

Project		Catalog #		Type	
Prepared by		Notes		Date	



Trellix

Trellix 9.0 - Locate

Real-time Location System

Typical Applications
Healthcare • Education • Office • Industrial

- ### Interactive Menu
- Order Information page 2
 - Additional Resources page 3
 - Connected Systems page 5
 - Product Warranty

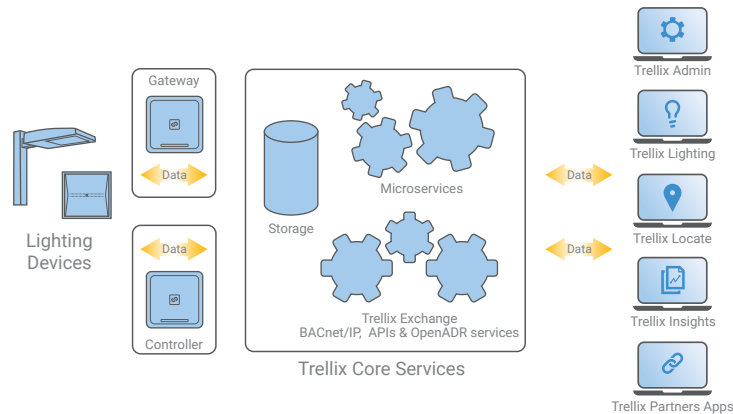
- ### Product Certification
- Supported HTML 5/Javascript compatible browser:
- Microsoft Edge 80+
 - Google® Chrome 75+
 - Safari 11+
- ### Product Features
- Integration with third party using API in real time
 - Asset Management with Map based Visualizations
 - Location based notifications
 - Alarms with customized troubleshooting tips
 - Tag Management
 - Geofencing

Overview

Trellix Locate is a real-time location service that leverages the WaveLinx Pro Wireless Connected Lighting System with embedded Bluetooth® Low Energy technology to deliver real-time indoor asset tracking and management. The software application is hosted on the Trellix Core appliances and includes administrative user interfaces, location engine, map visualization and REST APIs.

Top Product Features

- **Secure Real-time Location APIs** – Enhance your business performance by incorporating the indoor positioning data generated by our WaveLinx Pro Wireless Connected Lighting System with embedded Bluetooth Low Energy technology into your applications. Please refer to the Trellix Locate API datasheet.
- **Asset Management** – Quickly find an asset’s location in real-time using our intuitive tabular view with integrated pin locator. Once you press on the pin locator option, the application automatically displays the floorplan where the asset is located.
- **Map based visualization** – Use our web-based floorplan and its playback feature to get insights of your assets’ real-time location and movements to improve your business best practices; such as improving your work processes, your assets utilization and your safety practices.
- **Location-based Notifications** – Create location-based notifications based on pre-defined rules such as exit, entry and entry or exit and get real-time notifications when the rules are infringed.
- **Alarms with customized help tips:** Monitor the health of your system (network, devices and tags) using the Alarms Console or receive email notifications instantly for all alarms. Refer to the troubleshooting or help tips to resolve any issue.



Order Information

The Trellix Core (Pro, Enterprise, Virtual) platforms are preloaded with Trellix Admin and Lighting. The Trellix Core is shipped with a base software license which enables the Lighting application for up to 250 devices. After 250 devices, the customer should purchase Trellix Lighting license adders.

Trellix Insights, BACnet/IP, API and OpenADR require a dedicate software license. Customers should purchase the appropriate software license adders for any additional features.

Trellix Locate is enabled using a license key. Cooper Lighting Solutions will provide a license key based on the purchase of software licenses.

Trellix Locate Licenses

Catalog Number	Catalog Number

Catalog Number	Description
TRX-LOCSNR-1YR	Trellix Locate annual subscription
TRX-LOCBAS	Trellix Locate application

Trellix Software Licenses

Catalog Number	Catalog Number	Catalog Number	Catalog Number

Catalog Number	Description
TRX-LGT250	Trellix Lighting license adder for additional 250 devices

Notes

- Please refer to the respective datasheets to learn about the other features.
- Please include the Trellix Lighting license adder to enable devices connected to the system.

Trellix Commissioning Services

The Trellix Lighting application includes graphical floor plan and energy dashboard. Services to configure these items MUST BE INCLUDED in Trellix Core and Trellix Basic License Addition 250 options for the number of nodes indicated with those products.

Catalog Number

Catalog Number	Description
TRX-CONFIG	Trellix Energy and Graphical Floorplan Setup Services for 250 devices*
TRX-RTLSCONFIG	Services to configure the Trellix Locate application

Notes

- Devices placement only available for wireless devices

A device is an input/output wireless/wired device that is connected to the controller.

Wireless

All Wireless Devices (integrated sensors, ceiling sensors, outdoor sensors, wall stations, switch packs, receptacles, wireless drivers). Each device counts as one.

Notes: WaveLinX Pro Touchscreen is not counted as a device

Wired

DAC & Field Relay Devices: Each device counts as one.

SCMH : 12 devices (A single SCMH counts as 12 devices)

SCMR : 0 devices (see below)

Notes: As Trellix 9.0 does not support device level monitoring, the device count is limited to output devices only listed above, i.e. wallstations and sensors are not included in the device count. We are not counting the SCMR in the device count.

Product Specifications

Key Features

Tag Management: Manage, discover and activate tags. Once discovered they can then be assigned to any asset for tracking.

Asset Management: Configure and manage assets and asset types. Assign tags to these assets for tracking.

Asset Playback: Stream asset history in a video format on a floor plan by selecting assets, start date and duration.

Geofence and System Configuration: Setup any polygon shaped virtual fence on a floorplan and start receiving real-time notifications based on motion rules such as entry, exit or both for assets. Use the comprehensive system tools to configure and commission the Location system.

Secure Real-time Location APIs – Enhance your business performance by incorporating the indoor positioning data generated by our WaveLinX Pro Wireless Connected Lighting System with embedded Bluetooth Low Energy technology into your applications. Please refer to the Trellix Locate API datasheet.

Freedom of choice – The Trellix platform can be delivered on physical or virtual machines.

- Trellix Core Enterprise is a specialized physical edge/on-premises machine designed for medium to larger facilities with up to 300 wireless area controllers.
- Virtual Trellix Core Enterprise is a virtual edge/on-premises machine, leveraging VMWare® technology, designed for medium to large facilities with up to 300 wireless area controllers. Virtual Trellix Core Enterprise allows users to run the platform on their VMWare server or on a VMWare® supported Cloud service provider.

Please refer to the Trellix Core Enterprise and Virtual datasheets to learn more about our Trellix Core options.

Designed for Touch and Mobility – You are no longer tied to your desktop to view and manage your connected lighting system. Our responsive applications are designed for touch. You can interact with the applications from any device with a web browser, i.e. smartphones, tablets and desktop computers.

Software Specifications

Supported HTML 5/Javascript compatible browser:

- Microsoft Edge 80+
- Google® Chrome 75+
- Safari 11+

Supported Screen Resolution: 1024 x 768 or higher

Compatibility

- Please refer to the Trellix/WaveLinX Pro System Release Notes for firmware compatibility matrix.

Warranty

- Consult website for warranty information.

Discontinued
06-02-2023

Trellix Smart Spaces IoT Overview

Trellix is a smart spaces IoT platform that moves real-time monitoring and processing to the edge to allow customers to gain faster insights of their buildings operations and business processes and drive efficiencies and effective decisions using Trellix apps and partners apps.

The platform manages and collects the data gathered by the sensors and analyzes the data to provide meaningful insights to users.

This platform hosts Trellix Core Services, a set of microservices required for fully functional IoT solutions, Trellix Exchange, a set of interfaces to allow data exchange with third party apps and Trellix Apps, a set of Cooper developed applications designed to serve the Connected Spaces.

Trellix IoT enterprise platform simplifies day-to-day operations as well as integrations with the other sub-systems operating a building. Once the Trellix Core is connected to the WACs, Trellix platform assumes the roles of the system's supervisory manager, historian, gateway and security.

As a supervisory manager, Trellix allows users to perform high-level supervisory management tasks, i.e. monitoring of the connected lighting system, making changes to the lighting schedule as well as issuing control commands such as changing a room's lighting level. User performs these tasks using the Trellix Lighting application.

As a historian, Trellix aggregates the data received from the WAC and stores it in the time-series database. The data can then be visualized using the Trellix Dashboards.

As a system gateway, Trellix aggregates the data received from the WAC. It then handles the data exchange between the WaveLinx Pro system and third party systems such as Building Automation Systems, A/V systems, Shade control systems through the BACnet/IP and REST API services.

As a security system, Trellix manages and authenticates users and third-party clients that can access the applications and the data using OAuth2, the industry standard for authentication. Once authenticated, users and clients have access to specific features based on their permissions.

Trellix Core Services Overview

Trellix Core Services consist of:

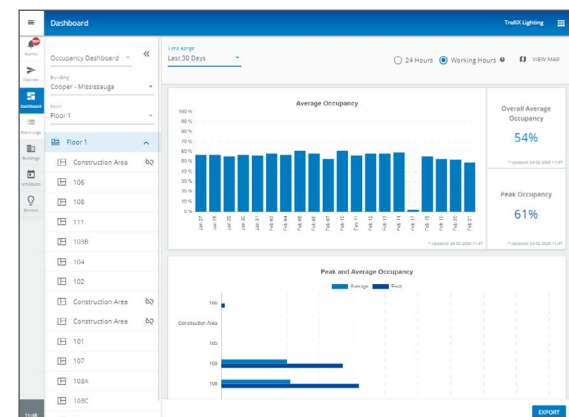
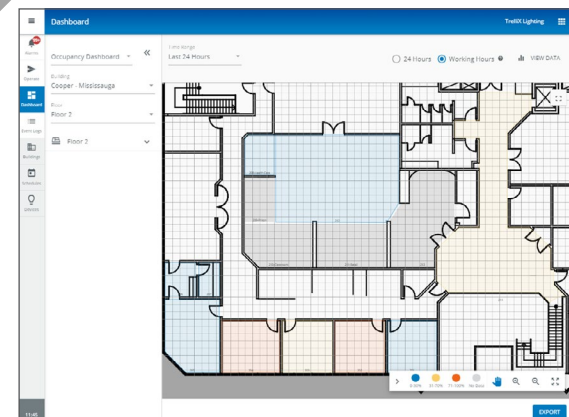
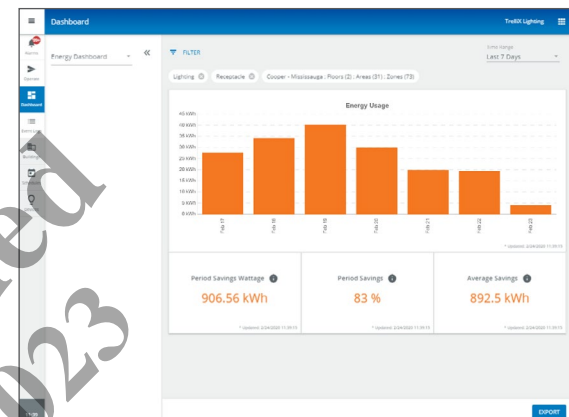
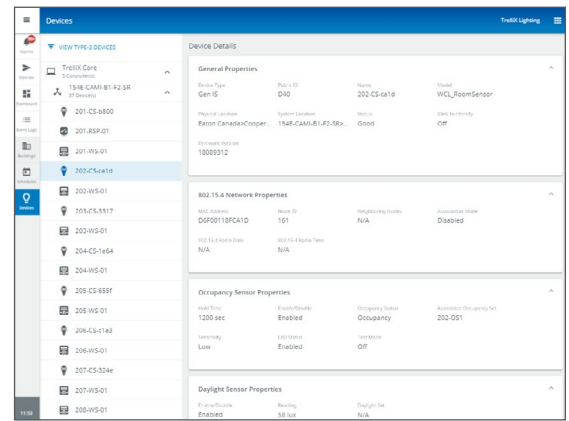
- **Connectivity service** – Manages data exchange with WaveLinx area controllers and gateways using Cooper Lighting Solutions API.
- **Message Routing service** – Manages the routing of the received data to the other Trellix Core microservices.
- **Data Management service** – Manages the real-time data received from the various sources as well as aggregated data for data analytics.
- **Device and Spatial Object Management service** – Manages (add, edit, remove) devices connecting the platform as well as spatial objects, such as clients, buildings, floors and areas, defined within the platform.
- **Event Management service** – Manages the events generated by the devices and spatial objects.
- **Location service** – Computes the location of the assets based on received BLE data.
- **Security service** – Ensure secure data exchanges between the various Core components/microservices.
- **Authentication and Authorization service** – Manages the users that can safely connect to the Trellix platform and applications as well as the roles/permissions/areas of responsibility for each user.
- **OS and Applications Management service** – Manages the operating system and applications hosted on the Trellix platform.
- **Interfaces service** – Manages the various interfaces, REST API and BACnet/IP, OpenADR used for data exchange between the WaveLinx Pro system (energy, occupancy, daylight, location) and building automation systems, smart building and Cloud based IoT platforms.

Web Based User Interface

Trellix platform offers web-based applications that allow users to configure and manage the connected lighting system from any computing device with one of the supported web browser (refer to specification section). The user interface has been designed to allow system integrators and facility managers to easily configure the connected lighting system, i.e. discover the area controller, import the real-time control logic data from the area controller, establish data exchange between the area controller and the Trellix Core, and expose the data to third party systems.

The user interface has been carefully divided into four sections: the Trellix bar, Navigation toolbar, the Explorer, the main panel and property panel.

The **Trellix App Selector** is how users switch between applications, i.e. Admin, Lighting and Locate. The **Navigation Toolbar** is how users navigate between the application's key modules. The **Explorer** allows users to navigate through the building's hierarchy (client, building, floor, area, zone) and system hierarchy (area controllers, devices). The **Property** panel allows users to view the properties of the various assets managed by the system such as floors, areas, sensors as well as initiate device specific actions.



Trellix Locate

Trellix Locate delivers real-time indoor location service and management, by leveraging the Trellix smart space IoT platform. Designed to allow you to monitor activities by sensing the location of your assets, staff and patients and use the data to improve business/production workflows, improve safety and security. Using a toolbar, users can access the various Trellix Locate modules.

The modules are grouped into two groups:

Managing assets – The Trellix Locate application allows you to manage your assets.

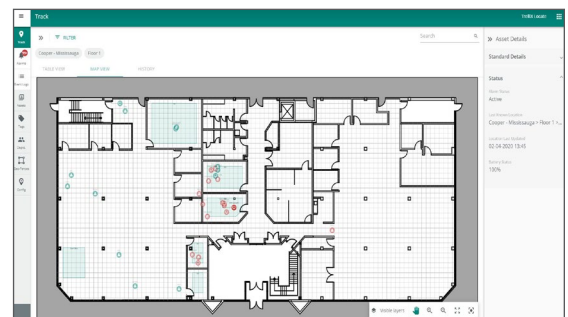
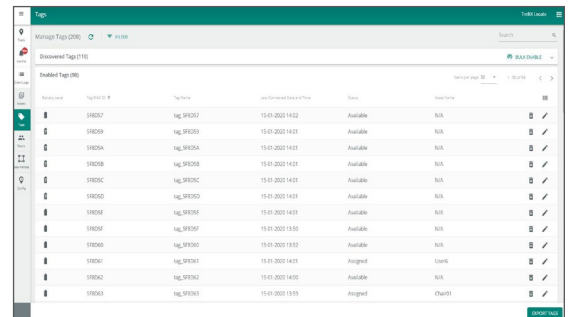
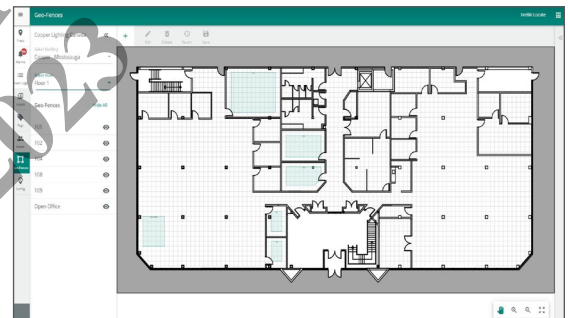
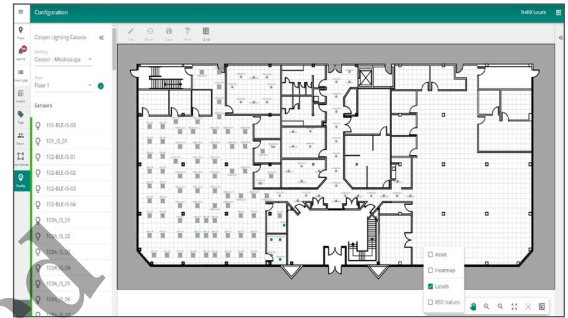
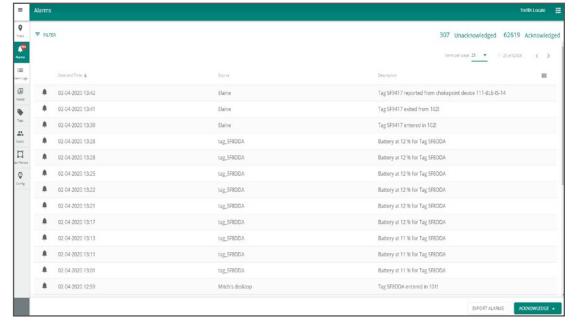
- The **Track** console allows you to quickly locate assets in a tabular view and map view. The tabular view is ideal to search for an asset in a multi-floor facility. The tabular view has a pin feature which takes the user to the map where the asset can be viewed. The console also allows you to replay the movement of up to 25 assets.
- The intuitive **Alarms** console allows you to monitor the device level notifications such as low battery alarm and location-based notifications based on geo-fences rules defined within the system. Users can filter the alarms based on assets names.
- The **Event** console captures all past notifications generated by the system in case you want to investigate past notifications.
- The new **Kiosk** mode, when enabled allows the user to view and locate assets without being logged out of the session. This mode is useful when you want to view floor plan tracking on a large display.

Configure your assets – Trellix Locate allows you to easily configure your Trellix Location solution.

- The **Assets** console allows you to manage assets and associate them with a BLE tag. You can view tagged and untagged assets by department, category, and text search. The bulk import and export feature allows you to quickly manage assets using output from other asset management applications.
- The **Tags** console allows you to discover tags, enable/disable them and delete them when needed. The console also allows you to quickly enable a set of tags using the bulk enable feature.
- The **Department** console allows you to manage departments. Assets are associated to these departments which allows for asset management at the department level. Trellix Locate comes with a set of pre-defined departments and asset types to minimize the configuration based on the selected vertical.
- The **Geo-Fences** console allows you to create geo-fences by drawing a perimeter on a floorplan using your fingers using our patent pending floorplan editor. The floorplan editor eliminates your reliance on specialists to maintain your geo-fences and map.
- The **Configure** tools allows system commissioning specialists to fine tune the system to meet your location accuracy requirements.

The Trellix Locate infrastructure, i.e. Bluetooth® Low Energy enabled IoT sensors and WaveLinx Area Controllers are managed through the Trellix Lighting application. The Trellix Lighting application allows the system configurator to define the system hierarchy, building hierarchy users and system settings. For more information, please refer to the Trellix Lighting.

Users are managed using the Trellix Admin application. Each user will have a dedicated user role and department(s) that they are responsible for. Please refer to the Trellix Admin datasheet.



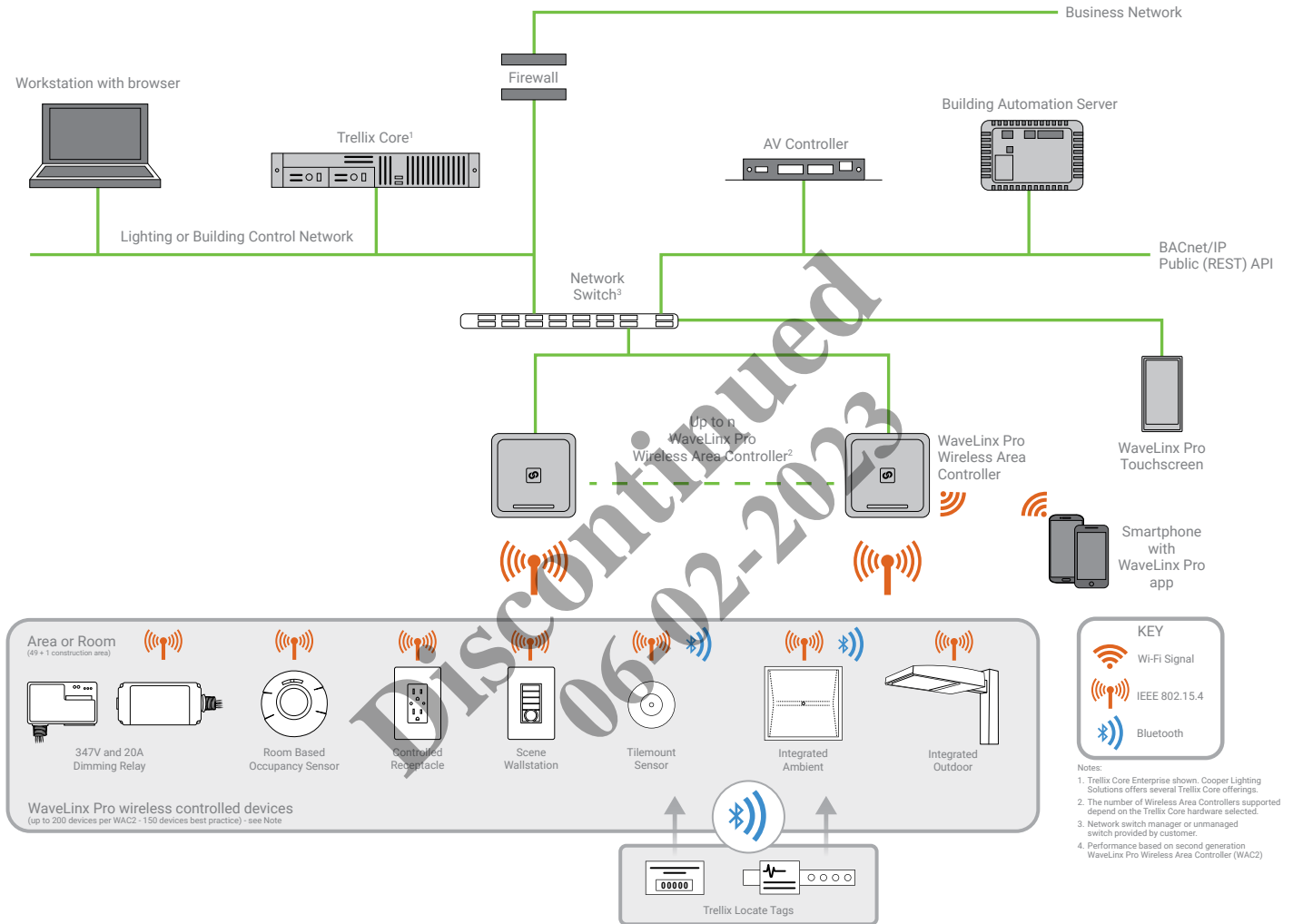
Sample System Topology:

The diagram below shows the main components of the WaveLinX Pro wireless connected lighting system and Trellix IoT platform. The Trellix Locate Bluetooth® Low Energy technology asset tags are enabled with proprietary protocols to communicate with the WaveLinX Pro IoT sensors. These WaveLinX Pro IoT sensors are either embedded within the fixtures or standalone. The sensors communicate with the WaveLinX Pro Wireless Area Controller using Cooper Lighting Solutions wireless mesh technology based on IEEE 802.15.4 standard. The WaveLinX Area Controllers aggregate the received signals, perform the preliminary logic and then send the aggregated data to the Trellix Core appliance over ethernet. The Trellix Core which hosts the location engine will then process the received data and provide a geo-location of the BLE tag.

The WaveLinX Pro Wireless Area Controllers (WACs) and Trellix Core appliances communicate over a dedicated Local Area Network or Virtual Local Area Controller.

Please refer to the WaveLinX Pro Wireless Network and IT Guidance Technical Guide for more information.

[View WaveLinX Pro Network and IT Guidance Technical Guide](#)



Control Systems

- Trellix
- WaveLinX Pro