CHIPS.

Newsletter
June 2015

> **An original is not one who imitates nobody, but one whom nobody can imitate.**
>
> *Vicomte de Chateaubriand*

CEO's Note

Dear Readers,

The ESPROS TOF technology is gaining huge momentum. The delivery start of the 3D-TOF QVGA imager was excellent. Customers immediately recognized the performance of our OHC15L technology. A QE of more than 80% at 850nm wavelength and pixels with 100% fill factor provide unmatched sensitivity with very low illumination power. A reference design of a camera engine with a horizontal FOV of 94° achieves a 10m range in the full field. Ok, this is on a white target. But the exposure time is a few milliseconds only.
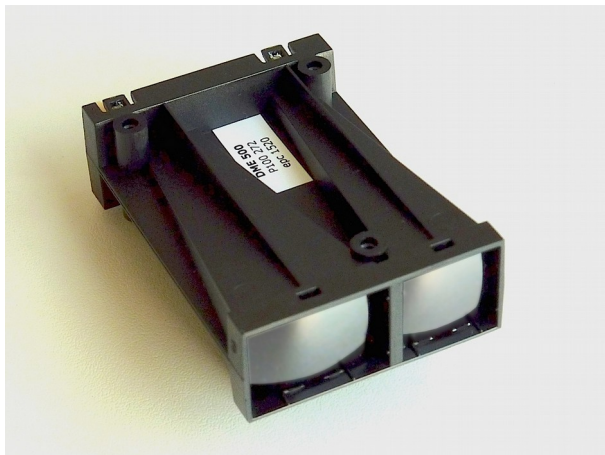
The next issue of this CHIPS. newsletter will be dedicated to this remarkable product range.

Today, we would like to stress something very simple: a single spot range finder based on the epc600 TOF chip. It is a device which was designed to be part of a specific product which needs area mapping. It is installed on a fast rotating turntable. By synchronized sampling, the host controller gets an area map based on polar coordinates (angle and distance of the vector). The DME 500 is designed to be very low cost, very light weight and very easy to use. It's available now!

Beat De Coi

DME 500 - a low cost range finder

DME 500 is a distance measurement engine based on the epc600 chip. It allows distance measurement with an accuracy of a few centimeters in a very cost effective design from a few centimeters up to 10 or more meters.
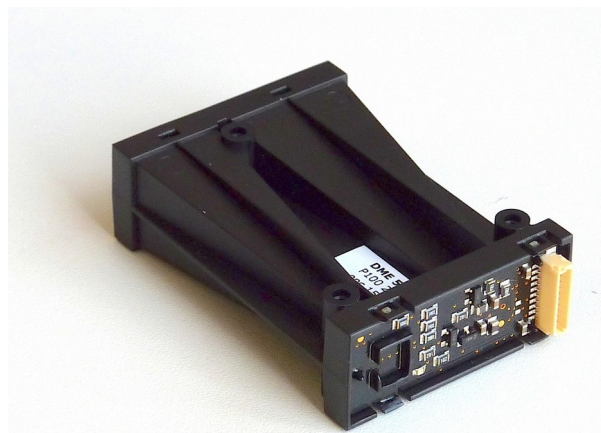

Figure 1: DME 500 with emitter lens (right) and receiver lens (left)

The firmware is built to operate in a high dynamic range of up to 90dB. However, the aspheric lens design is optimized in order to reduce the required dynamic range as much as possible. A high dynamic range can be used even with a high measurement rate of 500 measurements per second.

The DME 500 comes fully calibrated so the user can just readout the clean distance data. The device is designed in a lightweight but very stable plastic frame to allow it to be mounted to a fast rotating turntable. Mounting posts on top and on bottom allow various mounting locations and concepts.

Since the original application was to measure distances of moving objects - from the sensors perspective - motion blur typically reduces the performance of the distance measurement. The DME 500 has a built-in motion blur suppression for better performance. Certainly, temperature compensation is a feature that comes along with the use of the epc660 chip anyway.

Figure 2: Backside view with the PCB and the 10-pin connector

All configurations (and there are plenty) are done via a UART interface. The baud rate of 1MB/s offers a very low communication time to realize a fast system.

An integrated EEPROM holds factory settings and production and configuration data.

epc
espros photonics corporation

Features DME 500

- Up to 10 m distance measurement range
- Measurement rate of up to 980 measurements per second
- Very light weight
- Low power consumption
- Very robust and stable
- Temperature compensated
- High speed serial interface
- Small detection spot 20mm @ 1m

Applications

Many application can be solved with this very easy to use and very versatile device:

- Rotating scanners for scenery mapping
- Level measurement
- Object classification
- Object detection
- Truck loading bay surveillance
- People or object counting (needs 2 devices)
- Height measurement
- Lighting control

Figure 3: Height measurement is an ideal and easy task for the DME 500 (image of wallstickerdeal.com)

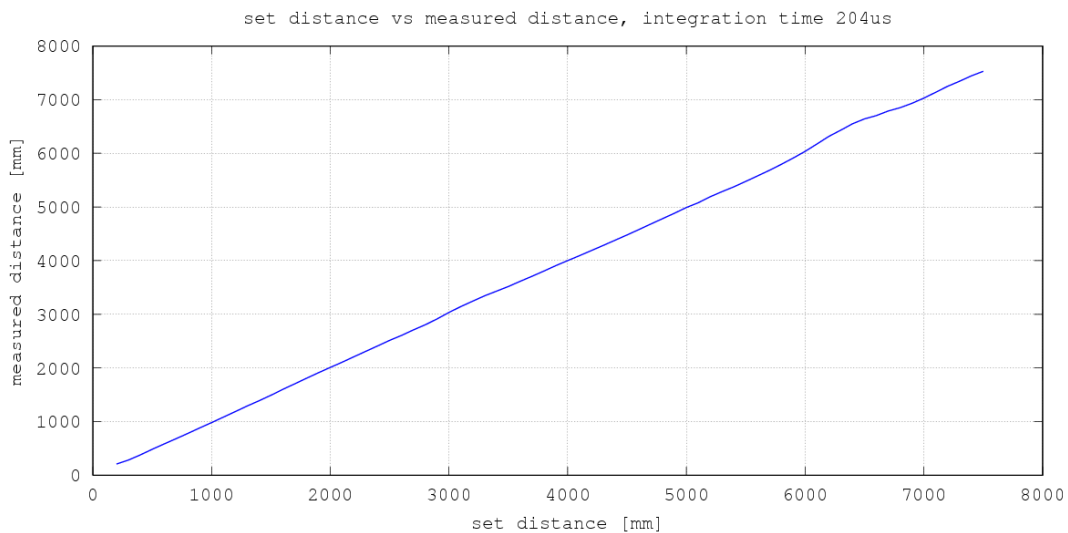Learn more from our website at section

Downloads/02_Cameras_and_Modules

set distance vs measured distance, integration time 204us

Figure 4: Distance map generated at a speed of 500 measurements per second

Sales

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