

Contactless Solution For Public Transport

The type A+B stand-alone bus validator has been designed specifically for public transport applications. The validator is the ideal front-end device for the transport industry with its integrated contactless smart card reader, antenna, graphic display, audio and visual indicators, various network interfaces, all of which are enclosed in a strong waterproof case. A powerful real-time operating system together with the high-level contactless card access commands, robust communication protocols and standard (Unix-like) device driver interface libraries provide a convenient environment for third party application developers.

The type A+B stand-alone bus validator is supplied with device test and demonstration software. The real-time operating system, the device driver modules, system procedures and the application programming interface (API) libraries are pre-programmed and the device is ready for custom-software development. The custom-built operating system is based on a proven industry standard real-time kernel (RTEMS). This, together with the integrated hardware support, provides a high performance, flexible environment for embedded software development.



Applications

Because the stand-alone bus validator is end-user software programmable to handle specific customer requirements, it can be adapted to the most demanding of public transportation system.

Ordering

Please contact VFJ for customised solutions

Technical Specification

General Parameters

- Power input: 9-32 VDC (12/24 VDC nominal, maximum 1A @24V)
- Protection: reverse polarity (diode) and over-voltage protection (fuse)
- Operational temperature range: -20°C to +70°C
- Storage temperature range: -30°C to +85°C
- Humidity range: 10% to 90%
- Dimensions: 260 x 185 x 100 mm
- Weight: 2,220 grams (excluding mounting brackets)

General Features

- Integrated reader interface and antenna for ISO 14443 type A and type B contactless cards
- Ferrite shielded antenna, up to 70 mm card read/write operation range (with selected cards)
- Dual SAM card interface (GSM11.11, 3-5V cards, ISO 7816-3 T=0/1 protocol support)
- 32-bit long unique hardware serial number for device identification purposes
- 160 x 80 dots graphic display with LED backlight, contrast (software controlled)
- Two LED-array indicators (red cross, green arrow) with on, off and blink control
- Small audio module with speaker to allow playback of pre-recorded sound sequences
- Battery backed real time clock for standard time and date keeping services
- Two isolated 3-wire RS232 serial communications links (one is for debug/development only)
- Standard CAN network interface (high speed link to another validator and/or other devices)
- 1MB flash EEPROM module for safe and reliable transaction storage
- Two general purpose input ports (logic-0: Ground, logic-1: 3-24 VDC) with protection circuitry
- Strong water resistant plastic case (IP54) with pole-mounting arrangement
- Integrated high speed FM radio transceiver module with antenna interface (optional)

Hardware Core

- Motorola MC68376 micro-controller, 18.432MHz clock frequency
- Reset and power monitoring circuitry to manage the overall power consumption
- Custom designed FPGA with integrated hardware control logic to operate the device

Software

- Industry standard multi-tasking real-time kernel
- High level contactless card access, integrated networking & communication protocols, standard Unix-like file system interface for all device drivers (API libraries)
- Linux-based development system with GCC cross-compiler and debugger (optional)
- User programmable applications or customer specific operation (optional)
- Technical support and training (optional)

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