LITE is a ticket vendor, Smart card validator, driver console, onboard computer. In short, LITE is the main element of the Comprehensive Vehicle Management and Localization System **SIGLA**.

Very easy installation that provides all the functionalities of an SAE (Operation Assitance System) along with the most complex operations of and SVV (Validation and Sale System) in addition to the connection to all elements of the SIV (Information to Travelers System):

- Print **tickets**, roadmaps and settlements.
- Handles **databases** of several companies.
- Allows the vehicle to be **located** with its **GPS** receiver.
- Real-time reporting of all service parameters: speed, last stop, occupation, alarms, etc.
- Allows **data** and **voice** communication between the control center and the vehicle.

In the buses we installed a LITE as the main element of the system. This machine, despite being small in size, incorporates a large screen and an industrial backlit keyboard to interact with the driver.

This machineacts as the central computer of the installation and manages all the embedded elements comprising the following functionalities:

- **Sale of tickets** on buses by printing tickets with the custom format. It allows the selection of origins and destinations, as well as the selection of different types of discounts. It can also allow the sale of tickets with place in real time acting like a box office more, allowing totally the integration with the global system of sale.

- **Integrated termal printer** features automatic cutter for 58mm wide paper. The roll size is 58 mm of diameter with a maximun leght of approximately 50 meters, which allows printing more tan 800 banknotes with a single roll of paper.
- **Passenger control and road map**. The driver can visualiza the roadmap and occupation of the bus. In this way, the driver indicates to the system the seats thar are occupied at the momento when passengers Access the bus, controlling at this time if any place sold is left unoccupied, which could b eput up for sale if the time comes of output.
- **Non-contact card** consumption. Travelers with these cards are acommodated in the buses that present the cards in front of the contactless reader of the machine. In this way you benefit from the bonus rates. It also displays on a screen the money and travels left on the bonus card.
- **Recharge of bonus cards** on the bus. The vendor itself can sell and recharge the bonuses on the contactless cards although it is not recommended for security and comercial speed. It is preferable that these cards are rechardged at the recharge points that the Company has, whic can be automatic recharging points or company lockers.
- Allows the integrated payment with mobile phone through **NFC** technology…With the NFC system, users of the regular service will be able to purchase their travel certificates ''on line'' if any cardo r any other support of the entity, to move around the city. The movile is, in faact, the transport card that crossed the Access to the buses. To carry out the journey, it will only be necessary to bring the telephone to the validating terminal at a distance of less that 10 centimeters.
- It allows to work with **the loyalty card** of the Company, being able to be of the type without contacts and also serve as means of payment.
- Real-time sending/receiving of **messages** with the control center. They can be predefined or free messages. In this way, incidents, breakdowns, etc. can be reported.
- Allows you to establish and receive **telephone calls** with the control center. The installation incorporates a microphone and a speaker so the driver can talk to the control center when ncessary. To start the callo r answer it simply press a buttton on the machine's screen. You can configure other numbers that you can call if necessary.
- SIV manages all the information systems to the traveler that incorporates the bus such as the TFT screens that we can incorpórate, the system of public address, the panels of LED of the outside of the bus, etc.
- The system stores the **sales and collection** made by each driver so that each driver prints his closing sheet with the listing of what he has sold. This data is sent to the central system to check that the driver clearances are correct.
- The system works with a **GPS** receiver and a 2G/3G communications modem so the machine performs the location and SAE functions, sending its position to the central system every 30 seconds.
- **Driver control.** The system saves the momento in which the driver registers, starts the service or ends, as well as the moments of passage by stop being able to control if it performs the service with punctuality.

- **Time control of the work.** Shows the driver the theoretical time of stop by stop and its actual time of passage, indicating graphically if it isa head, delayed or in time, facilitating its work.
- You can monitor **alarms**, open doors or connect to the CANBus if it will be necessary.
- Collection of all data relating to the use of travelers and movements of buses for subsequent compute processing. Machine software is remotely updated automatically when necessary.
- The machine is remotely controlled to facilitate maintenance.
- The main advantage of this on-board ticketing system is its speed, and the time of issuing a ticket is less tan one second taking into account the intervetion of the driver himself.

General characteristics

- Housing in ABS and stainless steel.
- Dimensions without stand: 230 x 160 x 140 mm.
- Weight with support: **1.5 kg.**
- Extended voltaje range from **10 to 40 Vdc.**
- Operating temperatura: -10ºC to 55ºC.
- **EMC** standard multi-layer electronics (**CE** marked).
- **RTOS-XP** real-time operating system.
- Memory: **4Mb** flash, **2Mb** SDRAM and **64k** E2prom.
- Real time clock with universal calendar.

Driver console

- Backlit silicone keyboard with 24 alphanumeric keys and 6 function keys.
- Large graphic display 110x60mm, 240 x 128 pixels and backlit.
- Light and acoustic signals.

Instalation

- The anchorage is simple thanks to a stainless steel base fiex to the vehicle that allows the quick removal of the vending machine and the easy orientation to measure of the user.
- Low power consumption allows you to take the power supply directly from the vehicle's emergency circuit to be permanently located.

Communications

To connect all necessary peripherals such as infrared barriers for a passenger counting, electronic signs, chip card or magenetic band validators, LITE is equipped with the following communications ports:

- Opto-coupled digital inputs: for doors, fuel cap, odometer, emergency stop, etc.
- 1 integrated relay output up up to 3ª.
- Multiple ADC/DAC inputs/outputs.

- 3RS-232 communications ports.
- 2RS-485 communications ports.
- 1 USB 2.0 port and 1 power loop.
- Xpack Bay of memory type 'pendrive'.
- It can accommodate a WiFi module, a Bluetooth module or the special GPS/SM communications module **SIGLA**.

SIGLA communications module

- Last generation GPS locator.
- GSM with multi-band 'quintus' antenna.
- Ion-Li backup battery.
- 3 axis accelerometer.
- Watch dog hardware to avoid blockages.
- Connector for external microphone and speaker.

Printer (OPTIONAL)

- Very high speed: 25cm/second.
- Average life: 37 million lines.
- 2 rolls of 60mm thermal paper for more tan 500 tickets per roll.
- High resolution graphic mode.
- High resistance cutter.

Smart Card Validator

- ISO 14.443 A, B and NFC contactless card reader. Includes one SAM module and 4 other options. It also allows:
- Validation in DESFIRE® platform.
- External reader with ISO7816 contact.
- One-dimensional barcode external reader or BIDI.