

General Description

The epc660 CC (Card-edge Connector Chip Carrier) is an easy-to-use board with an epc660 chip (fully integrated 3D-TOF imager 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 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 CC Chip Carrier

1. Ordering information

Part #	Part Name	Description	Package	RoHS
P100 244	epc660-xxx-CC-003	epc660 on chip carrier	PCB 37.25 x 36.00 x 3.00 mm	yes

Table 1: Ordering Information

Note: “xxx” defines the version number of the epc660 chip

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 standard 60 pin card edge connector. All pins necessary to operate the epc660 chip are accessible by the card edge connector. The operation description of the epc660 chip is described in the datasheet epc660.

3. Schematic diagram

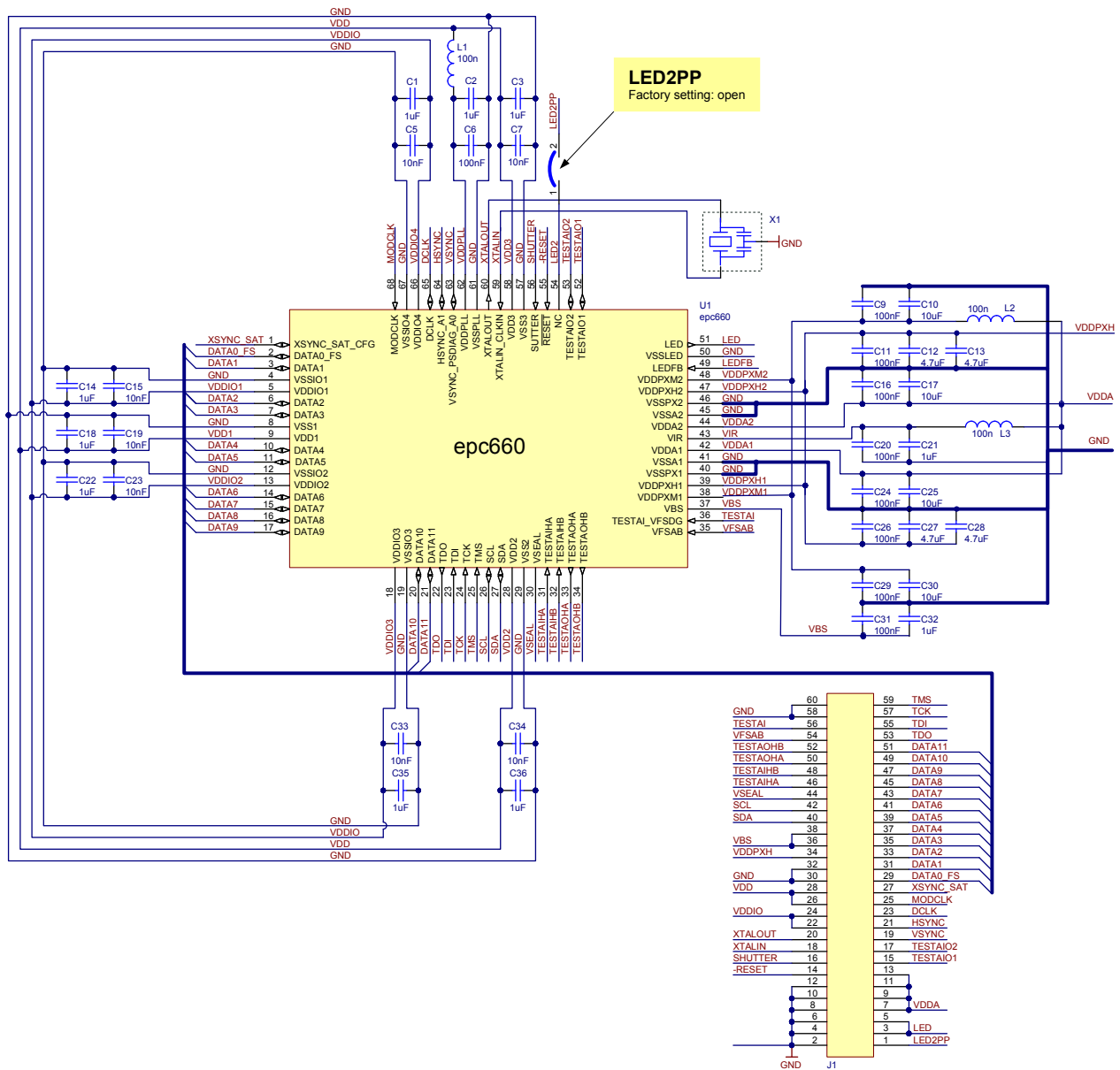


Figure 2: Schematic diagram

Note: The carrier version 003 is backward compatible to earlier versions, as long as the bridge LED2PP is not closed (factory setting).

4. Board layout

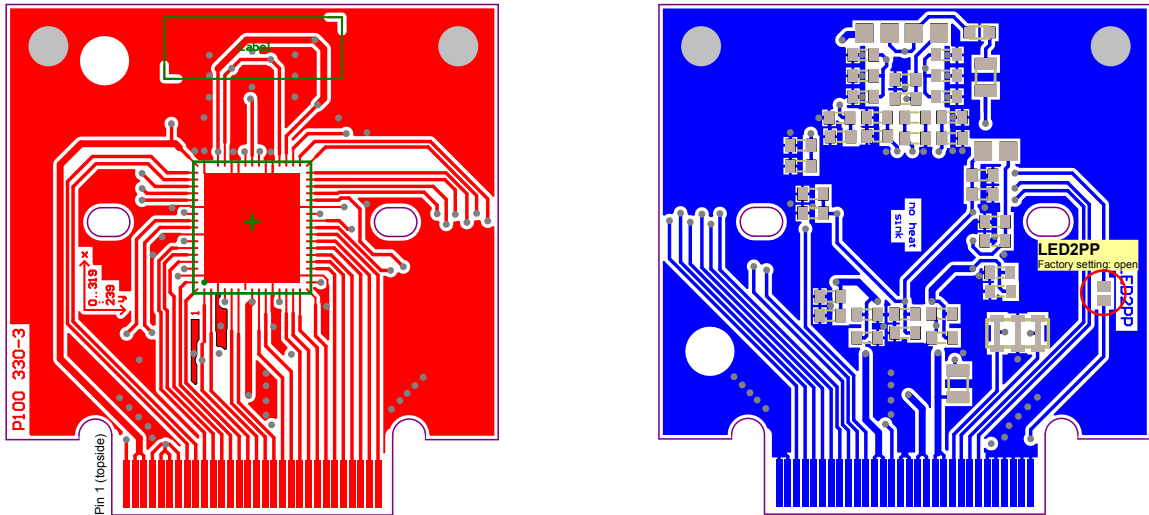


Figure 3: Layout top and bottom

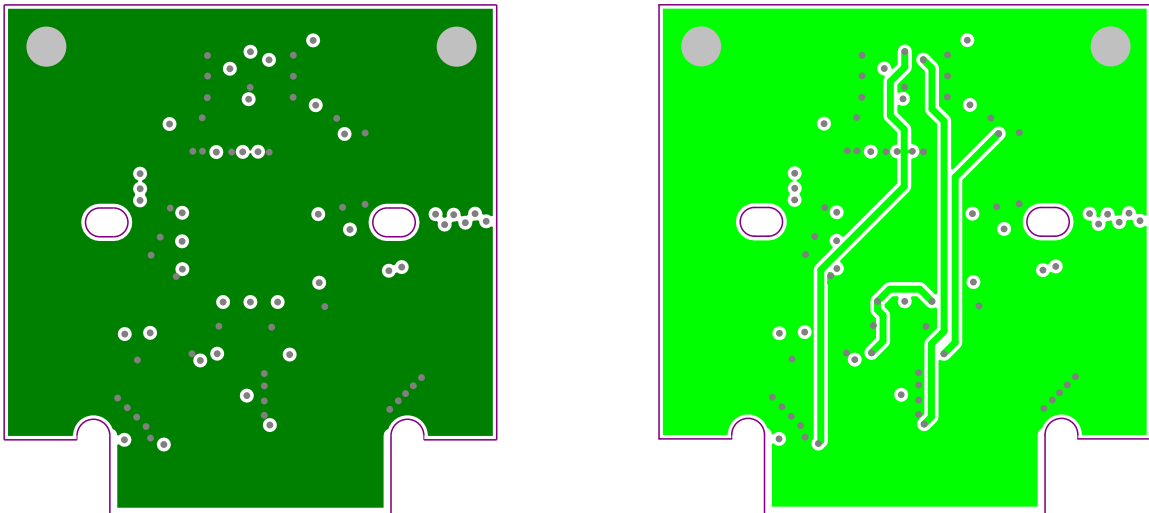


Figure 4: Layout middle top and bottom

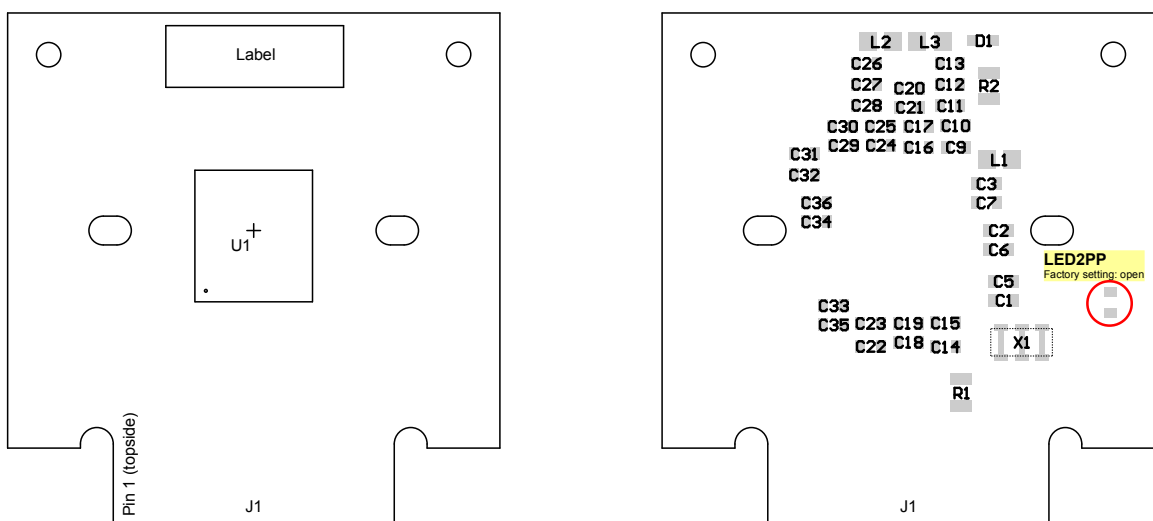


Figure 5: Assembly top and bottom

5. Mechanical dimensions

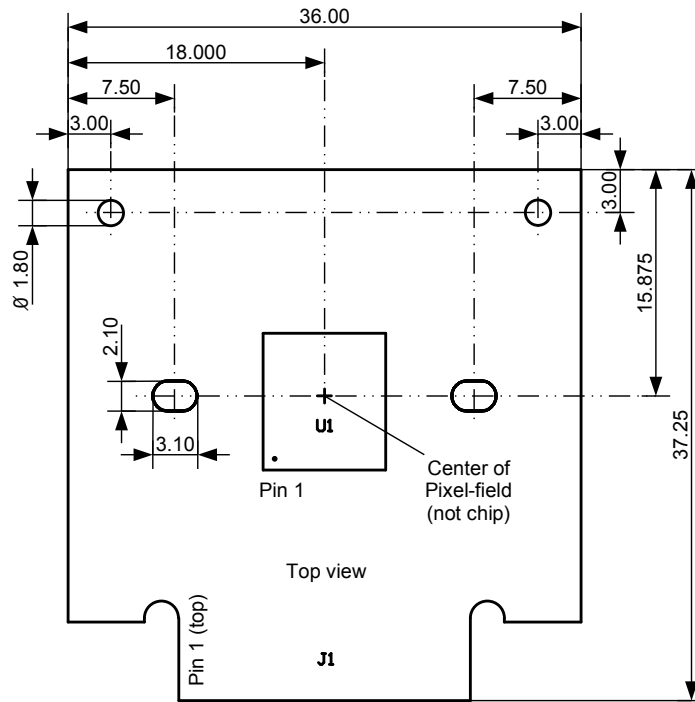


Figure 6: Dimensions
(in mm, top view, PCB material is glass epoxy FR-4, thickness 1.6mm)

6. Socket for J1

7 and 8 show possible 60 pin card edge connectors, e.g. SAMTEC MEC6-130-02-L-DV-A / -RA1

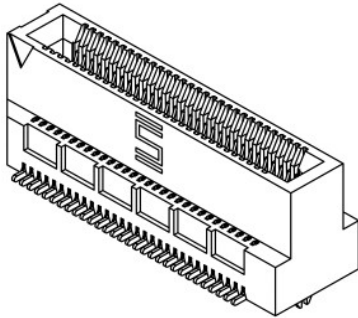


Figure 7: Vertical mount mini-edge card connector

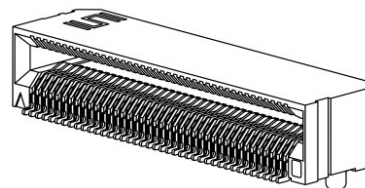


Figure 8: Right angle mini-card connector (Source: Samtec)

Note: J1 Pin 1 marking of the schematic diagram, PCB and assembly drawing are valid. J1 Pin 1 marking on connector housing can be misleading.

7. Change history

Chip Carrier Version	Changes
001	First release
002	Optimization of assembled components and better ground connections for lower distance noise.
003	Change of signal on J1, pin 1 from LEDFB to LED2PP. LED2PP is active only, if CB1/2 is shorted.

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