General Description

The epc660 Evaluation Kit is a fully assembled and tested camera system designed for the evaluation of the epc660 Time of Flight (TOF) imager. The basis of this kit is the DME 660 distance measurement camera which provides all necessary hardware to operate the epc660 imager chip, including both the camera lens and illumination. The system is fully controllable by an intuitive GUI on a PC or Mac computer.

The DME 660 distance measurement camera is a standalone 3D TOF distance measurement camera with a resolution of 320 x 240 pixel (QVGA). This camera system is built from a combination of three independent parts: An epc660 sensor board with a 108° FOV lens, an LED illumination board, and a BeagleBone Black as a host controller board. The host controller board provides a powerful and flexible development environment for the design engineer.

The very wide field of view (FOV) of 108° is a perfect basis for an application evaluation. The normal operating range of the included LED illumination board is up to 10m, depending upon the selected integration (exposure) time and the object reflectivity. 39 full frame TOF images per second in full resolution allow for very fast imaging applications. The extreme high sensitivity of the imager chip epc660 also allows for very short exposure time.

Features

- Complete development system for applications using epc660 Time of Flight (TOF) imager
- FOV 108°, operating range up to 10m
- Open-source controller environment with integrated BeagleBone Black controller board
- Computer (PC/Mac) connectivity with USB or RJ45 Ethernet
- User software (PC/Mac) with visualization and logging features
- Firmware based on open-source tools

Kit contents

- DME 660 distance measurement camera engine
- GUI software for PC and Mac
- Documented SDK based on open-source SW and HW
- Power adapter and USB cable
- Flexible tripod for easy setup

Block Diagram

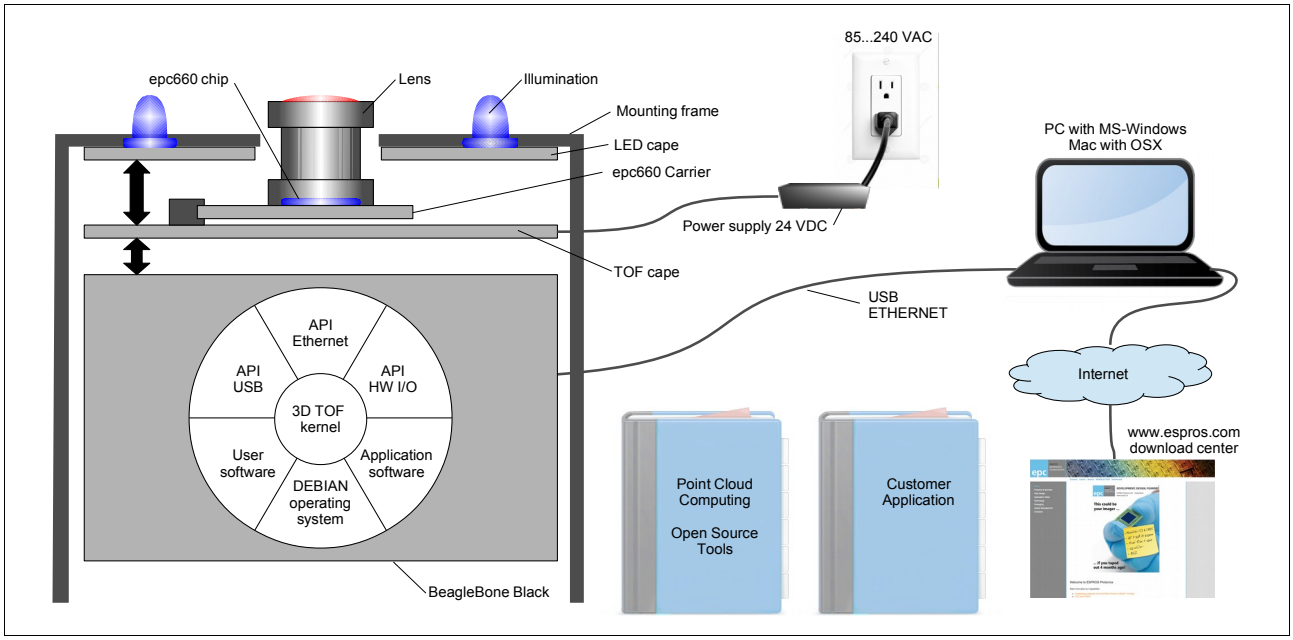


Figure 1: Functional block diagram of the epc660 Evaluation Kit

Main Features

■ **General**

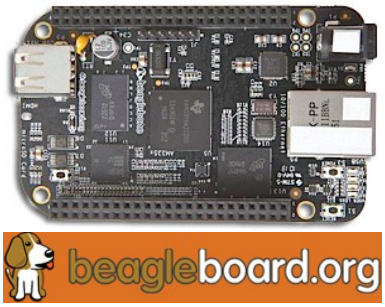
- □ 3D TOF camera, 320 x 240 pixel-field, backside illuminated
- □ Field of view (FOV) approx. 108°
- □ Standard lens holder

■ **Integrated LED illumination board with 8 LEDs**

- □ Operating range 0 … 10m (depending on object reflectivity and exposure time)
- □ LED feedback for drift compensation

■ **Host controller**

- □ BeagleBone Black



- □ Processor: AM335x 1GHz ARM® Cortex-A8
- □ 512MB DDR3 RAM, 4GB 8-bit eMMC on-board flash storage
- □ 3D graphics accelerator, NEON floating-point accelerator, 2x PRU 32-bit micro controllers
- □ USB client for power & communications, USB host, Ethernet
- □ Open-source tools

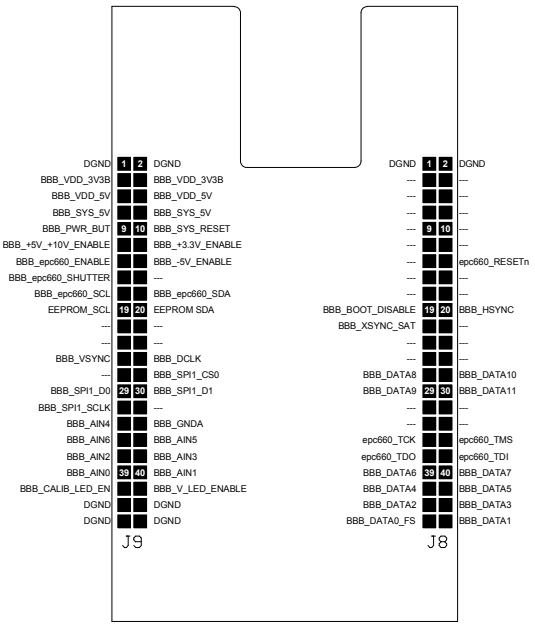
■ **Power supply (included)**

- □ Input: 100 – 240 VAC
- □ Output: 24V / 2.5A

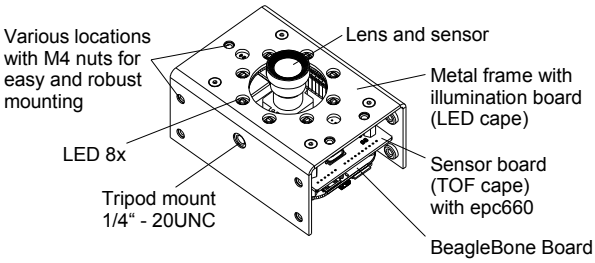
■ **Dimensions of the camera module DME 660**

- □ 90 x 70 x 50 mm (L x W x H)

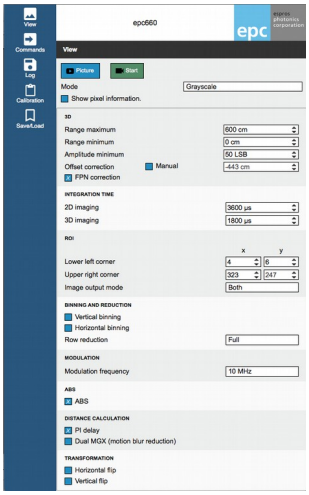
■ **TOF Cape Pinout**



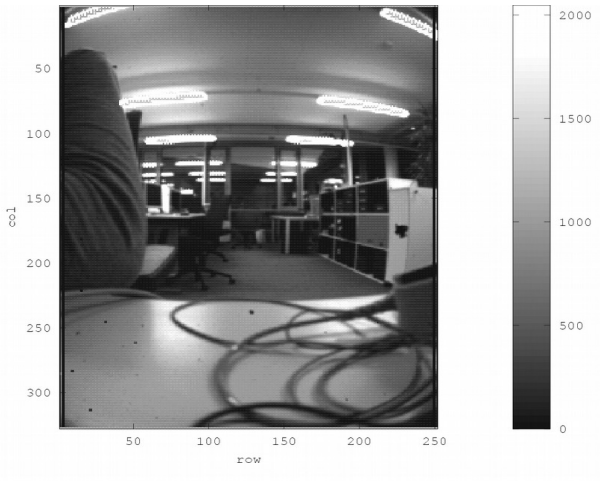
DME 660 Hardware



Operating Software



GUI software to operate the epc660 chip in various modes like 3D TOF color coded and point cloud, grayscale image, DCS. Exposure time settings, etc.



Greyscale image taken with epc660 Evalkit

Ordering Information

Part no.	Part name	List price CHF/pc	Comments
P100 280	**epc660 Evaluation Kit, Version EU & US** **Power plug EU Europlug (CEE7/16)** **and US adapter (NEMA 1-15, 2pole)** including the distance measurement engine DME 660, power supply, cables, tripod, software downloadable GUI, license for future purchase and use of the epc660 chip and DME 600 distance measurement engine	4,950.00	• Comes in a toolbox (picture above is a representation and is subject to change). • Includes DME Cover Plate Set for Face ID. • Includes the book "3D TOF - A guideline to 3D-TOF sensors that work".
P100 518	**DME 660-108°/10m** distance measurement engine including camera board, camera lens, illumination board, BeagleBone Black board, SD memory card, metal mounting frame, fully assembled and tested	1,386.00	• Requires a prior purchase of one epc660 Evaluation kit for license. • Volume pricing on request. • Customized configurations on request.