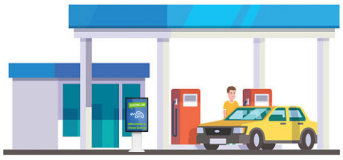
e-con Systems

Think Camera. Think e-con.

Leveraging AI-led vision to help a US-based leading provider of fuel dispensers build digital signages

e-con Systems empowered a US-based leading provider of fuel dispensing equipment solutions with the perfect camera to smarten their interactive digital signages.



About the client

Based in the US, the client is a global leader in delivering advanced fuel dispensing equipment, electronic systems and payment, and wetstock management solutions. Their manufacturing and technology development presence extends around the world.

Key challenges and customer's expectations

The customer required a next-generation, interactive fueling kiosk which could function – unmanned - without any human presence. One of the challenges was that the camera

system needed the AI power to work with facial analysis technology like biometric facial identifiers to identify customers. It was crucial to provide information or advertising based on customer emotions and behavior.

Another challenge was ensuring operability in outdoor environments. It had to be aligned to meet lighting and other imaging aspects related to different weather patterns.

Some of the client's unique requirements were:

- Ability to operate in a wide operating temperature range
- High resolution - 1080p with YUV format
- Easy to integrate with AI algorithms for facial recognition

Selection of the camera module

e-con Systems selected See3CAM_CU20, a 2 MP HDR camera that came with a wide operating temperature range (-40°C to 85°C). It also had a wide vertical FOV to recognize people up to 30-feet distance and deliver personalized user experiences, including promos.

With a high dynamic range and controls for auto white balance and exposure control, it was perfect for outdoor lighting conditions. We also completed the pre-compliance emission testing processes and helped clear FCC certifications.

How e-con Systems delivered a hassle-free solution?

e-con Systems had to think out of the box since we had to achieve a coverage of 2 to 8-feet with a 2-feet working distance. Hence, we mechanically placed the camera by rotating it 90-degrees to get the full FOV on the vertical side before rotating the image at a 90-degree angle in the application. We also implemented the lens focus to a hyperfocal length that provided higher image sharpness at 30 feet. Our gluing method to fix the lens helped avoid any vibration-related misalignment. In the end, we met their expectations by:

- Providing wider FOV that eliminated any chance of image blur
- Enabling quick integration to AI algorithms for anomaly detection

Business benefits

- Quicker timeframes and full support – from design to development and production
- Superior image sharpness while capturing images of materials on the conveyor
- Seamless customer experience in unattended kiosks
- Fully certified to stay compliant with industry regulations

Talk to us

Would you like to know more about how you can make your unmanned digital signages smarter with AI-powered vision technology?

Connect with our product manager, who worked on this vision-based solution, and get started!

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About e-con Systems™

e-con Systems has been a pioneer in the embedded vision space; designing, developing and manufacturing custom and off-the-shelf camera solutions since 2003. With a team of 300+ extremely skilled core engineers, our products are currently embedded in over 350 customer products. So far, we have shipped over 2 million cameras to the United States,

Europe, Japan, South Korea and many more countries.

Our cameras are suitable for applications such as autonomous mobile robots, smart agricultural devices, medical diagnostic systems, smart checkouts/carts, sports broadcasting systems, industrial handhelds, drones, biometric systems, etc.

Our wide portfolio of products includes MIPI camera modules, GMSL cameras, USB 3.1 Gen 1 cameras, TOF cameras, stereo cameras etc. e-con offers a wide variety of cameras with low light performance, HDR, global shutter, etc. These cameras range from a resolution of 2MP up to 18MP.

We are also powered by a strong partner ecosystem to offer end-to-end vision solutions, including sensor partners, ISP partners, carrier board partners, etc.

What sets e-con Systems apart is our deep expertise in building customized product designs while ensuring rapid prototyping and custom modifications in camera hardware and software, including form factor modifications, ISP tuning, carrier board development, lens calibration, and much more.

By empowering machines to see, e-con Systems looks to create a world where humans have enriching life experiences so that they can make the world better.

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