WIRELESS NETWORK MANAGER/ WIRELESS NETWORK SUPERVISOR

| 225CWS

Scalable IP-based monitoring and control platform for wireless nodes

Manages exterior lighting control site wide, or across multiple sites

Secure cellular connection option preserves corporate firewall

Graphic-rich browser-based user interface accessible from PC or mobile devices

Wired and wireless connection options

Based on open standards for easy integration with building systems

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Description

The Wireless Network Manager and Supervisor are scalable hardware and software designed to manage exterior lighting control networks. A network consists of at least one wireless control node, such as the NWTL-111, and a Network Manager. Networks can be expanded by adding nodes, and, if needed, more managers. Network Supervisor software can coordinate control of multiple managers, and provide long term data storage. Supervisor licenses run on Windows or Unix servers.

Operation

A Network Manager communicates with the distributed control nodes using a wireless IP network. It hosts a user interface that is served up over a TCP/ IP connection using a wired (Ethernet), wireless (WiFi) or secure cellular connection (3G). The 3G cellular connection requires a wireless data plan offered by Wattstopper. The interface is available on any PC using a compatible web browser and operates with most Android or Apple iOS devices. The Network Supervisor allows users to manage multiple wireless networks via the same familiar user interface served up by the Network Manager.

Monitoring and Control

Users can monitor and adjust remote devices via a browser on a PC or mobile device. Parameters include monitoring light levels and motion sensors, and controlling groups and light levels. Schedules may be used to adjust light levels during the evening, have an evening shut down, and turn lights on again in the early morning. High resolution vector-based graphics integrated with Inference Analytics and Haystack Data Model provide easy-to-understand actionable information with just a few clicks. Many functions can be configured automatically and templates are reusable across multiple facilities.

Applications

The Wireless Network Manager and Supervisor are ideal for managing networks of wireless control nodes controlling exterior area and street lighting, from parking lots to pathways, across school and corporate campuses. Remote monitoring options enable sites to be managed by the owner's facility manager or Wattstopper staff. Please consult Wattstopper for design assistance with projects using more than 300 control nodes, or when multiple locations are connecting to a Network Supervisor.
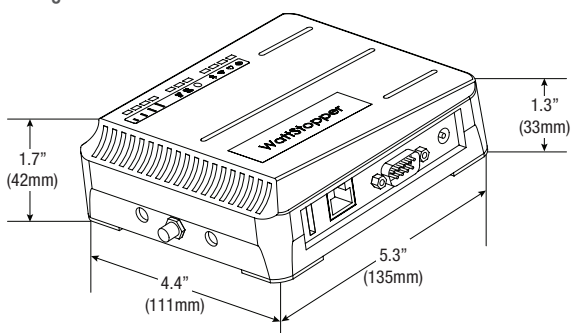
Features

- Wireless Network Manager configures and programs wireless control nodes for stand-alone or network operation
- Unlike gateways, Wireless Network Managers include a controls engine, histories, and visualization
- Controls engine at Manager or Supervisor level allows flexible grouping for zone control, including the ability to make simple post installation changes

- Protocols: BACnet MSTP, BACnet IP, JenNet IP, Haystack, Modbus, Sedona, XML, oBIX, SQL
- Simplifies energy code compliance for multi-level lighting requirements
- Ideal for sustainable LED upgrade projects and Dark Sky initiatives

PROJECT		LOCATION/ TYPE	

Specifications

- Operating voltage: 15VDC from 120VAC plug-in power supply (included) or auxiliary enclosure

- Rechargeable internal battery backup

- IEEE 802.15.4 wireless connectivity to nodes

- Wired and wireless connectivity for data and user interface
  - 10/100 MBit Ethernet port
  - USB 2.0 port
  - RS-232 port (DB9 male connector)
  - IEEE 802.11 (WiFi)
  - 3G CDMA cellular modem

- 8 GB Micro SD Flash for system application and data backup

- NXP Trusted Platform Module (TPM) for security
  - Dedicated Secure_MX51 smart card CPU
  - 24-bit universal memory space, 24-bit program counter

- High speed Advanced Encryption Standard coprocessor (128-bit parallel processing AES engine)
- Low power and low voltage design using NXP Semiconductors handshaking technology
- 8192 bits maximum key length for RSA with randomly chosen modulus
- 4096 bits maximum key length for calculation within RAM

- Operating conditions: 32–122°F (0–50°C); 0–90% RH, non-condensing

- FCC part 15 compliant

- cMET listed; tested to UL-60950
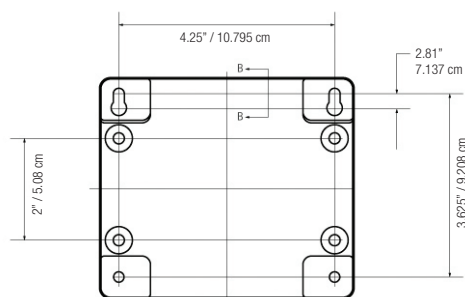
- One year warranty; extended warranty available

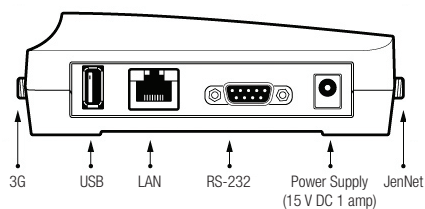# Dimensions & Mounting

Network Manager Dimensions

1.3" (33mm)
1.7" (42mm)
5.3" (135mm)
4.4" (111mm)

225CWS dimensions without antennas

Mounting

4.25" / 10.795 cm
2.81" / 7.137 cm
2" / 5.08 cm
3.625" / 9.208 cm

225CWS mounting hole locations for optional wall mounting

Connecting

Network Manager

3G   USB   LAN   RS-232   Power Supply (15 V DC 1 amp)   JenNet

225CWS connectors and ports

Software Features

Control

The Wireless Network Manager's controls engine provides grouping, switching, and overrides for individual nodes or groups of nodes using a distributed architecture. This is in contrast to gateway-style control via a single server. Object-based linking with line logic programming supports elegant customized control strategies, such as Automated Demand Response, for high performance buildings. Network Supervisors provide a higher level of automation, managing decisions at the enterprise level when it makes sense. Supervisors work in conjunction with Managers and can provide system wide commands with Managers at multiple and remote locations.

Events and Scheduling

Drag and drop capabilities provide an easy-to-use method for creating and modifying weekly schedules. The interface supports unique holidays or special one-time events, repeating events, and unique start and end times.

Reporting

A powerful reporting engine combined with a charting engine provides an intuitive interface that supports automatic reporting with emailing options.
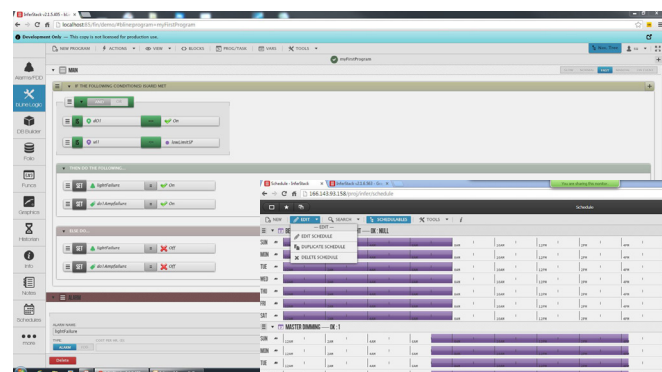
Analytics

The Network Manager improves building operations by detecting patterns in lighting data that might indicated equipment malfunctions. As an example, a lighting load that is activated, but has no energy consumption, may have a lamp or LED driver failure. Facility managers can create rules relevant to each facility, so that the system will send emails alerting operators about potential fault conditions.
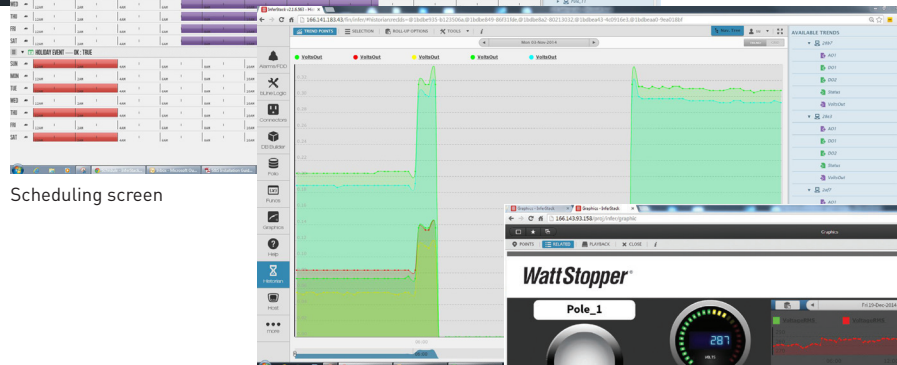
Visualization Tools

The web-based software includes graphics for animating lighting operation and displaying both runtime and historical information. A unique "DVR mode" provides an animated graphic of runtime and operation. Vector-based graphics support multiple views, including pan and zoom, without pixelation.

User Interface

Typical Screen Shots
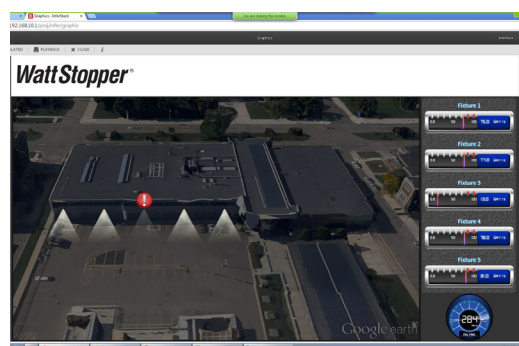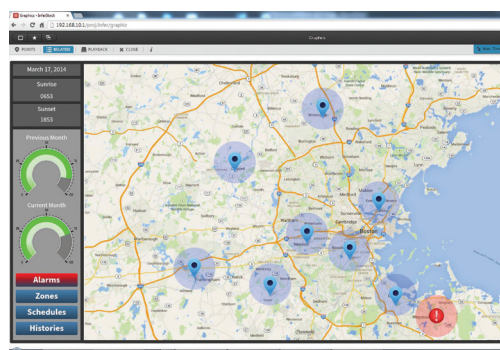

Control engine

Scheduling screen

Trending report

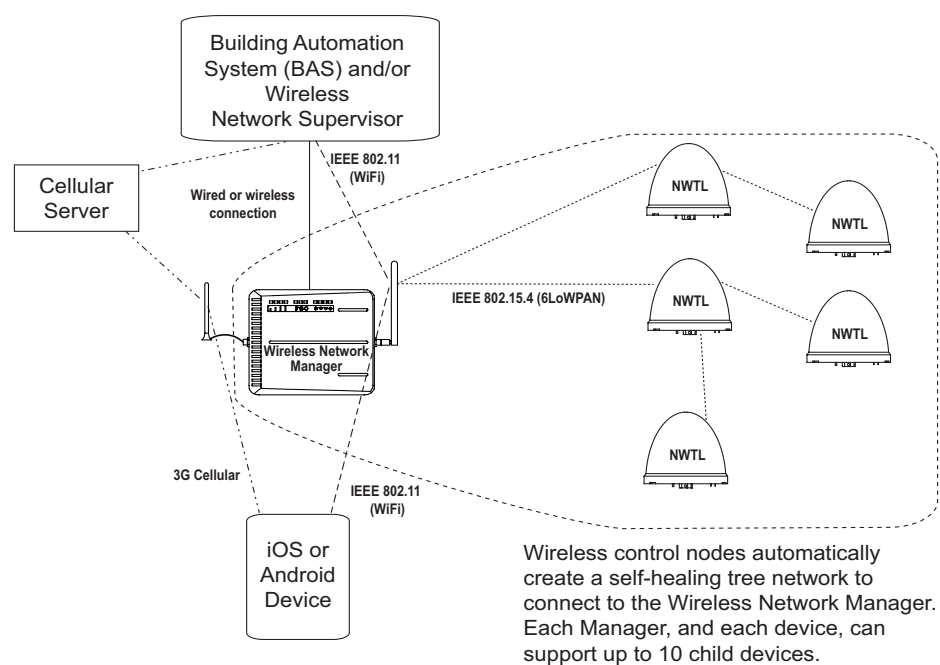Analytic dashboard

User Interface

Typical Screen Shots

Alert for fixture malfunction

Alert for multi-site installation

Connecting

Typical System Components

Wireless control nodes automatically create a self-healing tree network to connect to the Wireless Network Manager. Each Manager, and each device, can support up to 10 child devices.

Ordering Information

Catalog #	Description	Data Points Supported
☐ 225CWS	Wireless Network Manager	1000
☐ 301126	Cellular antenna for 225CWS	
☐ ISS-Base	Wireless Network Supervisor license	500
☐ ISS-1K	Wireless Network Supervisor license	1000
☐ ISS-2K	Wireless Network Supervisor license	2000
☐ ISS-10K	Wireless Network Supervisor license	10,000
☐ ISS-50K	Wireless Network Supervisor license	50,000
☐ ISS-100K	Wireless Network Supervisor license	100,000
☐ ISS-500K	Wireless Network Supervisor license	500,000
☐ ISS-1M	Wireless Network Supervisor license	1,000,000