

General Description

The epc660-BC (Board-to-Board Chip Carrier) is an easy-to-use board with a fully integrated epc660 3D-TOF imager chip with a resolution of 320 x 240 pixels (QVGA). It allows a simple mounting and interconnection to a PCB board which carries the necessary illumination and application system. The lens mounting for standard lenses with lens holders is also easily to be done.

This board is well suited for small and medium volume production of 3D TOF cameras.

Only few additional components are needed to generate a complete 3D camera. Depending on illumination power and optical design, a resolution in the millimeter range for distances up to dozens of meters is feasible. Up to 158 full frame TOF images are delivered in rolling mode. The extremely high sensitivity of the chip allows for a reduced illumination power and reduced overall power consumption compared to other TOF imagers.

An evaluation kit for the epc660 is available with hard- and software examples and a comprehensive manual to speed up system integration.

Features

- epc660 chip assembled on carrier for easy-to-use application
- Easy lens mounting by using standard lens mounts and lenses
- Well suited for small and medium volume production

Applications

- People detection and counting
- Mobile postal parcel size measurement
- Machine safety
- Drone collision avoidance sensing
- Car collision avoidance systems
- Pedestrian detection and breaking systems
- Man-Machine interface
- Gesture control
- Body size measurement
- General volumetric mapping
- Mobile robotics
- Simultaneous localization and mapping (SLAM)

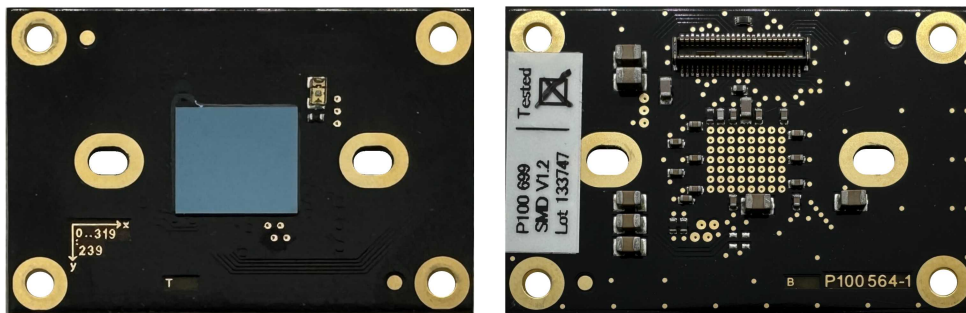


Figure 1: epc660 BC Chip Carrier

1. Ordering information

Part #	Part Name	Description	RoHS
P100 792	epc660-011-BC-003 Chip Carrier	epc660 chip on carrier with board to board connector	yes
P300 761	Lens holder M12 x 0.5	To assemble a lens onto the chip carrier	
P100 506	Lens 149°, 1/2", M12 mount	FOV 108° x 77° on epc660	
P100 843	Lens 88°, 1/2", M12 mount	FOV 70° x 52° on epc660	
P100 596	Lens 38°, 1/2", M12 mount	FOV 31° x 24° on epc660	

Table 1: Ordering Information

2. Operation

This module contains the epc660 chip and all necessary passive components which have to be close to the epc660 chip. The board is designed to be connected to a Hirose DF40GB-48DS connector. All pins necessary to operate the epc660 chip are accessible by this connector. The operation of the epc660 chip is described in detail in the data sheet of epc660.

3. Schematic diagram

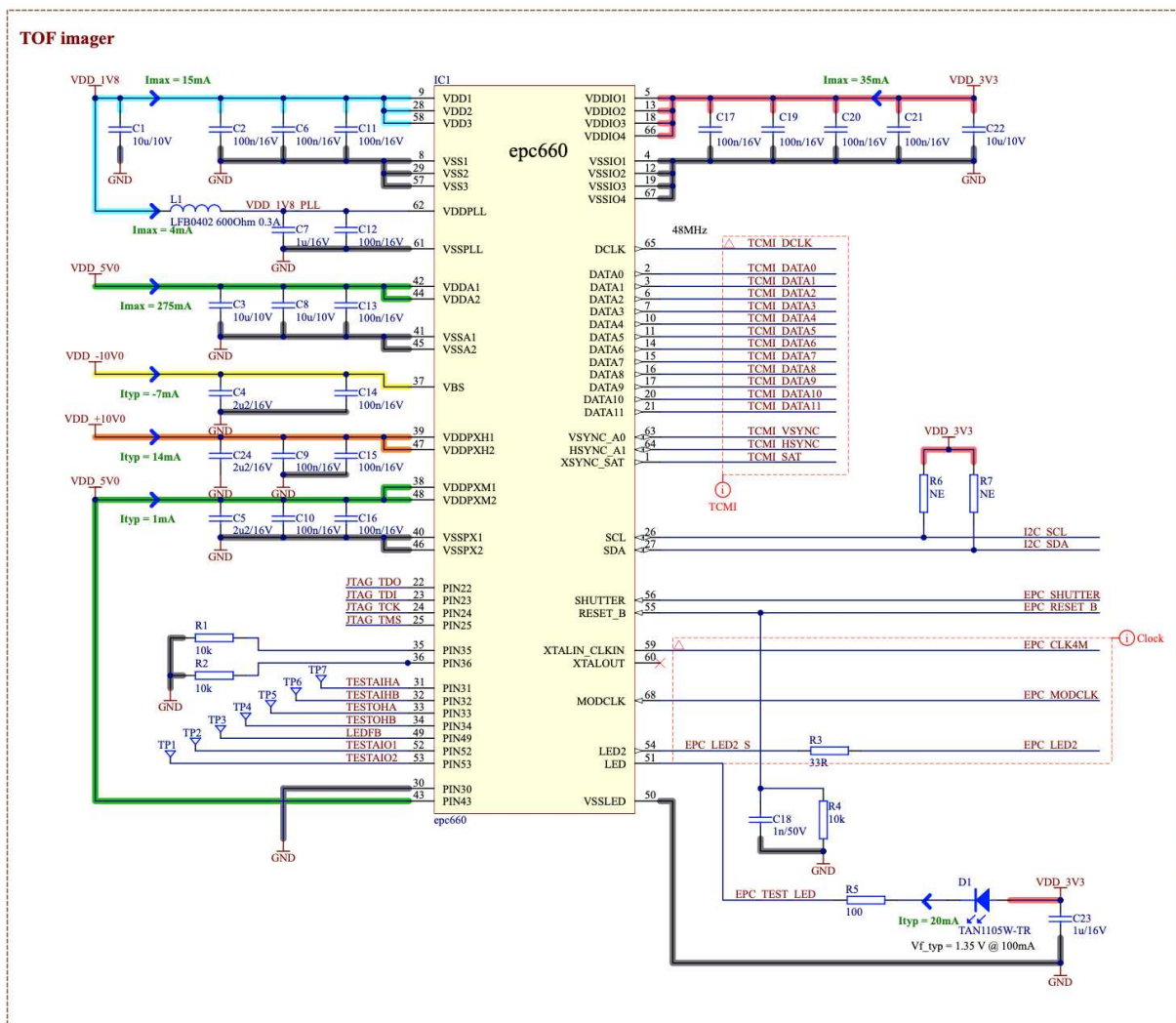


Figure 2: Schematic diagram - TOF imager

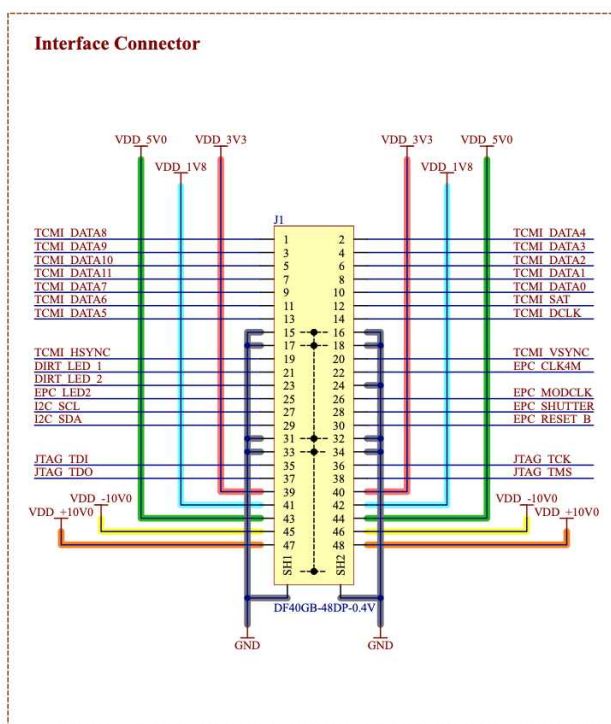


Figure 3: Schematic diagram - Interface Connector

4. Board layout

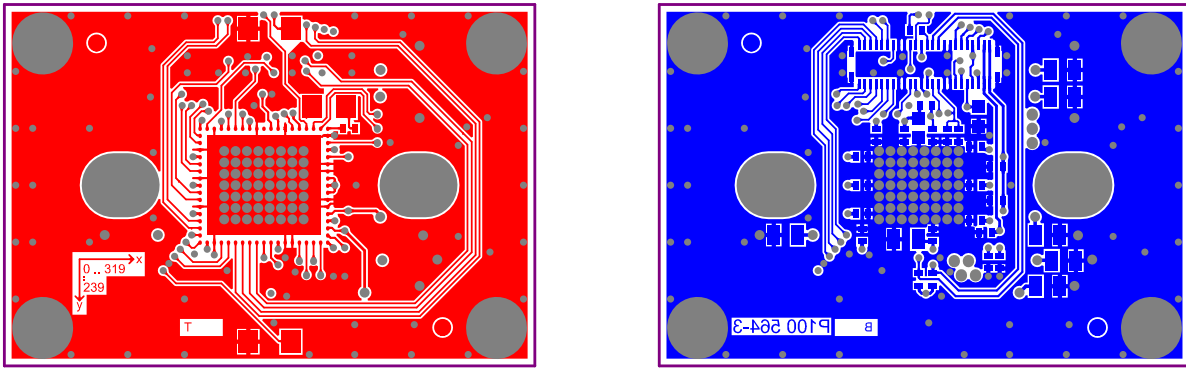


Figure 4: Layout top and bottom

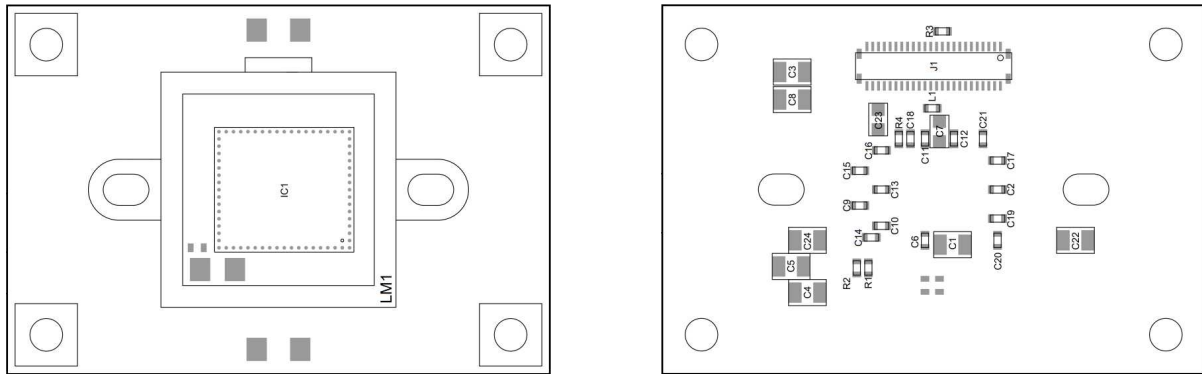


Figure 5: Assembly top and bottom

5. Mechanical dimensions

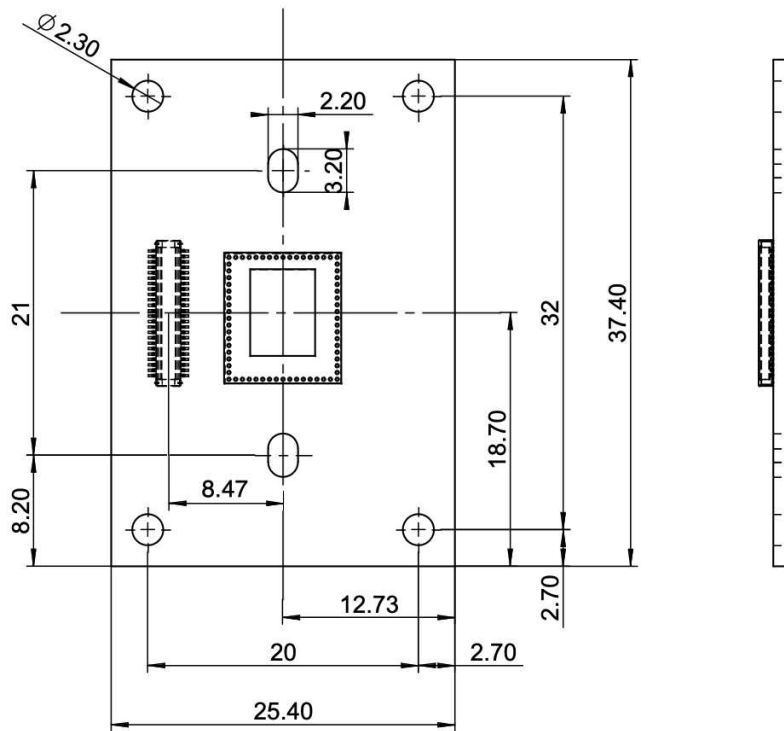


Figure 6: Dimensions
(in mm, bottom view, PCB material is glass epoxy FR-4, thickness 1.6mm)

6. Socket

Figure 7 shows the Hirose Electric J Board-to-Board connectors from the DF40 Series.

The plug DF40GB-48DP-0.4V(58) with outer shroud contacts is assembled on the chip carrier.

A mating receptacle of the DF40 series such as DF40GB(3.0)-48DS-0.4V(51) must be used on the main PCBA.



Figure 7: Vertical Board-to-Board connector

7. Packaging

The parts are delivered in a 56 mm wide carrier tape sealed with an appropriate cover tape.

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