Interfacing an Analog Camera
with a DOMINO Board

Hitachi KP-F38

EURESYS™
E x c e l l e n c e   i n   v i s i o n

Main characteristics

Sensor	Area-scan, monochrome
Image size	643 (H) x 493 (V) Pixels
Line rate	1000 Line per second
Frame rate	80 frames per second
Last update	15 Nov 2011

Configurations

Configuration	CAM file	Description
P80RM	KP-F38_P80RM.cam	Asynchronous reset, Grabber controls exposure, Master/ Analog synchronization.
P80SA	KP-F38_P80SA.cam	Progressive Free-Run Scanning, Analog synchronization.
P80SM	KP-F38_P80SM.cam	Progressive Free-Run Scanning, Master synchronization.

Compatible Cables

Configuration	Cable name	Designator	Usage
P80SA P80SM P80RM	Dual Channel RG	A15-C05-XX	Asynchronous reset Single HR12M connector

Connection Information

HR12M Pin-out
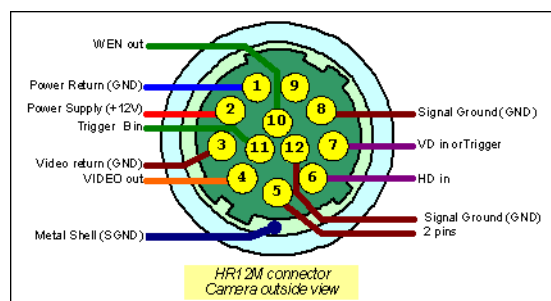
Valid for all configurations

Signal Mapping

Cable "Dual Channel RG"

Pin name @ Camera	Pin name @ Board	Configuration			Usage
		P80SA	**P80SM**	**P80RM**	
Vout	**V1+**	✓	✓	✓	Analog channel
VIDEO return GND (Vout)	**V1-**	✓	✓	✓	
Power Supply +12 V	**+12 V**	✓	✓	✓	Power supply
Power Return GND	**PGND**	✓	✓	✓	
HD in/out	**HIO**	-	✓	✓	Horizontal synchronization
VD in/out	**VIO**	-	✓	-	Vertical synchronization
Trigger	**VIO**	-	-	✓	Asynchronous reset
Signal Return GND	**GND**	✓	✓	✓	Signal return
Metal Shell SGND	**Metal Shell SGND**	✓	✓	✓	EMC shield

Refer to the camera cable A15-C05-xx for additional useful manufacturing information.

Camera Setup

Gain adjust

Valid for all configurations

As required by the application.

HD/VD IN/OUT

Valid for configuration P80SA

Look	Setting	Effect
HD/VD OUT ▭ IN	OUT	External HD/VD input

Valid for configurations P80SM, P80RM

Look	Setting	Effect
HD/VD OUT ▭ IN	IN	External HD/VD input

DIP switch
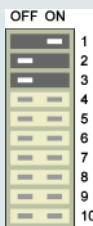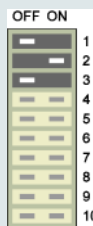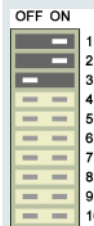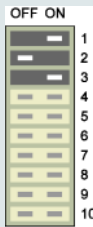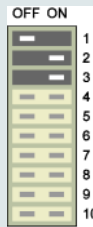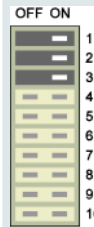
Valid for configurations P80SA, P80SM

Look	Switch	Setting	Effect
OFF ON 1 2 3 4 5 6 7 8 9 10	1	ON/OFF	See "Establishing exposure time"
	2	ON/OFF	
	3	ON/OFF	
	4	OFF	Frame on demand OFF
	5	OFF	
	6	OFF	
	7	OFF	
	8	OFF	
	9	OFF	High input impedance for external HD/VD
	10	OFF	

Valid for configuration P80RM
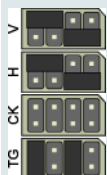
Look	Switch	Setting	Effect
	1	OFF	Exposure controlled by reset pulse width
	2	OFF	
	3	OFF	
	4	ON	Frame on demand One Trigger mode
	5	OFF	
	6	ON	
	7	OFF	
	8	OFF	
	9	OFF	High input impedance for external HD/VD
	10	OFF	

Establishing exposure time forP80SA and P80SM

Normal Factory-setting	1 / 290 s 3.45 ms	1 / 580 s 1.72 ms	1 / 1200 s 833 µs
1 / 2300 s 435 µs	1 / 4700 s 213 µs	1 / 12 000 s 83 µs	1 / 58 000 s 17 µs

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-).