General Description

epc offers an evaluation carrier board and an evaluation board for an easy test setup.

The epc901 Evaluation Kit V2 consists of two PCB's which simplifies the use of epc's 1024x1 CCD line sensor.

The Chip Carrier Board holds the chip and offers an easy lens mount possibility.

The Evaluation Board carries the Chip Carrier Board and defines the operating configuration of the epc901 by respective pin configuration. It offers also the connection to the customer application.

M12 and C-Mount lens holders and a small assortment of lenses are available separately.

In the minimal setup, only a 3V supply as well as the READ, SHUTTER and CLR_PIX signals are necessary, to use the kit in the default configuration.

The default configuration of the Evaluation Kit V2 is as follows (as per datasheet epc901) :

- Mode: single mode
- Bandwidth: 1MHz
- I2C Address: 0101b
- Region of interest (ROI_SEL): 0 .. 1023
- Gain: 1
- Read direction (RD_DIR): 1023 … 0
- Horizontal binning (HOR_BIN): 1 pixel

For alternative configurations – i.e. for low readout noise operation refer to the epc901 datasheet.

Features

- Single supply 3V
  or low power operation with external 3V and 5V supply
- Easy debug possibilities on 2.54mm header
- Easy changeable set-up configuration with 0805 zero-ohm resistors
- Lens mount: CS mount or M12 (optional)

Applications

- Reference application for evaluation and design engineers.
- Performance demonstration of the epc901 chip in an easy to use design.

The epc901 evaluation kit hardware V2

Figure 1 show the evaluation chip carrier board (1) inserted into the edge connector socket of the evaluation board (2).
Figures 2 and 3 depict the hardware with optional lens mount and lens, respectively.

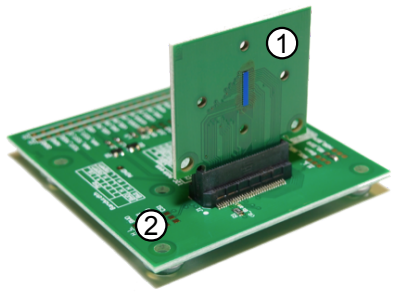

Figure 1: Carrier board on Evaluation board

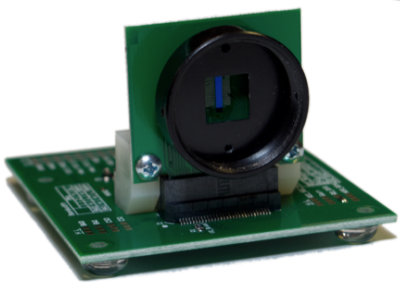

Figure 2: Lens holder M12on carrier board

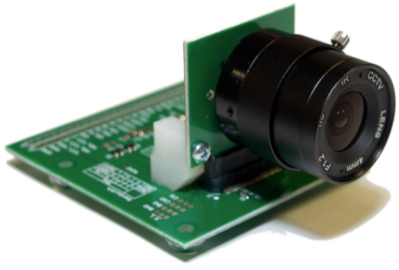

Figure 3: System with lens

1. Chip Carrier board V2

1.1. Schematics

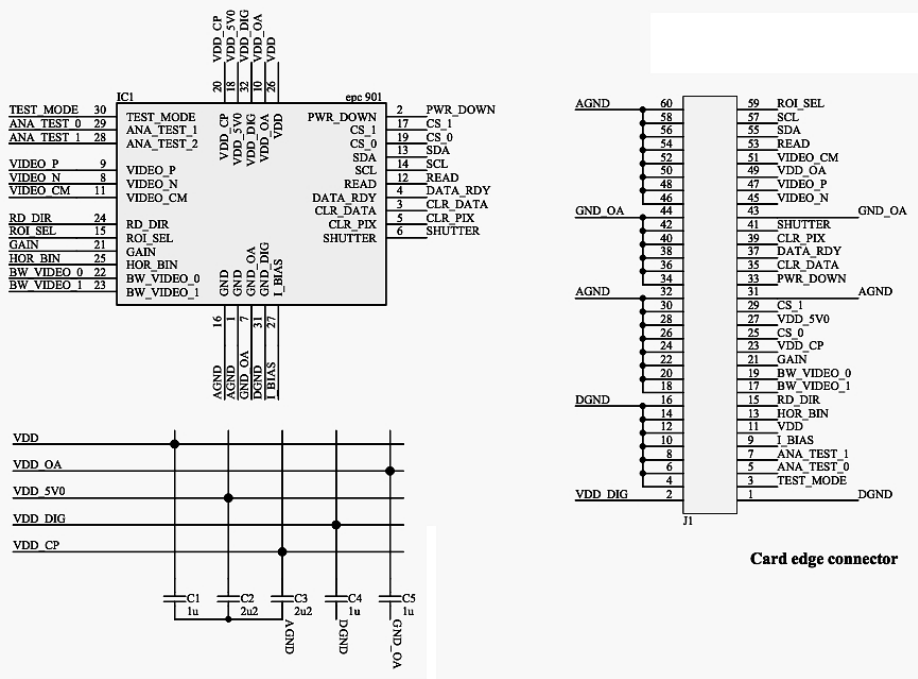

Figure 4: Schematics of the epc901 Chip Carrier Board V2

1.2. Board layout

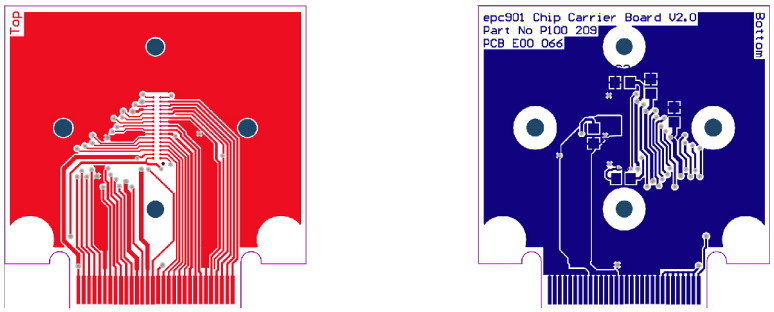

Figure 5: Layout of the Chip Carrier Board V2

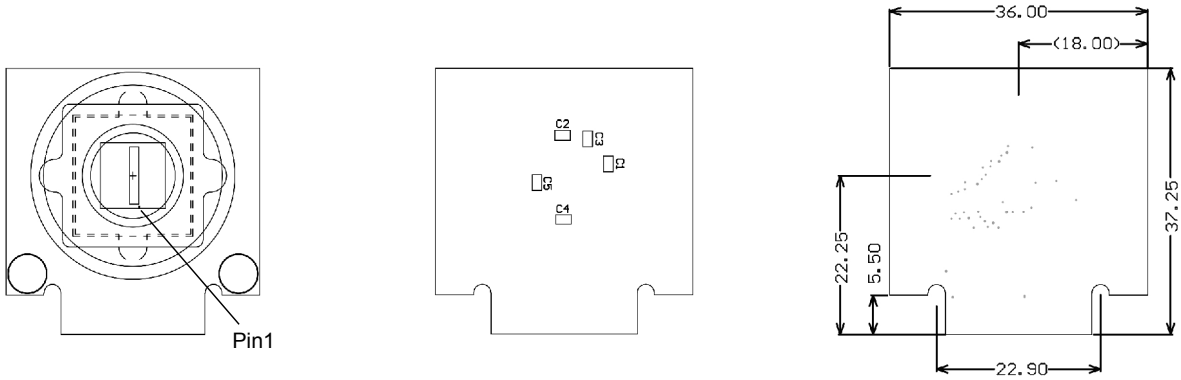

Figure 6: Assembly of the Chip Carrier Board V2:top / bottom / dimensions

2. Evaluation Board V2

2.1. Schematics

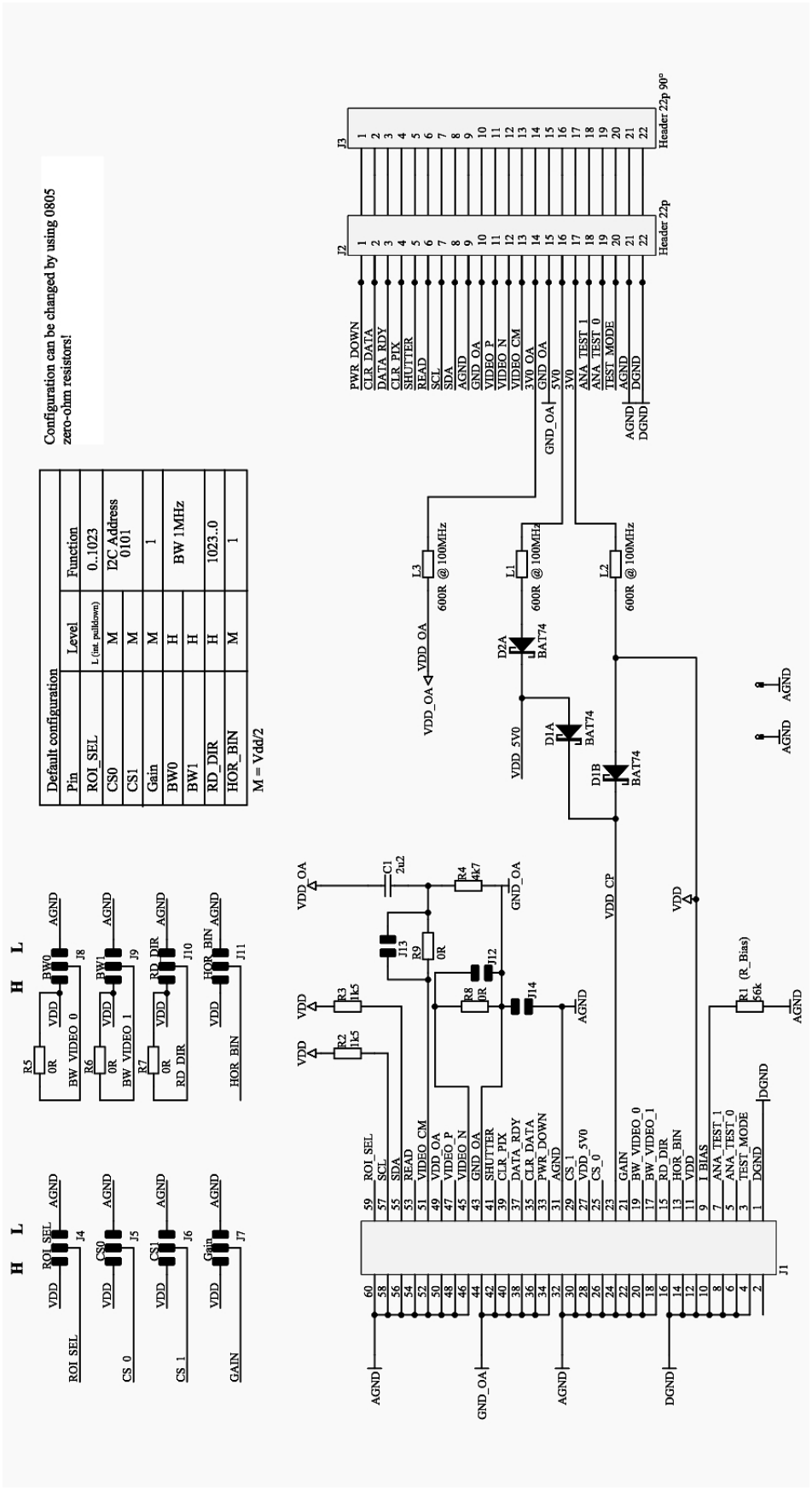

Figure 7: Schematics of the epc901 Evaluation Board V2

2.2. Board layout

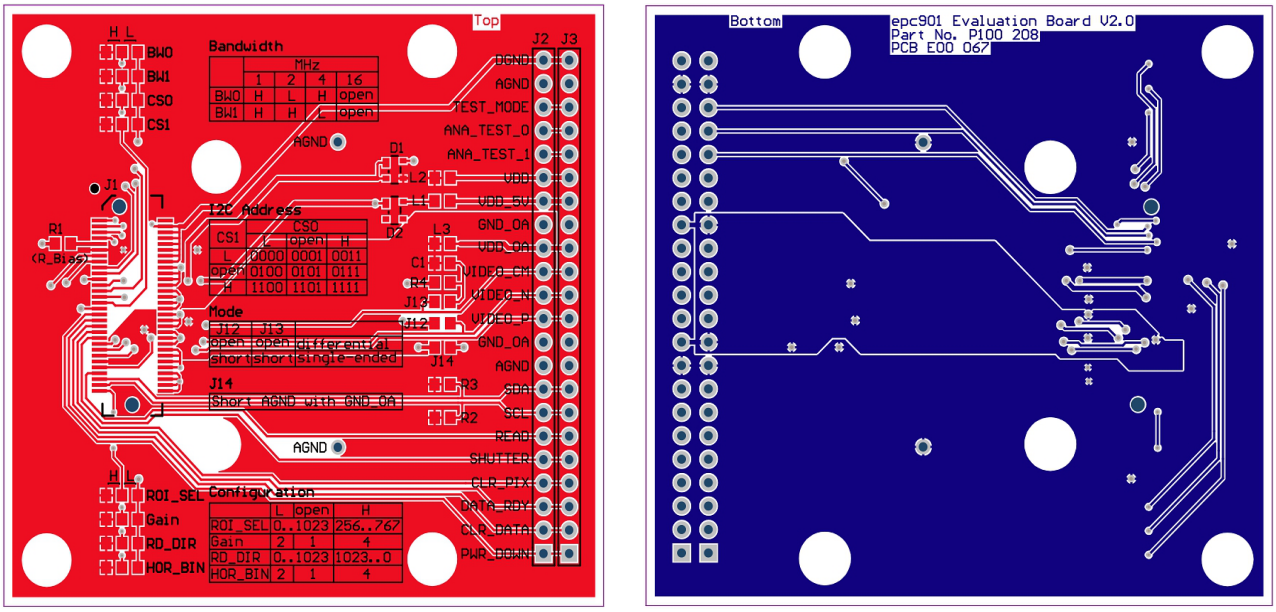

Figure 8: Layout of the Chip Carrier Board V2

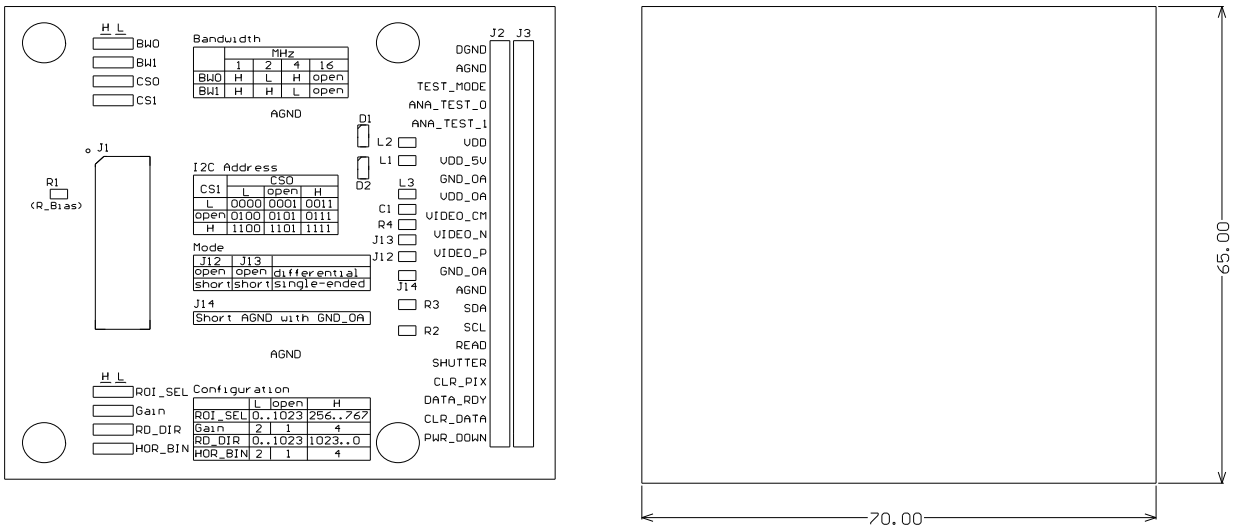

Figure 9: Assembly of the Chip Carrier Board V2: top / bottom incl. Dimensions

2.3. Set-up

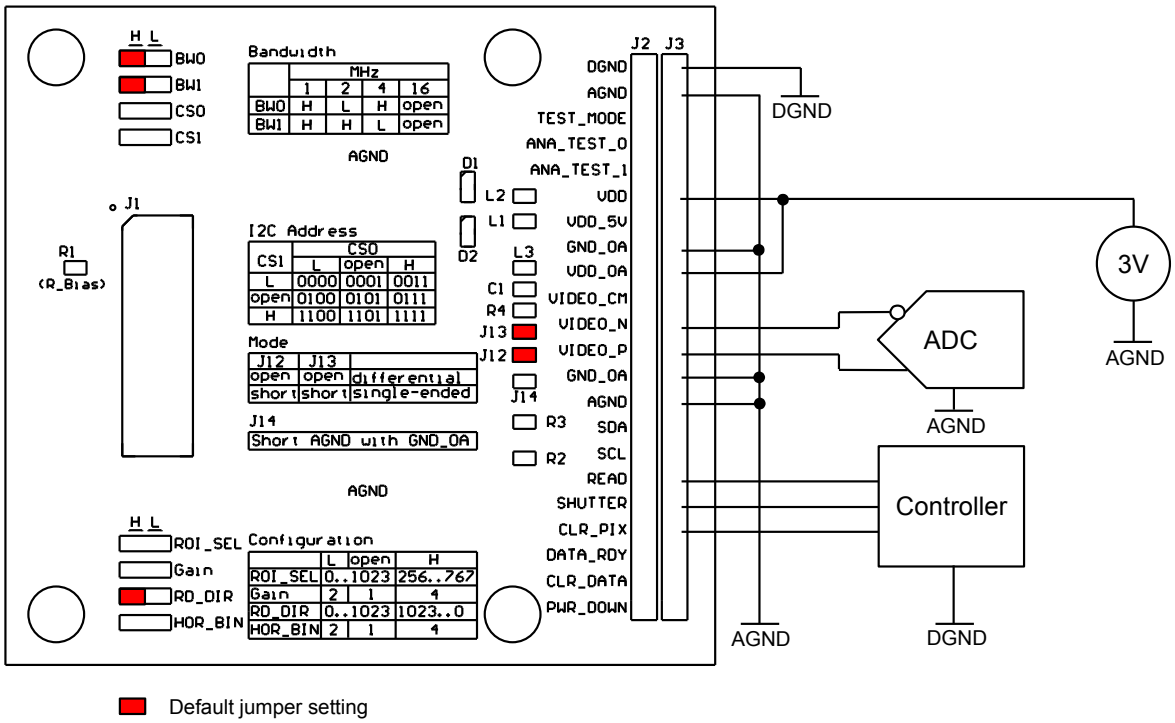

Figure 10: Minimal set-up with 3V supply (default configuration)

Notes:

Low power operation:	use external 3V and 5V supply, refer to the epc901 datasheet.
Change the configuration of the epc901:	use respective I2C commands or solder zero-ohm resistors according to the table printed on the Evaluation Board.

3. Lenses and lens holders

Part Number	Part Name	Focal length	F-number	Field of view (FOV) epc901		
		f_0		Horizontal	Vertical	Diameter
		[mm]	[#]	[deg]	[deg]	[deg]
P100 212	Lens FOV 87º, F1.4, CS-Mount	4.0	1.4	1.7	87.7	87.7
P100 213	Lens FOV 26º, F2.0, M12	16.0	2.0	0.4	27.0	27.0
P100 214	Lens FOV 90º, F2.0, M12	3.6	2.0	1.9	93.7	93.7
P100 215	Lens FOV 120º, F2.2, M12	2.1	2.2	3.3	122.7	122.7
P100 216	Lens Holder, CS-Mount					
P100 217	Lens Holder, M12-Mount					

Table 1: List of available lenses

4. Ordering Information

Part Number	Part Name	Package	RoHS compliance	Packaging Method
P100 209	epc901 Chip Carrier Board V2	PCB 36.00 x 42.75 mm	Yes	Anti static bag
P100 208	epc901 Evaluation Board V2	PCB 70.00 x 65.00 mm	Yes	Anti static bag
P100 212	Lens FOV 87º, F1.4, CS-Mount	35.0 x 30.0 x 29.4 mm	-	Carton box
P100 213	Lens FOV 26º, F2.0, M12	14.0 x 14.0 x 13.3 mm	-	Carton box
P100 214	Lens FOV 90º, F2.0, M12	14.0 x 14.0 x 15.4 mm	-	Carton box
P100 215	Lens FOV 120º, F2.2, M12	17.0 x 17.0 x 18.5 mm	-	Carton box
P100 216	Lens Holder, CS-Mount	29.0 x 29.0 x 12.8 mm	-	Plastic bag
P100 217	Lens Holder, M12-Mount	26.5 x 20.9 x 8.2 mm	-	Plastic bag

Table 2: Ordering information Evaluation Hardware V2

5. Reference

DATASHEET epc901, ESPROS Photonics corp., 2014

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