

General Description

The epc635 Card Edge Connector Carrier is an easy-to-use board with an epc635 chip (fully integrated 3D-TOF imager with a resolution of 160 x 60 pixels, Half-QQVGA). 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 pre-assembled 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 512 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.

epc635 is based on the same technology and instruction set as the existing epc660 QVGA TOF imager from ESPROS.

An evaluation kit for the epc635 is available with hard- and software examples and a comprehensive manual to speed up system integration.

Features

- epc635 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
- Helicopter near terrain flight assistance
- 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)

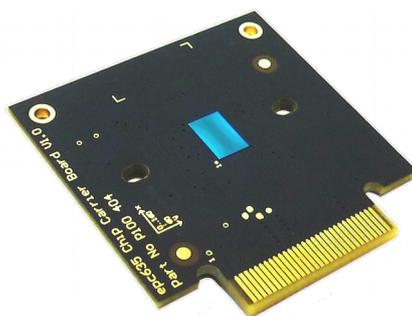


Figure 1: epc635 Card Edge Connector Carrier

1. Ordering Information

Part Number	Part Name	Package	RoHS compliance
P100 404	epc635 Card Edge Connector Carrier	PCB 37.25 x 36.00 x 4 mm	Yes

Table 1: Ordering Information

2. Technical data

The epc635 Card Edge Connector Carrier is a PCB board with an epc635 chip, all most important decoupling capacitors and a card edge connector. The board allows the access all the pins of the chip according the Datasheet epc635.

The user does not need a special technical manual for this carrier. Use and operate the chip according the Datasheet epc635 which contains a detailed and complete description of the chip's functionality.

3. Schematics

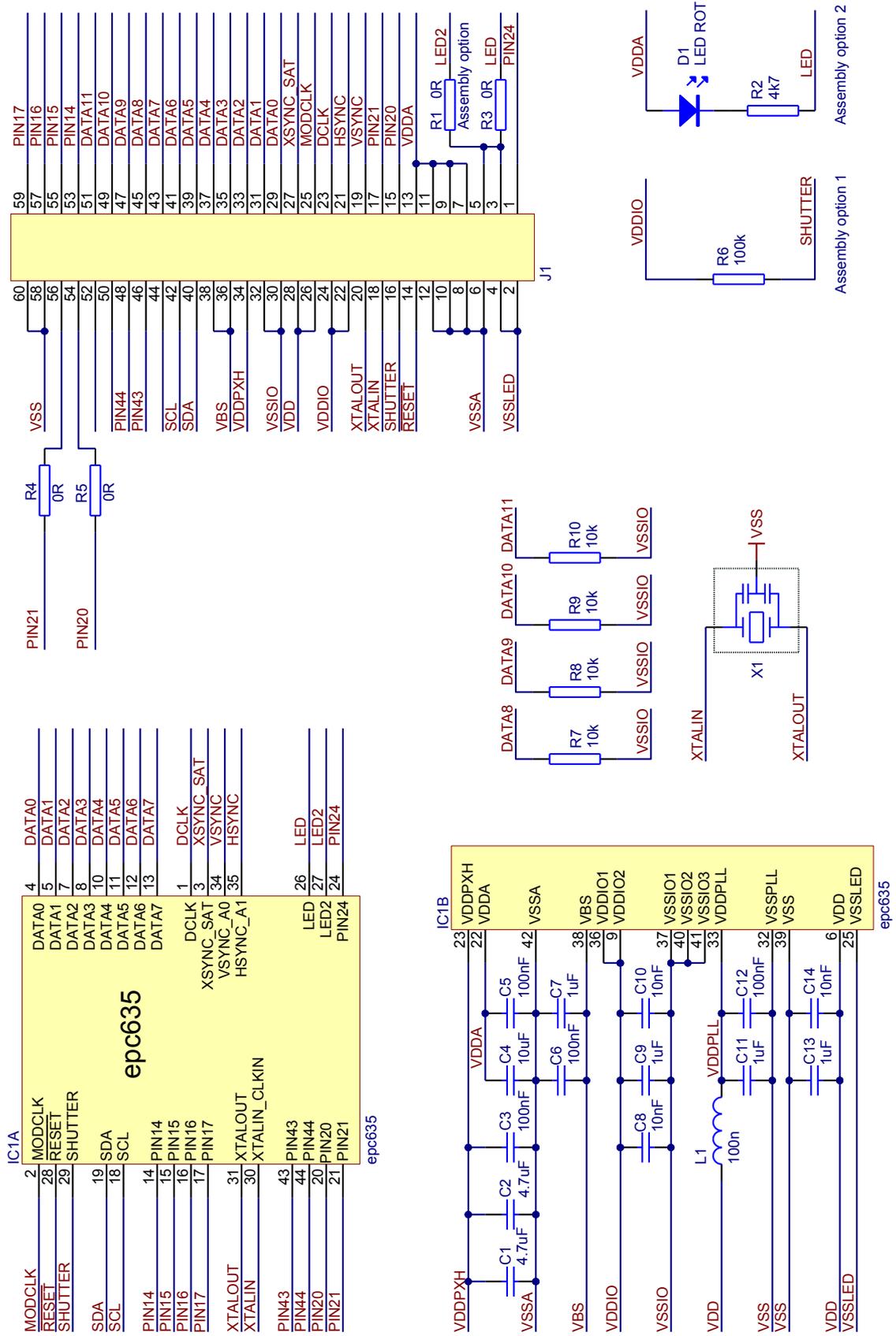


Figure 2: Schematic epc635 Card Edge Connector Carrier

4. Board layout and assembly

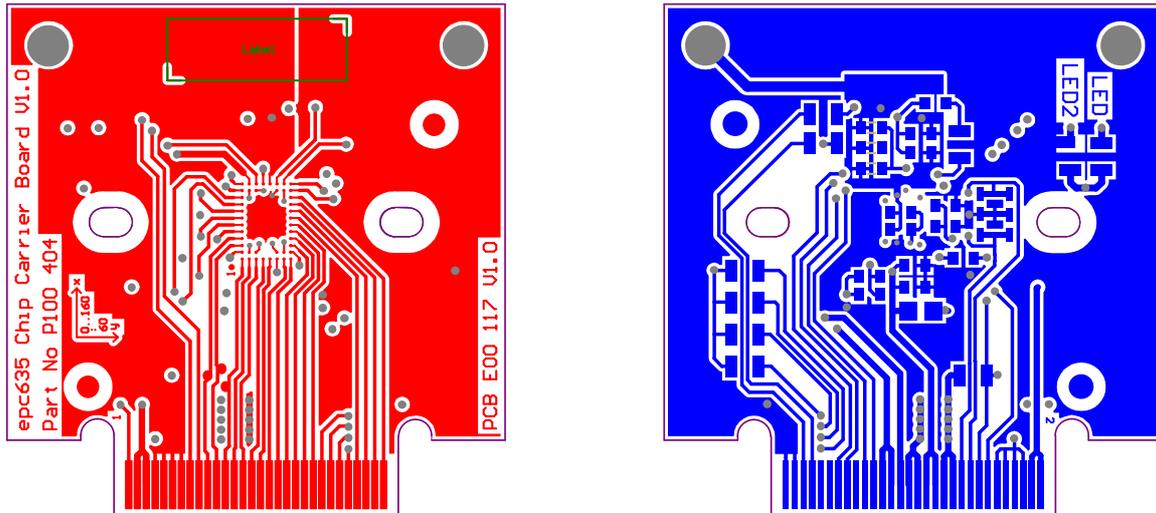


Figure 3: epc635 Card Edge Connector Carrier: Layout top and bottom

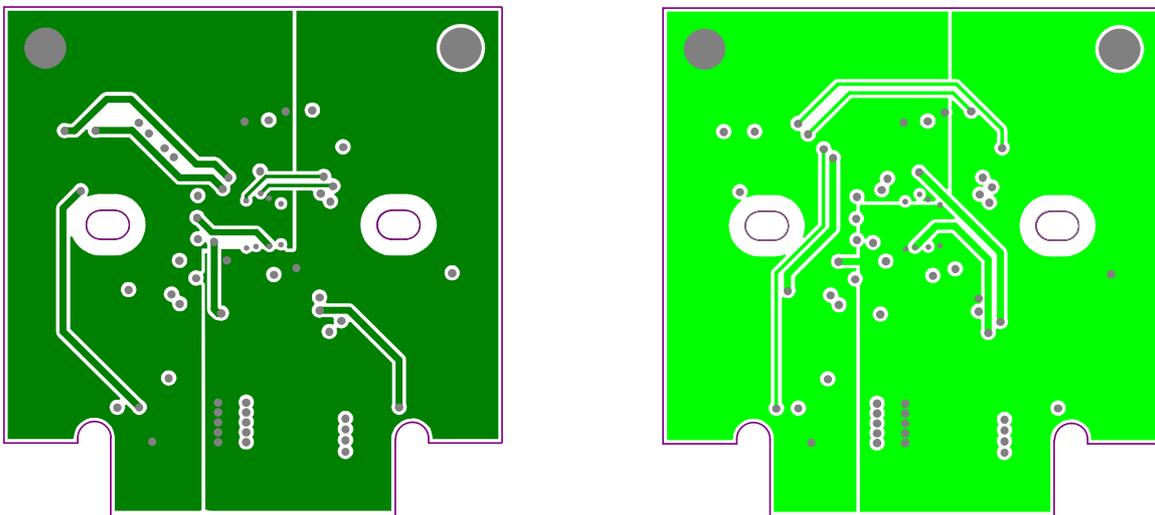


Figure 4: epc635 Card Edge Connector Carrier: Layout middle top and bottom

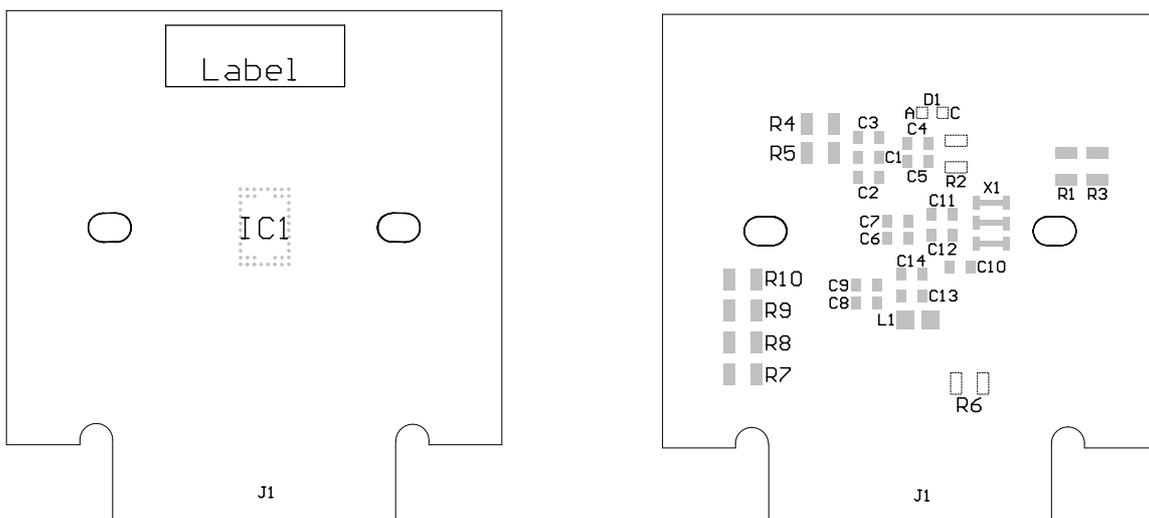
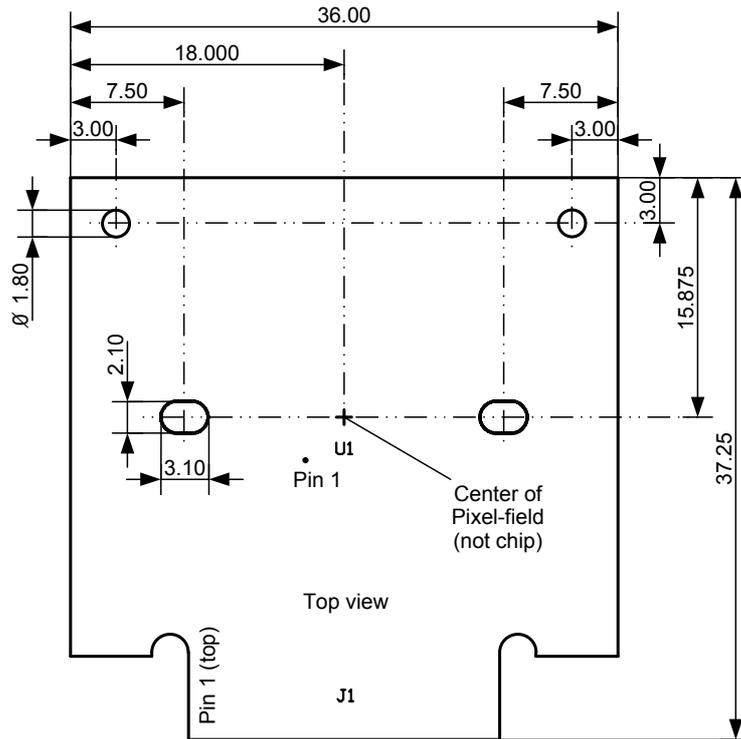


Figure 5: epc635 Card Edge Connector Carrier: Assembly top and bottom

5. Mechanical dimensions



PCB material: Glass epoxy FR-4, thickness 1.6mm

Figure 6: epc635 Card Edge Connector Carrier: Dimensions
(all measures in mm, top side is illumination side)

6. Card edge connector J1

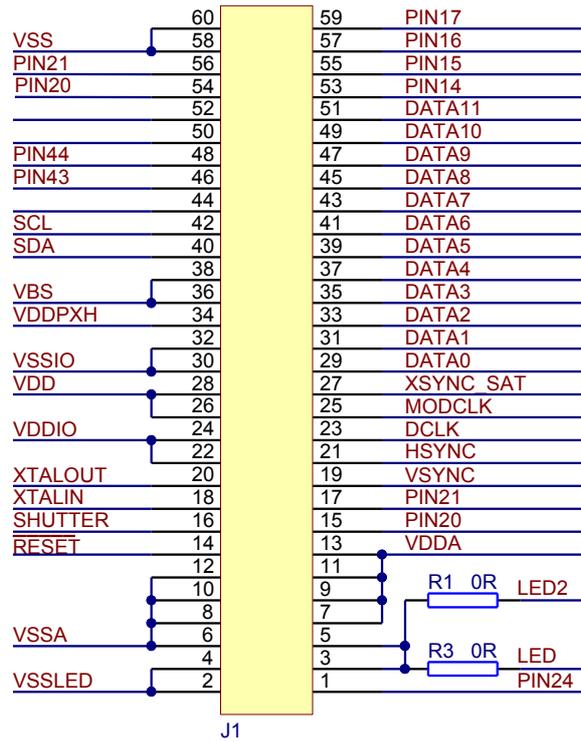


Figure 7: Pin table card edge connector J1

IMPORTANT NOTE:

Use for connector J1 Pin 1 marking of the schematic, PCB and assembly drawing. Pin 1 marking on connector housing J1 can deviate.

Figure 8 and Figure 9 show possible card connectors for interfacing the Card Edge Connector Carrier with the user's application board e.g. SAMTEC MEC6-130-02-L-DV-A / -RA1

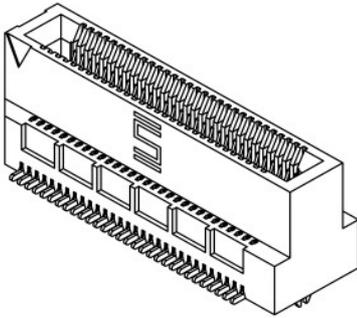


Figure 8: Vertical mount mini-edge card connector

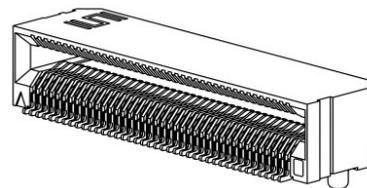


Figure 9: Right angle mini-card connector (Source: Samtec)

7. IMPORTANT NOTICE

ESPROS Photonics AG and its subsidiaries (ESPROS) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to ESPROS' terms and conditions of sale supplied at the time of order acknowledgment.

ESPROS warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with ESPROS' standard warranty. Testing and other quality control techniques are used to the extent ESPROS deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

ESPROS assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using ESPROS components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

ESPROS does not warrant or represent that any license, either express or implied, is granted under any ESPROS patent right, copyright, mask work right, or other ESPROS intellectual property right relating to any combination, machine, or process in which ESPROS products or services are used. Information published by ESPROS regarding third-party products or services does not constitute a license from ESPROS to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from ESPROS under the patents or other intellectual property of ESPROS.

Resale of ESPROS products or services with statements different from or beyond the parameters stated by ESPROS for that product or service voids all express and any implied warranties for the associated ESPROS product or service. ESPROS is not responsible or liable for any such statements.

ESPROS products are not authorized for use in safety-critical applications (such as life support) where a failure of the ESPROS product would reasonably be expected to cause severe personal injury or death, unless officers of the parties have executed an agreement specifically governing such use. Buyers represent that they have all necessary expertise in the safety and regulatory ramifications of their applications, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of ESPROS products in such safety-critical applications, notwithstanding any applications-related information or support that may be provided by ESPROS. Further, Buyers must fully indemnify ESPROS and its representatives against any damages arising out of the use of ESPROS products in such safety-critical applications.

ESPROS products are neither designed nor intended for use in military/aerospace applications or environments unless the ESPROS products are specifically designated by ESPROS as military-grade. Only products designated by ESPROS as military-grade meet military specifications. Buyers acknowledge and agree that any such use of ESPROS products which ESPROS has not designated as military-grade is solely at the Buyer's risk, and that they are solely responsible for compliance with all legal and regulatory requirements in connection with such use.

ESPROS products are neither designed nor intended for use in automotive applications or environments unless the specific ESPROS products are designated by ESPROS as compliant with ISO/TS 16949 requirements. Buyers acknowledge and agree that, if they use any non-designated products in automotive applications, ESPROS will not be responsible for any failure to meet such requirements.