

Dijital TANIMA Sistemleri

AIC20 –AI based passenger counting camera

Draft Web document



1. Overview

AIC20 is a state-of-the-art AI based passenger counting camera for use in public transport vehicles – busses, trams, metros, trains, etc.

AIC20 is built of powerful CPU with AI processing unit and a special infrared global shutter camera with IR LED illumination. Thanks to this AIC20 is capable of accurately detecting and counting passengers, getting on or off the vehicle.

AIC20 integrates a 3D acceleration sensor and has two digital inputs:

- for detecting the ignition switch state and correspondingly implement power management functions
- for the on/off switch of the relevant door and by this compensate unnecessary passenger movements under the camera while the vehicle is in motion.

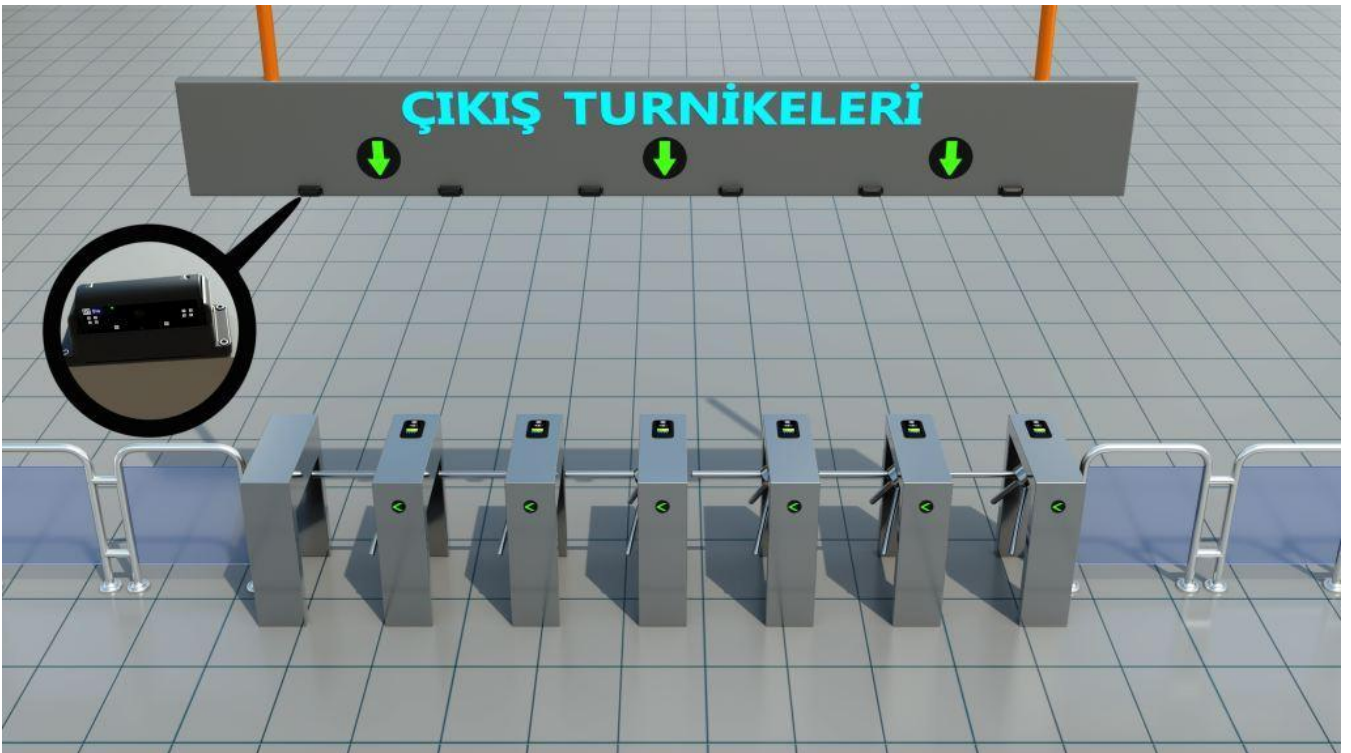
The main communication interface of AIC20 is Ethernet. The camera supports all network protocols. When a separate camera on each bus door is used and the cameras are on the same network backbone, one of them can be configured as the master camera that can consolidate the information coming from the slave cameras, report over a WEB interface, communicate with a back office server. Additionally, in case of multi-camera use, a dedicated intelligent passenger counter controller (PCC7) is also offered, capable of providing:

- the necessary communication network for 7 cameras,
- 8 digital inputs,
- Acceleration sensor,
- providing power management of the entire system,
- communicating with a back office server over LTE or Wi-Fi,
- consolidating the information coming from the cameras and reporting over a WEB interface
- others.

Thanks to the above mentioned acceleration sensor and switches, the master camera or the dedicated intelligent controller can determine the exact number of passengers in the vehicle. In addition, very useful statistics about passenger flow can be generated.

2. Application areas

Passenger counting in public transport



3. Specifications

OS	: Linux
CPU	: 64 bit Dual Core, 1500 MHz
AI Coprocessor	: 3TOP / sec, INT8
RAM	: 1GB/2GB DDR3 RAM
System memory	: 8GB e-MMC Flash Memory
SD Card support	: 1 slot supporting up to 64 GB micro SD cards
Real Time Clock	: With Li backup battery, 10 years maintenance free
Audio	: 2W speaker
Indicators	: 2 x RGB LEDs
Communication	: 1 x 100 Mbps Ethernet : 1 x USB2.0 : 1 x UART - RS-232
Camera	: 1 x 1MP IR global shutter camera : IR LED illumination : 90° M12 non-distortion lens : 97% accuracy for people counting
Digital Inputs	: 1 x digital input with optical isolation for the ignition switch : 1 x digital input with optical isolation for the door open/closed switch
Digital Outputs	: 1 x Digital Output (Over-current protected)
Sensors	: 3D acceleration sensor : Ambient Light Sensor : Temperature sensor, measures cabinet temp.
Supply	: Operating Voltage: 9 ~ 36VDC, Max 7 Watt
Operating t°	: -20 C° ... + 60 C°
IP grade	: IP65