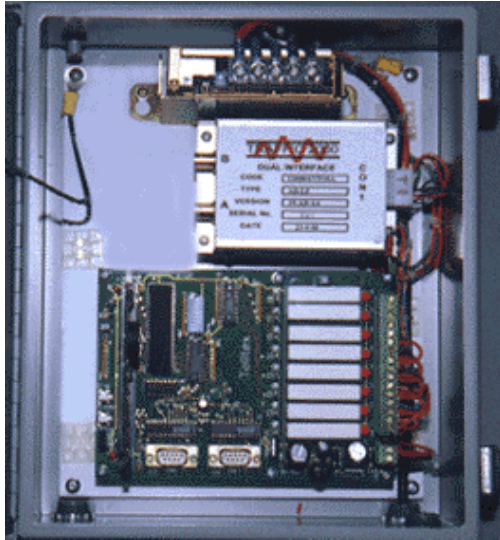
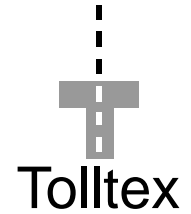


RoadMate

Tolltex Embedded Controller



The Tolltex RoadMate is a general purpose embedded controller that is designed to perform low-level control and monitoring of signals used in toll collection systems or traffic management systems. A typical use in the toll collection industry is Automatic Vehicle Classification (AVC). For ITS traffic management, the RoadMate can be used to monitor signals to count vehicles or axles.

For a project in Malaysia, the RoadMate is detecting axles and dual wheels and reporting vehicle classification data to the controlling computer via a serial RS232 communication link. The advantage is that the RoadMate sends a single message for each vehicle, thus off-loading the control computer of the tasks associated with processing multiple signals to arrive at the classification. The message sent to the control computer includes the number of axles, number of dual wheels, and vehicle class. Vehicle separation is performed by the use of light curtains.

The RoadMate features 8 digital I/O ports each with plug-in OPTO-type relays, an Intel processor, 1MB RAM, 2MB flash storage, 2 serial ports, on-board battery, 24 VDC power supply, quick connect terminals, and a NEMA 4 or NEMA 12 enclosure. Software is updated by using one of the two serial ports, the operating system is real-time QNX, and all programs are written in "C". The RoadMate is designed to be customized to meet specific application needs.

Summary

Processor: Intel 386EX 33MHz.

Permanent Storage: On-board 2MB flash disk for operating system and application program storage.

Memory: 1MB RAM.

Language: All programs are written in "C". Programs are updated via serial port, not by EPROM's.

Operating System: Real-time POSIX-certified QNX.

Serial Communications: 2- RS232 ports with male DB9s.

Power: 120/240 VAC, 50-60 Hz, low voltage 15 watt Power Supply for processor power and relays.

Temperature: 0 to +55° C.

Circuit Board Size: 7" W x .75" H x 5" D, including 8 OPTOs.

Enclosure: NEMA-4 or NEMA-12, 10.25" W x 5.25" D x 12.25" H, hinged front with gasket and hold-down brackets, 4 mounting plates, removable back panel holds circuit board and power supply.

Digital I/O: 8 - input/output ports each with plug-in OPTO-type SM relays for field I/O such as control or monitoring of gates, lights, loops, treadles, light curtains.

Field I/O: Plug-in connector allows easy connection of field wires. LEDs indicate On/Off status of relays for improved maintainability.

Applications: The RoadMate can be used in toll collection systems and ITS Traffic Management systems. Field I/O wires connect easily to a plug-in header and solid state OPTO-type plug-in relays can be configured as either input or output channels allowing sensor data such as loops, magnetometers, or thru-beams to be processed or devices such as lights, alarms, or automatic gates to be controlled.

Communications via serial lines allows data to be sent to a central control computer. Status request commands and configuration data from the central control computer can also be sent to the RoadMate.