

Whatever you can do or you dream of - start it. The boldness is genius, power and magic.

Johann Wolfgang von Goethe

CEO's Note

Dear Reader,

Tomorrow, I will do this and that. Ok, maybe the day after tomorrow. Or, maybe never. There are so many tomorrows. Who, dear distinguished reader, was never in such a situation where an important task had to be done but was postponed in an endless sequence of «tomorrows» due to other currently more important topics which popped up. Like my monthly editorial of this newsletter. Well, the number of tomorrows of the editorial is limited. In February there are 27, in other months up to 30. So, finally, there is an ultimate deadline.

When we decided to pursue the dream of implementing a CMOS/CCD process optimized for TOF applications, many opportunities other than TOF for this technology popped up. They appeared as very attractive business opportunities. Sometimes we tried to follow the sweet taste of the honey of such opportunities. We were not always successful.

But we were successful in quickly finding the way back to our path. There are always very good ideas around. Too many ideas to turn into action and finally into achievements. Thus, I learned in my entrepreneurial live that a «Stop List», with carefully selected «not to-do's», is as important as a to-do list.

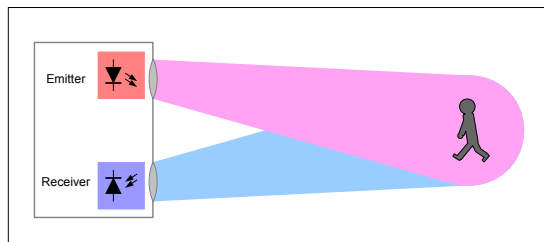
We remained (quite) stable focusing on our initial target. With lots of genius concepts, designs, processes and with an unstoppable power, we achieved many magic things. Like a 250 MHz shift clock CCD on standard CMOS. Or a quantum efficiency in the NIR 90% at 850nm.

I would like to thank all my colleagues here without them these magic features would not never have been possible. They were always working hard and focused to achieve this tremendous success.

Beat De Coi

Optical Power Budget Calculation Tool

The most important parameter for a successful implementation of a TOF sensor or TOF camera is the optical power budget. Since TOF systems "live" from the reflected light from the target by the camera illumination, it is important to know, how much illumination power I need to get enough light reflected back.



Principle optical path

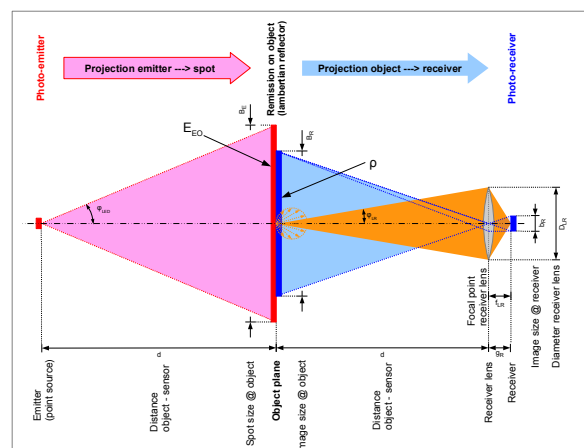
It's not rocket science to do this calculation. However, such calculations are typically not done every day. In order to help TOF camera design engineers, we developed a calculation tool that does this task.

Beside the calculation of the irradiance (power per area) of the imager pixel, it calculates the electrical power needed for the illumination, it contains a database of illumination sources like LED, VCSEL, and Laser Diodes. In addition, duty cycle is calculated, distance noise and so on. As a new feature, eye safety appraisal for LED illumination is provided as well.

The tool can be downloaded for free at

www.espros.com/downloads/09_Application_notes/AN02_3_TOF_estimation_tool.xlt

If you need support in starting your TOF project by the calculation of the optical power budget, contact your sales representative. He would be very happy to support your important task.



Calculation concept to calculate the reflected optical power (irradiance) by a given source, FOV, object reflectivity, receiver lens and detector sensitivity

Chongqi Yu, Characterization Engineer



Dr. Chongqi Yu has worked for ESPROS for four years. As a characterization engineer in our technology group, he is responsible for wafer acceptance test data evaluation, device characterization, modeling and qualification, development and execution of electrical and optical measurements and simulations, as well as yield data analysis.

"A very wide scope of tasks which makes the life of an engineer very exciting", Dr. Chongqi Yu says.

He likes to work in the technology group which provides the opportunity to be involved in the development of ESPROS unique CMOS-CCD technology.

Dr. Yu has his roots in Shanghai, China, where he was born and where he got his first engineering degree. He moved nine years ago from Shanghai to Lausanne to extend his studies and to achieve his PhD. Switzerland and China are completely different but Chongqi Yu is happy to be here. He loves the beautiful landscape with gorgeous lakes and mountains, the good food and the fact, that Switzerland is in central Europe which is a perfect location for traveling.

When he is not working for ESPROS, he is traveling (as perfectly shown in the picture 😊) in different countries or doing sports (e.g. badminton, table tennis, swimming, ski).

ESPROS floorball team at UHC Alligators Malans tournament

Every year, one of the most successful floorball clubs in Switzerland, the UHC Alligators Malans, organizes a sponsored tournament. This year, as usual, an ESPROS team took part. With a lot of energy and a cheerful mood, the ESPROS team tried to win against Keller Laser, CEDES, Baulink, Repower, GKB, Terno and the functionaries of the UHC Alligator Malans.

We even made it to the top of the ranking at the end - well, if you turned the page upside down then we did. No matter, the result couldn't break the good mood.

After the tournament we had the chance to watch the professional players at work. It was a very exciting match with a win for the home team UHC Alligators Malans.



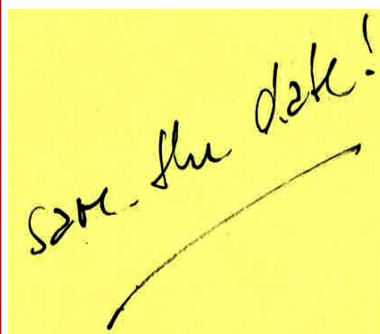
ESPROS products by Digi-Key



ESPROS and Digi-Key agreed on a world wide distributorship. We will announce this important step getting closer to our customers and allow

the ordering of our products in the Internet 7/24 in the next issue of this CHIPS newsletter. However, you already can check it out at www.digikey.com and search for ESPROS. Digi-Key and ESPROS appreciate your business!

Our TOF Developer Conference is back in 2020!



TOF
Developer Conference

January 28th - 30th San Francisco

Coming soon:

February 25th - 28th Seoul, Korea

tentative: March 3rd - 5th Tokio, Japan

More Details!

++ Be part of our team and click here for our current job opportunities ++