

This Summer 2018 edition of TechTalk describes updated features for the D650 Master Display, application of the M661P3 Pole Top Power Monitor and new 9.1 firmware features for the Orion family. Links to three product videos are also provided.

D650 Master Display - Update

The Bitronics D650 Master Display is designed to connect to substation IEDs to display measurement values resident in those IEDs. It is available now. Serial communication, as well as Modbus, have been added to the design. Following are the key features:

Key Features

- Connects to the OrionLX/LXm/OrionIO, Bitronics transducer, or other IED via Ethernet or serial to display measurement values
- Full set of measurement values are supported; any measurement available in the Bitronics M650M3 meter using Bitronics standard scaling can be displayed.
- Supports the following four protocols: DNP3 TCP Client, DNP3 Serial Master, Modbus TCP Client and Modbus Serial Master.
- User can select registers/points from the attached IED in any desired sequence.
- This D650 can also be configured to serve as a display for the Bitronics M87x recorders or PPX II automation transducer; one physical model of the D650 can handle both this application and the Master Display application.

See Figure 1 for serial and TCP connections to an OrionLX.

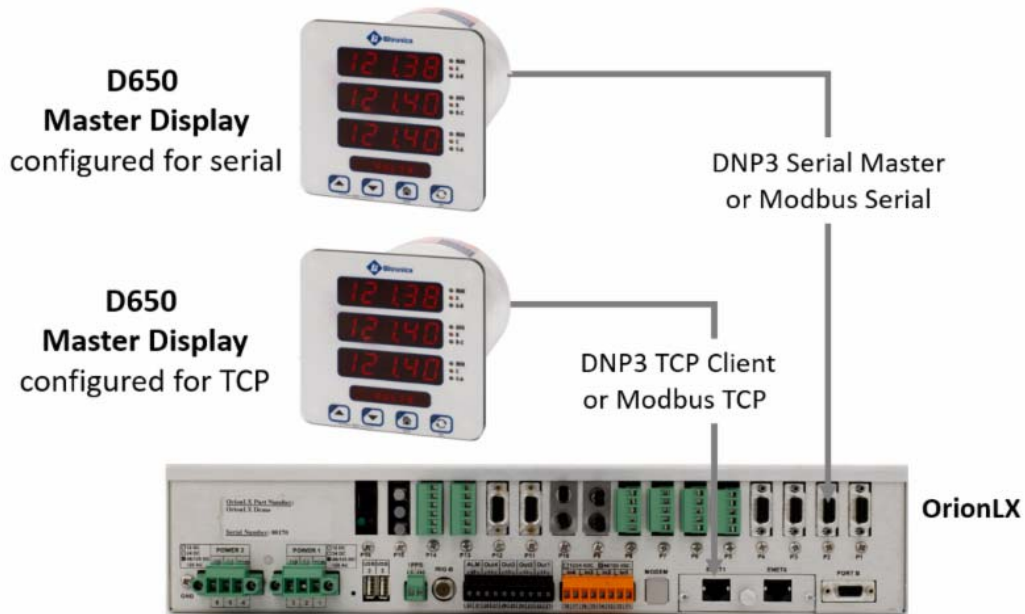


Figure 1: D650 Master Display connected to OrionLX Automation Platform using DNP or Modbus, Serial or TCP

Applications for Bitronics M661P3 Pole Top Power Monitor

The M661P3 can be packaged by NovaTech as shown in Figure 2 or provided as a loose measurement instrument to be packaged by the user. Four distribution applications are supported:

1. **End-of-Line-Voltage Monitoring.** Where feeder voltages at the end of the line cannot be accurately modeled due to large integration of wind and solar, and where AMR is not available, the M661P3 can provide accurate voltage measurements to ensure delivery is within contractual targets.
2. **Fault Detection for Sectionalizing Schemes.** We included a Definite Time Overcurrent protective relay element in the M661P3 product, not to trip breakers, but to sense whether a fault has occurred on a section of the line. Feeder automation schemes for DA ("Distribution Automation") or "FLISR" (Fault Location, Isolation and Service Restoration) that require knowledge about where the fault occurred can receive these data from the M661P3.

3. **Peak Fault Currents for Asset Managers.** Low impedance, high current faults can damage feeder insulation, transformers and breakers. The Bitronics M661P3 records three-phase peak fault currents which can be communicated to asset managers.
4. **Reactive Power Monitoring.** The M661P3 can receive accurate voltage and current measurements from Lindsey sensors, calculate and report power factor and reactive power. These data are useful for making real-time decisions for capacitor bank energization.

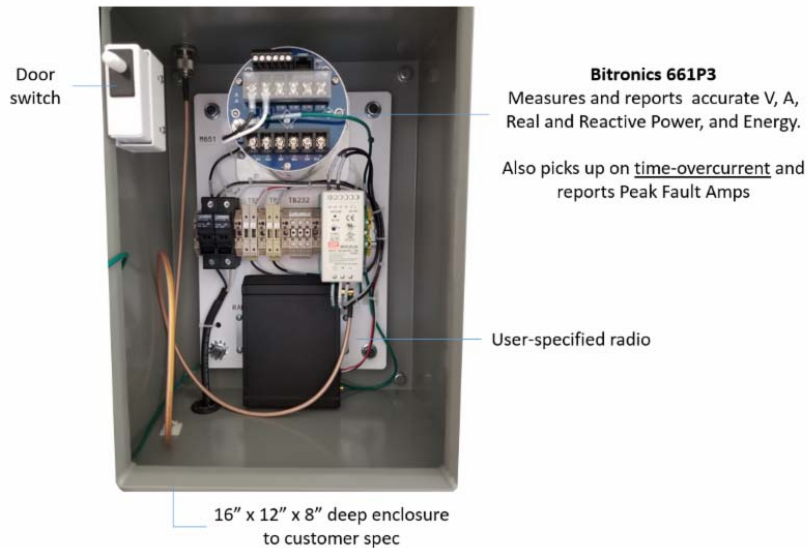


Figure 2: Packaged Bitronics M661P3

Firmware 9.1

Firmware 9.1 is released for the OrionLX CPX, OrionLXm and Orion I/O. This common firmware simplifies administration and compliance, notably in more critical substations. Key operational and security features include:

- Employs "Integrity Measurement Architecture" (IMA). IMA detects if files - including executable files, kernel modules and kernel loaded firmware - have been accidentally or maliciously altered, both remotely and locally, appraises a file's measurement against a "good" value stored as an extended attribute, and enforces local file integrity. IMA makes it practically impossible to load unauthorized firmware on Orion.
- Unused Ethernet ports can be disabled.
- Back-up and Restore: 5-10 minutes based up "Archive" (PostgreSQL) size. This is accomplished by a simplified "one-click" operation.

- Once on 9.x firmware, upgrades (new "Distros") will be faster
 - Complete re-imaging instead of package update
 - About 10 mins, and consistent
 - Practically impossible to "brick" an Orion

Please see Release Notes on the Orion Support Site for a complete description of new features and fixes.

Hot Active-Standby Redundancy

9.1 firmware also adds support for redundancy on the OrionLX CPX and OrionLXm. Hot Redundancy provides fast throwover - less than 10 seconds - for all applications performed by Orion: RTU, HMI, Alarming, SOE, etc. Full description at <https://www.novatechweb.com/substation-automation/orion-redundancy/>

Videos on NovaTech Website

Hot Standby Redundancy in OrionLX and OrionLXm

Two identical OrionLX Automation Platforms can now be applied in Hot Active-Standby Redundancy to simplify operations and to improve system MTBF.

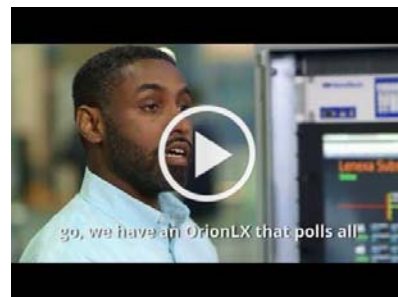
More on Orion Redundancy go to: <https://www.novatechweb.com/substation-automation/orion-redundancy/>



D20 Retrofit with Orion I/O

The high density of the Orion I/O (up to 64 I/O in 2 RU) makes it ideal for replacing legacy D20 I/O modules.

Orion I/O D20 Upgrade Datasheet can be found at: <https://www.novatechweb.com/substation-automation/orion-redundancy/>



Bitronics Pole Top Power Monitor

The new Bitronics Pole Top Power Monitor, model M661P3, will be displayed in a NEMA enclosure and connected to Lindsey sensors.

News on Pole Top Power Monitor is on our website at: <https://www.novatechweb.com/news/bitronics-pole-top-power-monitor/>



Upcoming Events

Wisconsin Symposium <i>Wisconsin Dells</i> August 23-24 Symposium on Thursday Training on Friday Contact Bill Heberer 414-322-6567	Carolina Symposium <i>Fayetteville, NC</i> September 12-13 Training on Wednesday Symposium on Thursday Contact Kevin Johnson 570-498-4409
--	---

Latest Software

OrionLX Release: 9.1

Orion NCD3 Version: 3.32

Bitronics M87x firmware: 4.17

Bitronics 70 Series Configurator: 4.18

Bitronics 50 Series Firmware: 3.18

Bitronics 60 Series Firmware: 2.30

Bitronics PowerPlex II Firmware: 2.30

BiView: 3.08

Corporate Communications

1720 Molasses Way
Quakertown, PA 18951