A collaboration with TELMAX:
The MDI-4100 in a fare collection system

TELMAX

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Introduction

TELMAX develops and implements fare collection systems mainly in Czech Republic and Slovakia. TELMAX's systems offer automated check-in for all types of travel documents; paper, SMS, contactless transport card, bank cards. The system covers a wide range of devices and services including physical devices installed in public transport vehicles, vehicle location and monitoring systems and ticket e-shops.

To provide a new method of automated paper ticket validation, TELMAX required a reliable QR code scanner small enough to be built into their passenger console unit.

The Situation

The existing passenger console unit (FCU 800) is a compact device with limited space inside. In the past, TELMAX developed their own camera-based text recognition device that was unnecessarily powerful and too expensive for the current task.

The device they developed consisted of a powerful System-On-Module with an operating system and a lot of memory. The current public transport ticketing has moved to machine readable codes utilization (mostly QR or Aztec). Thus, the device was too powerful, too expensive and still not as fast as a specialized 2D scanner in this application.

The Requirements

Based on the good experience with the Opticon MDI-3100 scanner in another ticket validator, TELMAX decided to develop a compact add-on device which fit all requirements:

1. Dust proof device with a glass covered window at a reading distance to provide a defined position for the ticket placement.

2. Large viewing angle seemed to be necessary to keep the device small while reaching a wide reading area.

3. Ability to read a code from a paper ticket (auxiliary light required) and from a mobile phone display as well (has its own backlight).

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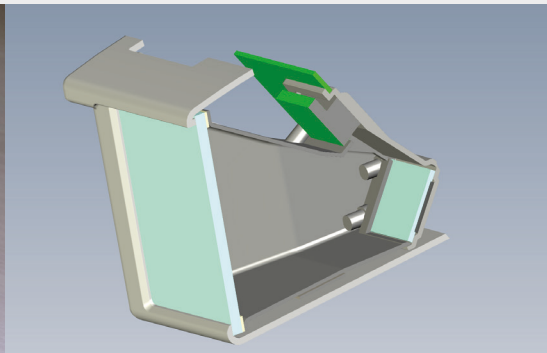
MDI-4100
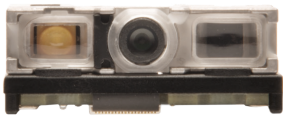
The Solution

TELMAX used a housing that was developed earlier for a camera-based device, to benefit from a proven construction and shares some parts. It makes both solutions exchangeable in accordance with future project requirements.

The wide viewing angle was achieved with the help of a mirror which allowed it to "fold" the optical path to a compact shape. TELMAX used a front surface mirror, custom made by a local company.

As the glass covered window had to be parallel with the MDI-4100 scanner it caused reflections when using an MDI-4100's built-in light source. TELMAX developed an auxiliary flood light source which eliminated the reflection.

The MDI-4100 scanner with its compact size, high scanning performance and reliability allowed TELMAX to create a perfect solution for a new paper ticket checking technology. Re-using most of the existing devices, the new add-on device is cost effective and affordable for many customers. This device can also be shared among other TELMAX's ticketing devices.

The Range

Opticon's state of the art, high-performing engines are reliable, compact and easy to integrate with products and business processes. The angle of the scanner varies per product. Opticon's wide range of scan engines are made using high-quality materials and adhere to demanding regulatory and safety requirements. See our range of scan engines on www.opticon.com.

About Opticon

From the start, over 40 years ago, Opticon has been one of the first companies in the world to specialize in manufacturing barcode scanners and nowadays also provide ESL and Digital Signage solutions. Thousands of companies have identified Opticon as a trustworthy partner. Opticon produce reliable identification devices, but always with the understanding that they are merely a means to an end. The real product is the ability to see and hear our customers' needs and to provide them with the best suitable solution for real life practice.

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