



Time is the coin of your life. It is the only coin you have, and only you can determine how you spend it. Be careful lest you let other people spend it for you.

Carl Sandburg

CEO's Note

Dear Reader,

Christmas season is a time in the year to slow down, lean back, think about the past year. And of course, for the Christian community in the world, it's one of the most important events as celebrates the birth of Jesus Christ. A child is born. This is in itself a marvel, not just the birth of Jesus Christ. However, believing in a higher force is very important for most of mankind. To me, it seems that such faith has become forgotten, due to the constantly increasing pace of life, of things changing ultra quickly, and due to the speed of information. Information, which is mostly unnecessary or sometimes even fake. Due to this, we let ourselves be rushed and stressed. Instead of thinking twice, news is needed to known early so as to be the first distributing it to the commu-



nity. The quote of Carl Sandburg was probably meant in a different way. I don't know. But how many hours in a week do we spend doing useless things with our smartphone. At least, most things we do are really not sustainable. Reading a good book, training skills in music, sports, language, studying natural science, nature, universe and the like has much more potential than swiping through news on the cellphone which is not new, merely endless repetition and which merely steals time. Let me repeat the quote of Carl Sandburg: "Time is the coin of your life. It is the only coin you have, and only you can determine how to spend it. Be careful lest you let other people spend it for you."

In this sense I wish you a peaceful Christmas season and a Happy New Year. Relax!

Beat De Coi

Carnavicom LiDAR using epc660

Press release from Carnavicom:

Carnavicom, a company specializing in automotive electronics development, entered the TOF LiDAR sensor market. Carnavicom has completed the development of the previous technology for the TOF-based short-distance lidar module, starting mass-production in the first half of next year.



The TOF LiDAR sensor developed this time is a QVGA (320x240) level image sensor from ESPROS. It boasts a high recognition rate regardless of day or night in addition to incredible precision.

The TOF LiDAR sensor can quickly recognize three-dimensional objects or 3D data of spatial informa-

tion. When implementing technologies such as virtual reality (VR) and augmented reality (AR), the convenience and application potential are large. Carnavicom is expanding and applying lidar technology to the smart city field.

Carnavicom will participate at the Consumer Electronics Show (CES 2022) held in Las Vegas, USA on January 5, 2022 and introduce two models of TOF sensors.



West Hall Transportation & Vehicle Technology

Carnavicom: Booth 6966

Jong-taek Jeong, CEO of Carnavicom, said, "As the TOF sensor market expands, we plan to expand the lineup with various resolutions and recognition distances." In the industrial field, we will maximize utilization and take the lead in commercialization with realistic prices and technical support."

Find out more [here](#) on the company's homepage.

As usual at year's end, people celebrate. As did we on December 10. Employees and their partners met first in our own "underground facilities" for a cocktail. The facility management staff and many support staff prepared this venue to create a beautiful ambiance. However, the star there was a brand new TOFcam-660-RGB which streamed the event as a colored 3D view. The result can be seen in the picture on the right. Unfortunately the picture quality is a bit crude because it has been taken from the video screen.

However, even with the low quality image, the result is very impressive. These are true 3D/color images. This achievement alone was a good reason to celebrate. However, more details cannot be disclosed here.



3D image with mapped color image



CES 2022

ESPROS' TOF technology is the true one, which allows the use of TOF and LiDAR solid state cameras under full sunlight conditions without limitations, except the sunlight shot noise. But the effect of the sunlight shot noise is so small, that it can be neglected. This is on the one hand due to the extremely high quantum efficiency in the near infrared. And on the other hand, imaging with ESPROS OHC15L technology allows sampling time as short as four nano seconds. Not enough time to collect many ambient light photons! And, last but not least, our CCD technology allows electron multi-

plying by multiple acquisitions which is called TDB*. This technology increases significantly the sensitivity without losing the time information. That's the reason, why leading automotive Tier-1 players have chosen the epc660 as their imager in near field LiDAR applications.

You can see this technology live at CES, Booth 6976, West Hall. Come and visit us.

*TDB (Time Domain Binning) was invented by ESPROS more than ten years ago.

You want to purchase our products? Check out on [Digi-Key](#) or get in touch with our [sales team](#).



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