

## JACE-645



### Overview

Tridium's JACE (Java Application Control Engine), JACE-645 is an embedded controller/server platform designed for remote monitoring and control applications. The unit combines integrated control, supervision, data logging, alarming, scheduling, device communication and network management functions, with Internet connectivity and web serving capabilities in a small, compact platform. The JACE-645 makes it possible to control and manage external devices over the Internet and present real time information to users in web-based graphical views.

In addition to supporting Tridium's Niagara<sup>AX</sup> Framework applications, the JACE-645 can optionally support Tridium's Niagara R2 applications. This option provides the ideal platform for projects currently utilizing Tridium's Niagara R2 technology where a cost effective migration to Tridium's flagship Niagara<sup>AX</sup> Framework is desired. The Niagara<sup>AX</sup> Framework compatible platform can be installed and optionally configured to support a facility utilizing a Niagara R2 Framework application today. At a later date, the facility can migrate to a Niagara<sup>AX</sup> Framework application, thus spreading the cost of the migration across multiple phases.

The JACE-645 is part of the Tridium portfolio of Java-based controller/server products, software applications and tools, designed to integrate a variety of devices and protocols into unified, distributed systems. Tridium products are powered by the Niagara<sup>AX</sup> Framework®, the industry's leading software technology that integrates diverse systems and devices into a seamless system. Niagara<sup>AX</sup> supports a range of protocols including LonWorks®, BACnet®, Modbus, oBIX and many Internet standards. The Niagara<sup>AX</sup> Framework also includes integrated management tools to support the design, configuration and maintenance of a unified, real-time controls network. The LonWorks® FTT-10A port, four RS-485 ports, two RS-232 ports, metal enclosure and line voltage input power supply, make this platform ideal for a wide variety of integration applications.

### Applications

The JACE-645 is ideal for smaller facilities, remote sites, and for distributing control and monitoring throughout large facilities. It is also ideal for managing and controlling today's energy applications. The JACE-645 includes one LonWorks® FTT-10A port, four RS-485 ports and two RS-232 ports providing support for a wide range of field buss connections to remote I/O and stand-alone controllers. In small facility applications, the JACE-645 is all you need for a complete system. The JACE-645 serves data and rich graphical displays to a standard web browser via an Ethernet LAN or remotely over the Internet. In larger facilities, multi-building applications and large-scale control system integrations, AX Supervisor™ software can be used to aggregate information (real-time data, history, alarms, etc.) from large numbers of JACE-645 JACEs into a single unified application.

## Features

- Embedded PowerPC Platform@ 524MHz
- One LON FTT10A port for LON device integration
- Four RS-485 ports for connection to open and proprietary protocol devices
- Two RS-232 ports for Integration or technical support
- Web UI services to support many simultaneous users over the intranet or Internet via a standard web browser
- One Niagara<sup>AX</sup> Framework option slot supporting NPB-XXX option modules. This feature is not available for Niagara R2 applications.

## Ordering Information

Item	Description
T-645/T-645I	Base Unit including two Ethernet ports, two RS-232 ports, four RS-485 ports and one LonWorks® FTT-10A port. Web User Interface and Niagara Connectivity included. oBIX Client/Server , BACnet and LONworks drivers included.
R2-6XX	Capability to utilize a Niagara R2 based application.
NPM-256	Upgrade RAM memory to 256 MB DDR.

Note: Refer to current price list for additional options.

## Specifications

### Platform

- PowerPC 440 524 MHz processor
- 128MB DDR RAM & 128 MB Serial Flash
- Optional 256 MB DDR RAM
- SLA Battery Backup
- Real-time clock

### Communications

- Two 10/100 Mb Ethernet port – RJ-45 connection.
- Two RJ-45 connectors for RS-232 port.
- Four screw terminal RS-485 ports (up to 78,600 baud for MSTP).
- One LonWorks port – FTT-10A with Weidmuller connector.
- One Niagara<sup>AX</sup> option slot (see available option modules below)

### Available Niagara<sup>AX</sup> Option Modules-(Not available for Niagara R2 applications)

- NPB-LON                      LON® Card
- NPB-232                      RS 232 Card
- NPB-2X-485                  Dual Port RS 485 Card
- NPB-GPRS-W                  GPRS Modem with Wyless SIM Card
- NPB-ZWAVE-US              ZWAVE Card/Driver Bundle US
- NPB-ZWAVE-EU              ZWAVE Card/Driver Bundle EU
- NPB-SED-001                Sedona Wired/Wireless Card

### Operating System

- QNX Real-time Operating System
- Sun HotSpot JVM Java Virtual Machine
- Requires Niagara<sup>AX</sup> 3.6.47 or later; or Niagara R2 2.301.535 or higher

### Power Supply

- JACE-645: 120VAC, 50/60 Hz.,
- JACE-645I: 230VAC, 50/60 Hz,
- 25 VA maximum.
- Lead wires for hot/neutral (wire nut), stud for ground connection. JACE T-403I has two-screw terminal strip for AC power connections, plus a stud for ground.

### Battery Backup

- Battery backup provided for all on board functions.
- Battery is monitored and trickle charged.
- Battery maintains processor operation through power failures for a pre-determined interval, then writes all data to flash memory, shuts processor down, and maintains clock for a minimum of five years.

### Chassis

- Housed in metal enclosure, Intended for indoor wall mounting only.
- Cooling: Internal air convection.
- Dimensions: 11" wide X 14" high X 2.5" deep (27.94 cm wide X 35.56 cm high X 6.35 cm deep).
- Weight: Net 4 lbs. (1.814 kg), Gross 5 lbs. (2.268 kg).

**Environment**

- Operating temperature range: 0° to 50°C (32°F to 122°F)
- Storage Temperature range: 0° to 70°C (32°F to 158°F)
- Relative humidity range: 5% to 95%, non-condensing

**Agency Listings**

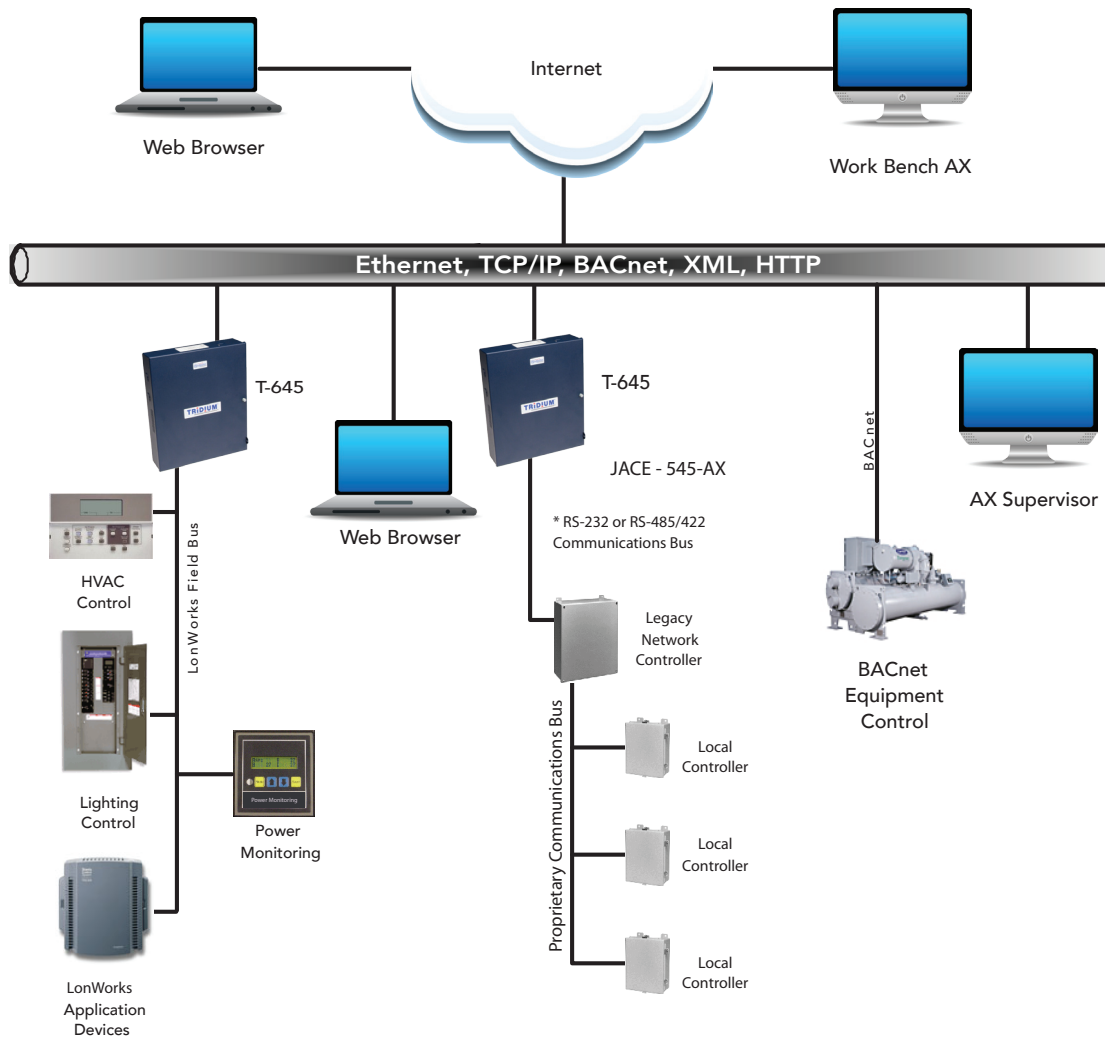
- RoHS Compliant
- BTL
- UL 916
- C-UL listed to Canadian Standards Association (CSA) C22.2 No. 205-M1983 "Signal Equipment"
- CE
- FCC part 15 Class B



**Other**

- Maximum Lon devices = up to 124
- Maximum MSTP devices per RS-485 port = 31 standard load
  - 124 ¼ load devices; requires one MSTP driver per port.
- Port speeds supported are:
  - 4800 baud
  - 9600 baud
  - 19,200 baud
  - 38,400 baud
  - 57,600 baud
  - 76,800 baud

Architecture



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