Triton ULTRA Administrator Manual

Covering the Triton ULTRA Smart Sensor. Overview of Device Features, Settings, Setup, Configuration, Support, and More.

PMN: IP SMART SENSOR

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Intro to Triton ULTRA

Overview

Triton ULTRA is a next-generation smart sensor for advanced situational intelligence. Triton is used by thousands of organizations including schools, healthcare, retail, higher education, and more for a range of uses. Over 90% of Triton devices are installed in private spaces such as bathrooms, locker rooms, healthcare bedrooms, and more. However, many organizations also rely on Triton to monitor public areas for metrics such as air quality, occupancy information, sound level trends, and more.

Triton ULTRA is a network IoT device and customers have the option between interacting with Triton through on-premise or cloud software. Triton also integrates with dozens of third party software programs such as video management systems and alert systems. The device alerts natively through email, SMS, HTTP, TCP, and MQTT. Additionally, there is a mobile app available for the Triton Cloud software option and customers can configure the on-device speaker and light to react to different event types.

The device installs on virtually any ceiling type as well as walls with a decreased range and functionality. Triton can be powered by Power over Ethernet (PoE) or 12V DC input. Triton can connect to its network through Ethernet or WiFi connection and can be run air-gapped if necessary (with limited functionality).

Triton ULTRA comes pre-configured with a range of different alerts called “events” including vaping, THC, smoking, motion, people count, loitering, aggression, and more. However, Triton ULTRA can be configured with custom events based on sensor input, timing, and a profile of multiple sensors. Some event types rely on more than a simple sensor input and instead are the result of extensive AI training to accurately predict certain events. For example, Triton ULTRA’s drug classification is based on an advanced neural network and hundreds of hours of training data culminating in advanced distinction between vape, THC, masking, and smoking.

Features

Drug Detection:

- Vape Detection
- Smoking Detection
- THC Detection
- Masking Detection

Environmental Data:

- Temperature
- Relative Humidity
- TVOC
- Carbon Monoxide (CO)
- Carbon Dioxide (CO2)

- Nitrogen Dioxide (NO2)
- PM 1.0
- PM 2.5
- PM 10
- Formaldehyde (HCHO)
- Ethanol (C2H6O) Index
- Air Quality Index
- Health Index
- Risk Level
- Noise Level

Occupancy Data:

- Motion
- Occupancy
- People Count
- CrowdCount
- Loitering

AI Audio Detection

- Gunshot Detection
- Screaming and Shouting Detection
- Glass Break Detection
- Coughing Detection

Other Detection

- General Aggression (eleveated noise level) Detection
- Tamper Detection
- Sensor Cover Detectionn

Software

Triton Enterprise Device Manager

Triton Enterprise Device Manager (TEDM) is the official on-premise management platform for Triton UTLRA devices. Use TEDM to view all devices on your network, change settings such as IP Address configuration, ports, and firmware version. In a forthcoming release, TEDM will enable bulk configuration of Triton devices. Read the Setup section of this manual to learn how to use TEDM to discover new devices on the network.

Also use TEDM to log into the Triton Device Software for each individual device which is where the majority of device settings, integrations, and controls are managed. Clicking the “web” icon next to a device in TEDM opens the respective device’s software.

Triton Device Software

The Triton Device Software is combination dashboard and management platform for the individual sensor. It is accessible through Triton Enterprise Device Manager or by typing the device’s IP address directly into a web browser. When logging in for the first time, the default

username is **admin** and the default password is **111111**. You will be prompted to change the default password upon logging in for the first time. Both the username and password are case sensitive. There is a deeper explanation of the Triton Device Software later in this document.

Triton Cloud

Triton Cloud is Triton's cloud management, alerting, and reporting platform. The primary benefit of Triton Cloud comes from it's multi-site organization of all sensors, advanced reporting and data retention across sensors, fast alerts through email, SMS, and mobile app, and Single Sign On capabilities through Clever. If you do not currently have Triton Cloud but would like to explore upgrading, reach out to your sales representative to discuss upgrading.

Warranty

Triton ULTRA comes with a standard 10 year warranty against factory defects. To qualify for the warranty, your Triton ULTRA sensor must have been procured through an authorized Triton Sensors sales partner. You must also keep your Triton ULTRA installed in a location in accordance with it's authorized operating environmental conditions and in an indoor environment.

Support

Triton prides itself on fast and free support for all of its customers. Triton Sensors authorized sales partners are the primary support contact for customers. However, Triton offers a toll free support line for North American customers at (800) 305-1617 and a support email address at support@tritonsensors.com. Additionally, visit tritonsensors.com/support for a support form and documentation.

Setup [Video Instructions]

Hardware Setup

- Sensors come with a default Static IP of 192.168.0.100.
- To quickly enable DHCP or change the static IP on the device, plug the Ethernet port marked "IN" into the PoE Switch and the port marked "OUT" into the computer. This will avoid the need to change your computer's subnet to find the device on your network.
- When the device is at it's desired IP, you can program it further through the device manager and web software.
- If you plan to communicate through dry contact, insert the green relay adapter into the device.
- Avoid installing the device in the ceiling until you have it fully configured.

Network Setup

Adding Devices

- Open the Triton Enterprise Device Manager and navigate to **Device Management** > **Auto Scan**
- **Auto Scan** will discover the device(s) on your network
- Go back to **Overview** and click **Automatic** to add these devices permanently
- Edit networking and login information directly from the device manager or click the “browser” icon to manager in the device software.

Device Programming

Changing Network Settings [Video Instructions]

In Triton Device Software:

- Navigate to **Network Config** > **IP Address**
- Enable or disable DHCP depending on your needs
- If DHCP is disabled, a static IP and other information must be set

Connect to WiFi

- Navigate to **Network Config** > **WIFI Config**
- Click **Enable**
- Enter the wireless network information
- Click **Save and Connect**

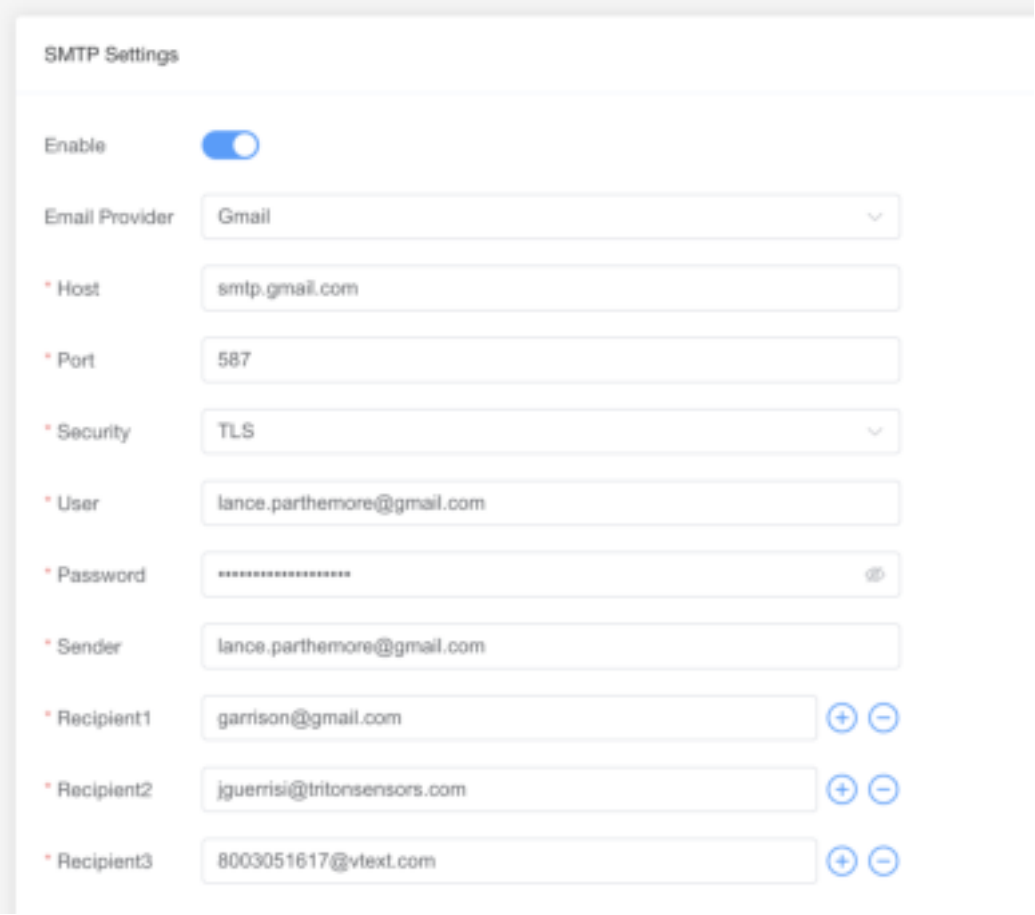
Email Alerts Configuration [Video Instructions]

Email Template Page:

- Navigate to **Resource** > **Email Template**
- Enable if necessary. Change the default subject and body, using the wildcards as necessary

SMTP Settings Page:

- Enter your provider's SMTP information in accordance with the required fields (use the **Email Provier** field to apply default settings for Gmail or Outlook)
- Add one or multipel recipients by email or phone number for SMS
- Note that SMS texts are sent through SMTP to SMS. Not all carriers support this standard. The most common carriers are listed below and their numbers can be formatted in accordance with the below template.
    - Verizon: *number@vzwpix.com* or *number@vtext.com*
    - AT&T: *number@txt.att.net*
    - T-mobile: *number@tmomail.net*



Enabling Action Settings [Video Instructions]

Action Settings are where you choose what happens once an event is triggered. By default, there are no actions enabled on the device. Click the checkmark under an action to turn it on for a particular setting. For example, check “Email Set” for the vape event to get emails when vape is detected. Advanced protocols such as TCP, HTTP, and MQTT are for itnegrating the events with other systems. You may also choose to have the alarm relay, light, and speaker react to specific event types.

Upgrading Firmware

Note: Only use this setting if you have recieved a new software .bin file directly from Triton and its version number is later than the one listed in *Device Info.*

- Navigate to **Device Settings** > **Upgrade**
- Click Upload
- Upload your .bin file
- Ensure the status says “Not Upgraded” and click the blue “Send” paper airplane icon
- Wait for the update to complete
- Do not restart the device or exit the page until the update is complete

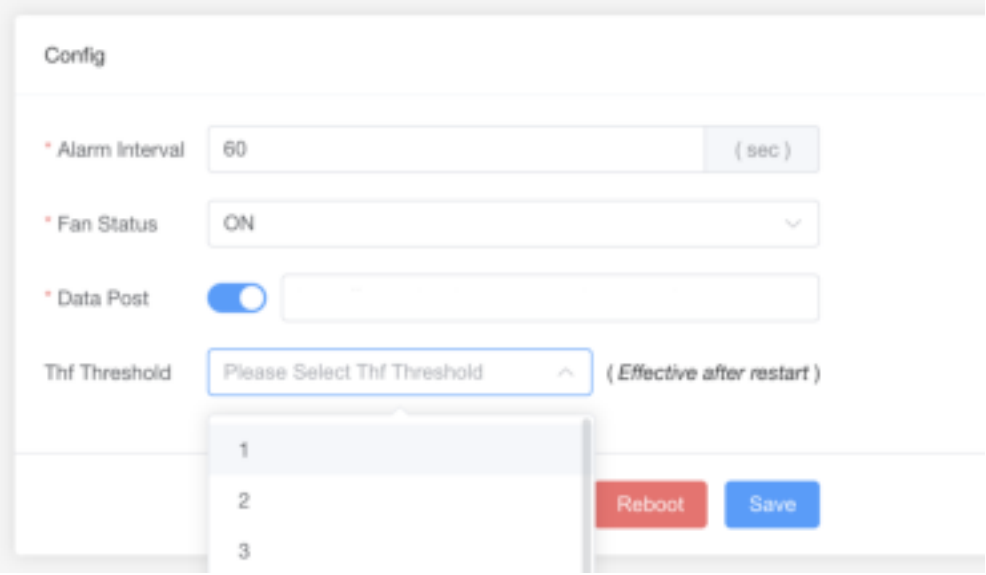
Adjusting Common Device Settings

System Time:

- You may either sync the system time to a NTP server or with your computer’s time
- To sync with an NTP server, Click **Enable**, select an appropriate server and time zone, and click **Save**
- To sync with your time zone, unclick **Enable**, and click **Sync Local Time**. Finally click **Save**.

Emergency Keyword Sensitivity

- No adjust keyword detection sensitivity, navigate to **Device Settings** > **Config**
- Select THF Threshold and select an appropriate value
- 1 is the least sensitive, 10 is the most sensitive
- You will need to reboot the sensor for the settings to take effect



Custom Keywords and Multi-Language Support

- Coming soon

Triton Enterprise Device Manager Deep Dive

Overview Page

- Where devices are added, either automatically or manually

- **Automatic** searches the LAN for eligible devices
- **Manual** supports adding devices either through IP Address manually or by UUID
- **Note**: if devices are not new, you must input the device's current password. Otherwise, it will use the default password.
- Each device in the list will display important information by default such as UUID, MAC Address, Location, IP Address, and last time online.
- Click the blue "browser" icon to the right on the list to open the device's dashboard page

Device Management Page

- The device

Firmware Management Page

- Manage firmware files and update multiple devices at once in the firmware management page..
- Click **Upload** at the top to upload new firmware to the list
- Select one or multiple devices and click **Upgrade** to update the firmware on the selected device(s).
- Patiently wait for the update to take place. Do not close the program or disconnect the devices or computer from power or network access.

Triton Device Software Dashboard Deep Dive

Notification Icons Explanation

The blue icons on the right side of the screen on the dashboard page turn orange when a respective event is detected

Sensor Overview Dashboard

Sensor Data and Air Indexes

Multiple chemical and environmental measurements taken directly from the device's on-board sensor suite.
Temperature: ultra-accurate measurement from a thermopile temperature sensor
Humidity: relative humidity around the sensor
Total Volitile Organic Compounds (TVOC): this is a common benchmark measurement for air quality and represents VOCs in the air
Carbon Monoxide (CO): CO is a colorless, odorless gas that is highly toxic and can cause symptoms ranging from headaches and dizziness to unconsciousness and death. Early detection is vital for safety, especially in areas with fuel-burning appliances.

Carbon Dioxide (CO2): Elevated CO2 levels can indicate poor ventilation, leading to drowsiness, headaches, and decreased cognitive function. Maintaining optimal CO2 levels ensures a comfortable and productive indoor environment.
Nitrogen Dioxide (NO2): NO2 is a byproduct of the combustion process. High levels of NO2 can cause respiratory issues and increase the risk of infections. Monitoring NO2 helps in identifying and mitigating sources of indoor pollution.
Particulate Matter PM1.0 - PM10.0: High levels of particulate matter can cause respiratory problems, aggravate asthma, and decrease overall lung function. Monitoring these levels helps ensure the air is safe to breathe, especially for vulnerable groups like children and the elderly.
Formaldehyde (HCHO): Formaldehyde is a common indoor pollutant found in building materials and household products. Long-term exposure to formaldehyde can cause respiratory issues and is classified as a human carcinogen. Monitoring formaldehyde levels helps in identifying and reducing exposure sources.
Air Quality Index (AQI): The AQI provides a standardized indication of overall air quality based on multiple pollutant levels. The AQI helps you understand at a glance how clean or polluted the air is, and what associated health effects might be a concern for you and your family. It is a useful tool for making informed decisions about outdoor activities and ventilation needs.
Health Index: This index combines various air quality metrics to give a comprehensive assessment of the potential health impacts of the current air quality and its promotion of the spread of disease.

Risk Level: The Risk Level indicates the immediate risk posed by the current air quality, based on a combination of pollutant levels and health impact assessments.

Daily Comparisons

The device’s software will automaticlaly compare AQI and other metrics to the previous few days of data for an easy benchmark comparison.

Occupancy Visualization

Occupancy visualization is a key feature of Triton ULTRA. A web version is available on the dashboard page which displays key information such as people count, loiter count, location, average time, and more.

Data Graph

The web software graphs the last hour of data to easily visualize and compare when an event takes place. Click hover over a data stream to visualize just that metric. Click on a metric name to exclude it from the list.

Device Settings

Device Info

UUID: a unique identifier similar to a serial number.

Model: the model name, Triton-ULTRA
Location: the name assigned to where the device is location
Latitude and Logitude: the exact location of the sensor for record keeping and location purposes
Additional information: also for record keeping and identification purposes
Versions: the respective versions for different device functions

System Time

Supports custom time, system time, and NTP server time sync.

Firmware Upgrade

Easily deploy a firmware update. See the Triton Enterprise Device Manager to bulk-deploy firmware updates.

Function Test

Test various functions of the device including lights, speakers, GPIO, and fan.

Management

Admin vs. Viewer Difference

Admin has full control over the device, settings, alerts, integrations, and recipients.
Viewer has read-only access and is mainly intended for viewing the dashboard and event logs.

Network Config

IP Address Config

Enable DHCP for connection to a DHCP network with automatic assignment. Disable and configure a static IP Address otherwise.

WIFI Config

Allows you to connect the device to the WiFi network for wireless management and when installed over 12V DC Power

Resources

Audio Config

Manage current audio files or upload new ones.

Email Template

This is where the alert email will be sent for events where enabled through Action Settings. Many customers choose to leave the default email template or to create one which fits their needs through the extensive wildcard list.

Event Settings

Event Identifier

The name assigned to the event that is being created

Data Source

The source of data which the event is derived from

Threshold

The level at which an event will alert from when exceeded. Note that some events such as drug detection (vape, THC, cigarette, etc) are AI based and do not need a threshold. For there, threshold acts more as a sensitivity. Additionally, for state change events such as keyword detection and glass break detection, a threshold is also not necessary.

Pause

Advanced (coming soon)

Default Event Types

There are multiple pre-configured event types which are meant to cover many of the most popular use cases for Triton ULTRA

Adding New Event Types

Customers can of course add their own event types and choose a custom data source and threshold. Advanced features such as combinations data sources and custom timing and logic are coming soon.

Action Settings

Trigger Settings

When an event is detection, what follows depends on what is checked in Action Settings. This is usually an email or a platform integration through HTTP, TPC, or MQTT. It can also be an alarm, siren, or light change.

Tie-In With Platform Integrations

When a platform tie in such as HTTP, TCP, or MQTT is triggered, the message that sends depends on what is defined in the Platform Integrations page.

Alarm Out

Pulls the dry contact on the device to trigger an external relay such as a speaker, door, light, etc.

Light

The multi-color on-device LED can react in a number of ways to different event types sucha s by having different color or pattern reactions.

Priority

This dictates the priority in which actions are taken if two events are triggered simultaneously. Lower = higher priority.

Speaker

Play pre-configured or custom audio files when an event is triggered.

Platform Integrations

Wildcard Definitions

TCP / HTTP / MQTT Settings

Each of these is a messaging protocol to interact with a third party system. Each system is designed to ingest different data and respond accordingly. Refer to our integration guides for such systems to learn more.

RTSP Settings

RTSP is enabled by default and the settings do not need to be changed on most video management systems.

Heartbeat

Send continuous data at a pre-defined interval through HTTP, TCP, or MQTT. Choose text or JSON format and utilize Triton’s extensive wildcards.

SMTP Settings

This is where to put email sending SMTP credentials. Contact your administrator for your SMTP login information or creat a free Gmail account and use the Gmail template with its username and password to act as a dedicate sender.

Data List and Data Log Download

Data List

Extensive log data taken every minute by the sensor. You can download this data for analysis. Data is stored for up to six months.

Event List (coming soon)

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.
Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RF Exposure Information
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

ISED Statement

English:This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada’s licence-exempt RSS(s). Operation is subject to the following two conditions:
(1) This device may not cause interference.
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

The digital apparatus complies with Canadian CAN ICES-3 (B)/NMB-3(B).
French: Cet appareil contient des émetteurs/récepteurs exempts de licence qui sont conformes aux RSS exemptés de licence d'Innovation, Sciences et Développement économique Canada. L'exploitation est soumise aux deux conditions suivantes :
(1) Cet appareil ne doit pas provoquer d'interférences.
(2) Cet appareil doit accepter toute interférence, y compris les interférences susceptibles de provoquer un fonctionnement indésirable de l'appareil.
l'appareil numérique du ciem conforme canadien peut - 3 (b) / nmb - 3 (b).
This device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS 102 RF exposure, users can obtain Canadian information on RF exposure and compliance.
cet appareil est conforme à l'exemption des limites d'évaluation courante dans la section 2.5 du cnr - 102 et conformité avec rss 102 de l'exposition aux rf, les utilisateurs peuvent obtenir des données canadiennes sur l'exposition aux champs rf et la conformité.
This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment.
Cet équipement est conforme aux limites d'exposition aux rayonnements du Canada établies pour un environnement non contrôlé.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.
Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et votre corps.