CHIPS.

Newsletter
November 2017

There is no substitute for hard work.

Thomas A. Edison

CEO's Note

Dear CHIPS readers,

In this issue we celebrate the market entry of a new member of the ESPROS cwTOF imager family: the epc611.

It is only 2.65mm x 2.7mm in size and provides a 8x8 pixel field, that can be used in an unprecedented number of operation modes. In this way the chip can be configured for all known and hopefully many new TOF imager applications.

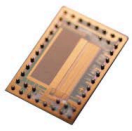
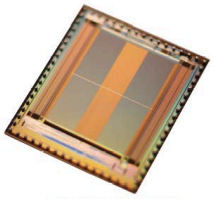
Very encouraging: the chip turned out as being first-time-right! No revision needed. Initially, we had some trouble talking to the chip, however that was just due our slow PCB electronic, as the epc611 is extremely FAST.

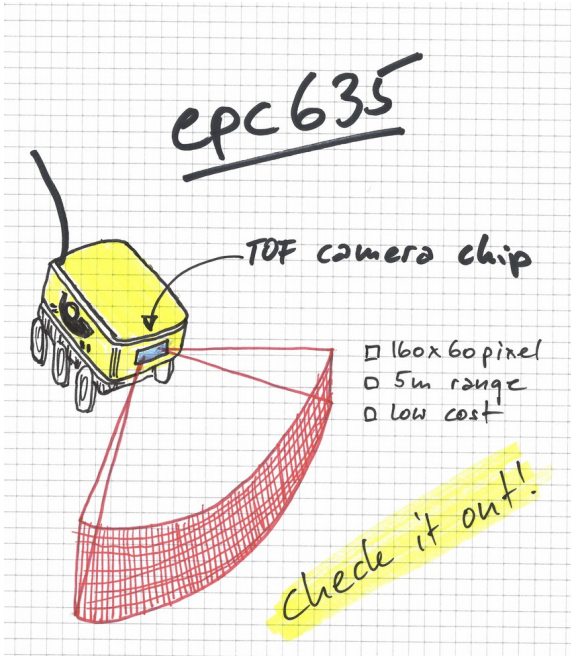
The epc611 will become one of our high volume products in the coming years, accordingly we placed its production right away with our fab partner TSMC. Please see for yourself and get your epc611 samples now!

Beat De Coi

ESPROS product family complete!

With the arrival of epc611, the ESPROS cwTOF product family is now complete. Please find below an overview of the main applications and the right solution product from ESPROS. All three imagers epc660, epc635 and epc611 are mass produced at TSMC. Only ESPROS can offer such a line-up today!

Application	Task	Image Sensor
Drones	Distance over ground (soil, vegetation)	 epc611 8x8
Car Park	Vehicle on pitch J/N	
Door	Distance to floor / Closing position / Obstacle	
Vacuum cleaner	Distance to obstacles / Rotating sensor	
Traffic census	Counting and classification of passing vehicles (Car, Truck, Motorcycle, Pedestrian)	
AGV	Obstacles / Navigation / SLAM	 epc635 160x60
Automatic doors	Opening with approaching persons / Security / People counting	
Robots	Obstacles, Approaching persons	
Escalators	Approaching persons / Detection of traffic jams at the end of the escalator	
People counting	Recognition and counting of persons / Measurement of body height	 epc660 320x240
Gesture control	Recognition of gestures	
Room monitoring	e.g. seating positions in the vehicle	
Navigation	High-resolution monitoring in 10-20m environment	
Patient monitoring	Detect presence, Breathing, Lying position	
Face recognition	Recognize details of facial features	
Focusing	Focusing aid for cameras	

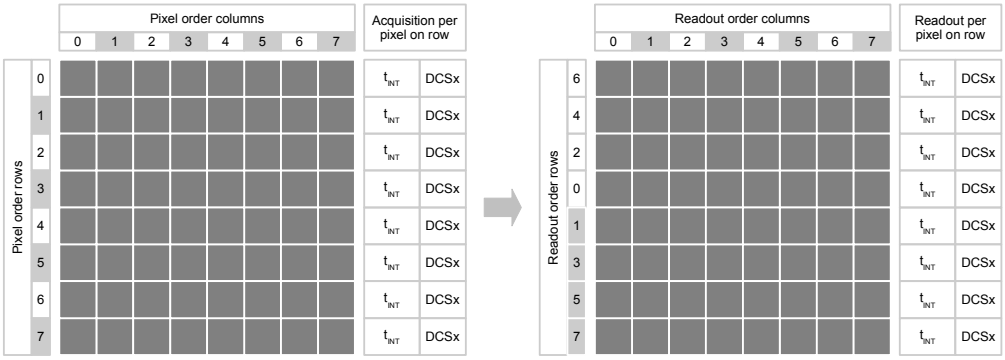


Delivery Robot with epc635

Here some of the many operations modes of the epc611. Our design goal was to provide the optimum mode for any application and to generate an ultra fast imager.

a.) 8x8 pixel imager

This mode is used, when you want to obtain an 8x8 pixel point cloud of the field of view. Applications include simple gesture recognition, door protection, presence detection near machines, gates etc.



TIM mode: 8x8 pixel 3D TOF Imager (left: data acquisition, right: imager readout)

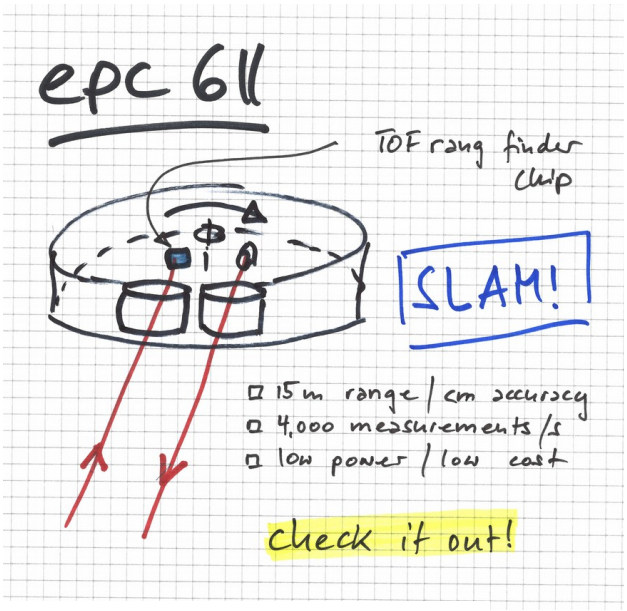
b.) Fast range finder

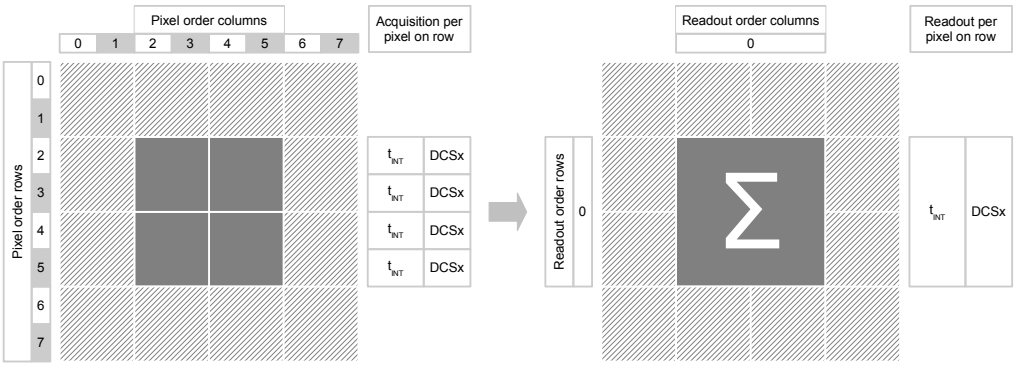
One of the key drivers to generate epc611 was the fast distance data acquisition to realize SLAM applications with rotating sensors. Applications are vacuum cleaners, AGVs, robots and in general all robots/vehicles, that move and navigate autonomously and need 3D information from one plane.

The sketch on the right side shows a scanner built around an epc611 chip. The features such a system can achieve are remarkable:

- 15m operating range-finder
- Range measurement accuracy in cm
- up to 4,000 measurements per second which allow a rotating speed of 10Hz and a 1° resolution

The whole device operates at very low power and comes for a very low cost BOM. Check it out!





UFS mode: Ultra Fast & Sensitive range-finder (left: data acquisition, right: imager readout)