Touchless Fare collection *with* Rear-Door Boarding

ZED . digital

Allowing rear-door boarding is a critical step to protect frontline transit workers. **ZIG Transit** uses **sensor technology** to enable passengers to board at the rear-door with **contactless ticket validation**. The sensors auto detect when a rider boards and checks if that user has a valid ticket or pass to enter. A signal is sent to the driver to inform a valid or invalid entry.

Our solution enables **hands-free boarding** by validating fares instantly as users board, without riders having to remove their smartphone from their bags, scan a QR code, or tap a card. Our Bluetooth sensor-based validators reduce boarding delays and avoid over-touch surfaces.

1 How does rear-door boarding work?

Our ZIG sensors installed near the front and or rear door of the bus or rail coach will communicate automatically with the rider's mobile phone through Bluetooth connection and validate the ticket. The sensors emit a green light and a beep, indicating a valid ticket or a red light and multiple short beeps for an invalid ticket or expired pass. These signals can be suppressed or customized to your needs.

2 Do the sensors count the number of passengers onboard?

The sensors come with an automated passenger counter and a social distancing alert system. The passenger counter provides an accurate count in real-time of the number of passengers on board and the sensors provide a count of mobile ticket entries customized to your needs.

3 What is the accuracy provided by the sensors?

The accuracy of the validator is 98%. In case the sensors fail, the passenger can scan their phone on the sensor to validate. The NFC scanner provided will provide the backup verification. The driver can also verify the authenticity of the ticket with visual validation methods: the color and animated QR code, the expiry date count down by seconds, special fare status, touch screen validation to ensure this is not a screenshot.

4 Does the driver need a display? A Live visual display unit show drivers who is boarding. The display consists of a smartphone or tablet that is placed near the driver. The display is optional for front door boarding but is recommended for rear-door entries. The display streams video as each passenger enters and also displays the user and ticket details in real-time.

6 Does the rider need Internet to board? No internet connection is required for riders to board the vehicle to validate tickets. The user only needs to activate their Bluetooth and have the mobile app installed. ZED will provide the internet connectivity for the validators onboard the vehicles.

8 Can you integrate the sensor features with an existing app? Yes. The **ZIG** solution comes with ready-made mobile app to enable integration without extensive development. Do you have an existing mobile app? No problem! Our sensors can be integrated to your existing apps using our APIs within weeks.

5 What is the technology is used by the sensors? Our hardware validation sensors are based on BLE and NFC technology, the first of its kind in North America, to support completely hands-free boarding. The sensors measure approximately the size of a cell phone and weigh less than 3 lbs.

7 What is the range of the Bluetooth sensors? The range can be customized from a few inches to **over 40 feet** and is tailored to your specific transit and vehicle needs.

9 How long it takes to implement the solution? The sensors can be installed in less than 30 minutes per vehicle. The entire solution including your mobile app can be implemented within weeks.

10 Do the sensors need to be integrated to our existing onboard equipment? No. Our sensors can work completely stand alone. Any integration for reporting purposes can be done via the backend systems to reduce costs and installation time.