



## Interfacing an Analog Camera with a DOMINO Board

# CIS VCC-810

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## Main characteristics

<b>Sensor</b>	Area-scan, monochrome
<b>Image size</b>	644 (H) x 492 (V) Pixels
<b>Line rate</b>	Line per second
<b>Frame rate</b>	60 frames per second
<b>Last update</b>	14 Nov 2011

## Configurations

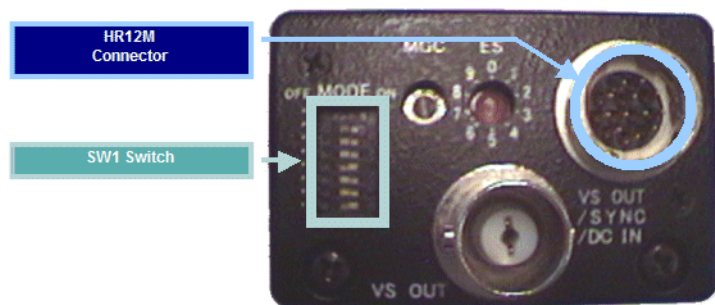
Configuration	CAM file	Description
<b>P60RA</b>	VCC-810_P60RA.cam	Asynchronous reset, Grabber controls exposure, Analog synchronization.
<b>P60RM</b>	VCC-810_P60RM.cam	Asynchronous reset, Grabber controls exposure, Master synchronization.
<b>P60SA</b>	VCC-810_P60SA.cam	Progressive Free-Run Scanning, Analog synchronization.
<b>P60SM</b>	VCC-810_P60SM.cam	Progressive Free-Run Scanning, Master synchronization.

## Compatible Cables

Configuration	Cable name	Designator	Usage
P60SA P60SM P60RA P60RM	Single Channel RGC	A15-C11-xx	Asynchronous reset Pixel clock Single HR12M connector

Refer to the MultiCam release notes for supported camera configurations.

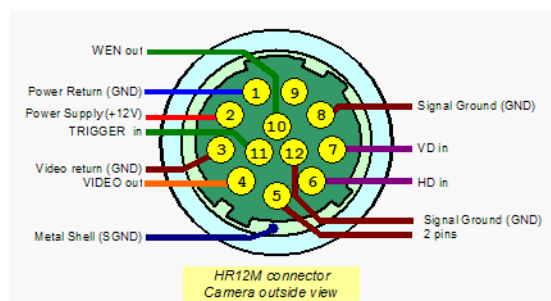
## Locating Items



Camera rear view

## Connection Information

### HR12M Pin-out



Valid for all configurations

### Signal Mapping

#### Cable "Single Channel RGC"

Pin name @ Camera	Pin name @ Board	Configuration		Usage
		P60SA	P60RA	
VIDEO out	V1+	✓	✓	Analog channel
VIDEO return GND	V1-	✓	✓	
+12 V	+12 V	✓	✓	Power supply
Power Return GND	PGND	✓	✓	
TRIGGER in	RST	-	✓	Asynchronous reset
WEN out	GATE	-	✓	Vertical synchronization
Signal Return GND	GND	✓	✓	Signal return
Metal Shell SGND	Metal Shell SGND	✓	✓	EMC shield
HD in	HIO	-	-	-
VD in	VIO	-	-	-

### Cable "Single Channel RGC"


Pin name @ Camera	Pin name @ Board	Configuration		Usage
		P60SM	P60RM	
VIDEO out	V1+	✓	✓	Analog channel
VIDEO return GND	V1-	✓	✓	
HD in	HIO	✓	✓	Horizontal synchronization
VD in	VIO	✓	-	Vertical synchronization
TRIGGER in	RST	-	✓	Asynchronous reset
WEN out	GATE	-	✓	Vertical synchronization
+12 V	+12 V	✓	✓	Power supply
Power Return GND	PGND	✓	✓	
Signal Return GND	GND	✓	✓	Signal return
Metal Shell SGND	Metal Shell SGND	✓	✓	EMC shield

Refer to the camera cable A15-C11-xx for additional useful manufacturing information.


## Camera Setup

### SW1 Switch

Valid for P60SA


Look	Switch	Setting	Effect
	1	ON	Manual Gain
	2	OFF	Gamma correction: 1.0
	3	OFF	VD/HD input terminator: 75Ω
	4	OFF	Trigger input polarity: Negative
	5	ON	Internal Sync Mode
	6	ON	
	7	ON	
	8	ON	

Valid for P60RA


Look	Switch	Setting	Effect
	1	ON	Manual Gain
	2	OFF	Gamma correction: 1.0
	3	OFF	VD/HD input terminator: 75Ω
	4	OFF	Trigger input polarity: Negative
	5	ON	Random Trigger Mode2_INT
	6	ON	
	7	OFF	
	8	ON	



**Valid for P60SM**

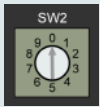
Look	Switch	Setting	Effect
	1	ON	Manual Gain
	2	OFF	Gamma correction: 1.0
	3	OFF	VD/HD input terminator: 75Ω
	4	OFF	Trigger input polarity: Negative
	5	ON	External Sync Mode (Direct Reset)
	6	OFF	
	7	ON	
	8	ON	

**Valid for P60RM**

Look	Switch	Setting	Effect
	1	ON	Manual Gain
	2	OFF	Gamma correction: 1.0
	3	OFF	VD/HD input terminator: 75Ω
	4	OFF	Trigger input polarity: Negative
	5	ON	Random Trigger Mode2_EXT
	6	OFF	
	7	OFF	
	8	ON	

**SW2 Switch**

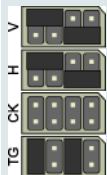
## Establishing exposure time for P60SA, P60SM

Look	Setting	Effect
	<b>0</b>	Shutter is OFF (16.6 ms)
	<b>1</b>	Exposure time is 8 ms
	<b>2</b>	Exposure time is 5 ms
	<b>3</b>	Exposure time is 2 ms
	<b>4</b>	Exposure time is 1 ms
	<b>5</b>	Exposure time is 500 ms
	<b>6</b>	Exposure time is 250 ms
	<b>7</b>	Exposure time is 83.3 ms
	<b>8</b>	Shutter is OFF (16.6 ms)
	<b>9</b>	Shutter is OFF (16.6 ms)

## Board Jumpers Setup

The Domino Iota and Domino Alpha 2 jumper blocks should be configured as follows (valid for all configurations).

Settings for the jumper block facing the connector the camera is linked to

Jumper block	MultiCam parameter	Value	Meaning
	JumperV	TTL	The pin 4 (VIO) and pin 5 (EXP) of the connector feeding the channel can be used as input or output in TTL format.
	JumperH	TTL	The pin 14 (HIO) and pin 15 (GATE) of the connector feeding the channel can be used as input or output in TTL format.
	JumperCK	EMPTY	Camera clock: None. Pin 9 and pin 10 of the channel connector are unused.
	JumperL1	DT	The video lane 1 is sensed as a differential 75 W terminated analog signal applied at pin 1 (V1+) and pin 2 (V1-).
	JumperL2	DT	The video lane 2 is sensed as a differential 75 W terminated analog signal applied at pin 11 (V2+) and pin 12 (V2-).