05
GROUND	30	--	GROUND	08

Cabling details for the
interface modes

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Cabling details for the
interface modes

Cabling Requirements (cont.)

Mode 1: Continuous (Meteor-II/Multi-Channel Slave)

- **Power supply:** Connections for all modes are as follows:

POWER SUPPLY

CIS VCC-8350

(12-pin connector)

Pin name	Pin no.		Pin name	Pin no.
DC OUT (+12 V)	--	--	+ 12 V	02
GROUND	--	--	GROUND	01

Mode 2: Continuous (Meteor-II/Multi-Channel Master)

- **Cable:** DBHD44-TO-8BNC/O (open ended) cable required for video, synchronization and control signals.
- **Connection:** Connections between the 12-pin connector of the camera and the 44-pin connector of the Matrox Meteor-II/Multi-Channel are as follows:

METEOR2-MC/4
(44-pin connector)

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(12-pin connector)

Pin name	Pin no.		Pin name	Pin no.
HSYNC_TTL	02	→	HD INPUT	06
VSYNC_TTL	32	→	VD INPUT	07
GROUND	17	--	GROUND	08

- **Connection:** Connections between the 9-pin connector of the camera and the 44-pin connector of the Matrox Meteor-II/Multi-Channel are as follows:

METEOR2-MC/4
(44-pin connector)

CIS VCC-8350

(9-pin connector)

Pin name	Pin no.		Pin name	Pin no.
VID1_IN	15	←	RED	03
VID2_IN	44	←	GREEN	04
VID3_IN	13	←	BLUE	05
GROUND	30	--	GROUND	08

Mode 3: Asynchronous Reset (Restart/Reset mode)

- **Cable:** DBHD44-TO-8BNC/O (open ended) cable required for video, synchronization and control signals.
- **External trigger:** TTL external trigger source should be connected to the Opto-coupled Trigger Input (pin 34, 35) of the DBHD44-TO-8BNC/O cable.

Continued...

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*Cabling details for the
interface modes*

Cabling Requirements (cont.)

Mode 3: Asynchronous Reset (Restart/Reset mode)

- **Connection:** Connections between the 12-pin connector of the camera and the 44-pin connector of the Matrox Meteor-II/Multi-Channel are as follows:

METEOR2-MC/4 (44-pin connector)			CIS VCC-8350 (12-pin connector)	
Pin name	Pin no.		Pin name	Pin no.
VSYNC_TTL	32	←	WEN OUTPUT	10
EXPOSURE1	38	→	EXT. TRIG IN	11
GROUND	17	--	GROUND	08
EXTERNAL TRIGGER SOURCE				
OPTOTRIG+	35	←	TRIGGER SIGNAL	--
OPTOTRIG-	34	←	TRIGGER GROUND	--

- **Connection:** Connections between the 9-pin connector of the camera and the 44-pin connector of the Matrox Meteor-II/Multi-Channel are as follows:

METEOR2-MC/4 (44-pin connector)			CIS VCC-8350 (9-pin connector)	
Pin name	Pin no.		Pin name	Pin no.
VID1_IN	15	←	RED	03
VID2_IN	44	←	GREEN	04
VID3_IN	13	←	BLUE	05
GROUND	30	--	GROUND	08

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.

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