

OMNI eX[®]

Intersection Control Software for ATC Controllers



CABINETS
CONTROLLERS
DETECTION
PARKING
SIGNALS
SIGNS
SOFTWARE
SPECIALTY

Overview

McCain's Omni eX[®] intersection control software is a modern, standards-compliant program for ATC traffic controllers. Capable of operating Model 2070 and NEMA-based ATC platforms and interfacing with any style cabinet. *Omni eX* intersection control software provides a single solution for any infrastructure.

This solution easily integrates with McCain's central software, Transparency[®] TMS, or any other NTCIP-compliant central systems.

Benefits

- *Omni eX* supports a fully adaptive environment out of the box using the Critical Intersection Control (CIC) objects
- Assignable inputs and outputs (I/O) to accommodate any type of standard or custom cabinet
- User database is programmable via the front-panel LCD and keypad UI, NTCIP via serial or Ethernet ports, transfer to USB drives, or webserver
- Built-in data validation ensures accuracy and consistency checks to ensure user entered configuration data
- Powerful data collection features, including measures of effectiveness (MOE) and detector data logging, that can be stored locally via USB or to a central management system
- Update traffic controllers securely and intelligently with the Omni Intelligent Installer

Product Description

Omni eX intersection control software provides comprehensive, signalized intersection control for ATC standard traffic controllers, including Model 2070 and NEMA-based configurations.

The progressive software includes exciting new features and benefits that increase security, efficiency, and ease of use, while saving your technicians time. The addition of the exclusive Omni Intelligent Installer allows traffic controllers to be updated securely and intelligently, by proactively searching for and automatically performing necessary updates to the software package.

Omni eX dramatically improves the security, quality, performance, and reliability of updated MIBS with the implementation of source-code, source-control, and source build server for continuous integration testing.

Fully compliant with Purdue High Resolution Data Enumerations (March 2019).

The NTCIP compliant *Omni eX* software promotes interoperability and interchangeability between manufactures, providing users with a choice and protecting their investments.

Omni eX Intersection Control Software

Standard Features

Phases

- 16 volume/density vehicle phases
- 16 pedestrian phases
- 4 rings with flexible phase assignments and sequences
- 32-channel supported, as with ATC cabinets
- Automatic barrier calculation based on compatible phases
- Exclusive pedestrian-phase operation
- Alternate timing for special vehicles, bicycles or pedestrians
- Advance and delayed walk operation
- Texas diamond operation
- 4 unique sets of phase timing and options selectable by pattern

Overlaps

- 16 vehicle overlaps
- 16 pedestrian overlaps
- Negative (excluded) vehicle and pedestrian phases
- Delayed start of green
- Flashing yellow or red arrow overlaps
- Detector call phases and locking
- 4 unique sets of overlap configurations selectable by pattern

Logs

- Extensive event log for management and diagnostic purposes
- Cycle-based measures of effectiveness (MOE) 1000 events
- Detector volume, occupancy and speed (VOS) 1000 events
- Dual-detector speed traps for precise speed measurement, 1000 events

Event Logging:

- Controller log (300 events in each section): Operation, Detector, Communication, Access, Command, Preempt, Transit priority

NTCIP Logs

- Global Reporting conformance group for user defined event logging
- High Resolution Logging

Detection

- 128 local detectors
- 32 system detectors
- Single or speed trap calculations
- Phase assignments configurable per detector, multiple phases per detector
- Detectors are assignable to multiple phases and/or overlaps
- Each detector supports all NTCIP detector attributes including que, count, and extension
- Delay and extend timing
- Volume/occupancy configurable per detector
- Alternate passage, minimum green and pedestrian timing detection
- Detector fail diagnostics monitoring configurable by time-of-day, by detector
- Support video detection using NEMA SDLC or ATC SDLC

Preemption

- Fully NTCIP 1202 compliant (mandatory and optional objects)
- NTCIP MIB and block objects for all vendor-specific parameters
- 8 preemption sequences
- Each sequence configurable for railroad or emergency vehicle operation
- Definable priority and linking
- User configurable overlap enable/disable during all preempt intervals
- Flashing and limited service options
- User assignable status options (active or dwell)
- Supports NTCIP preempt control state for remote preemption

Transit Priority

- Estimated time of arrival - Intelligent phase time adjustment based on expected vehicle arrival
- 16 priority strategies in 4 sets, selectable by pattern
- Options to support any type of vehicle detection and supports NTCIP object for remote TSP
- Configurable headway and preempt lockout timers
- Queue jumping
- Support for user configurable special logic and advanced operations

Communications

- Supports all industry standard comms
- Web browser support includes security support
- Connected vehicle SPaT interface
- Fully NTCIP compliant communications, including all mandatory and optional objects.
- Data validation during download process
- Supports HTTPS:// protocol
- Time synchronization via WWV, GPS, NMEA or NTP
- Peer to Peer sharing of I/O between intersections

Coordination

- 250 free or coordinated patterns
- Selectable permissive modes
- Fixed or floating force off selection
- Reference cycle to beginning or end of green
- Mode selection done by split table
- Change virtually all operational parameters by pattern
- 16 phase sequence selection by pattern
- Texas Diamond supports 4-phase and 3 - phase and separate modes
- Hierarchal control phase reservice operation

Cabinet Inputs and Outputs

- Supports all cabinet types
- Individually assignable input and output functions (I/O mapping)
- Internal multi-input Boolean logic gates with delay, extend and latch, and flashing output features
- Alarm inputs (16)
- Special Functions (16)
- External pattern selection
- Pulsing preempt and transit priority input discrimination