

Solutions for IoT, Automation, and Environmental Monitoring

Real-time monitoring solutions for
people, assets, and environmental
conditions

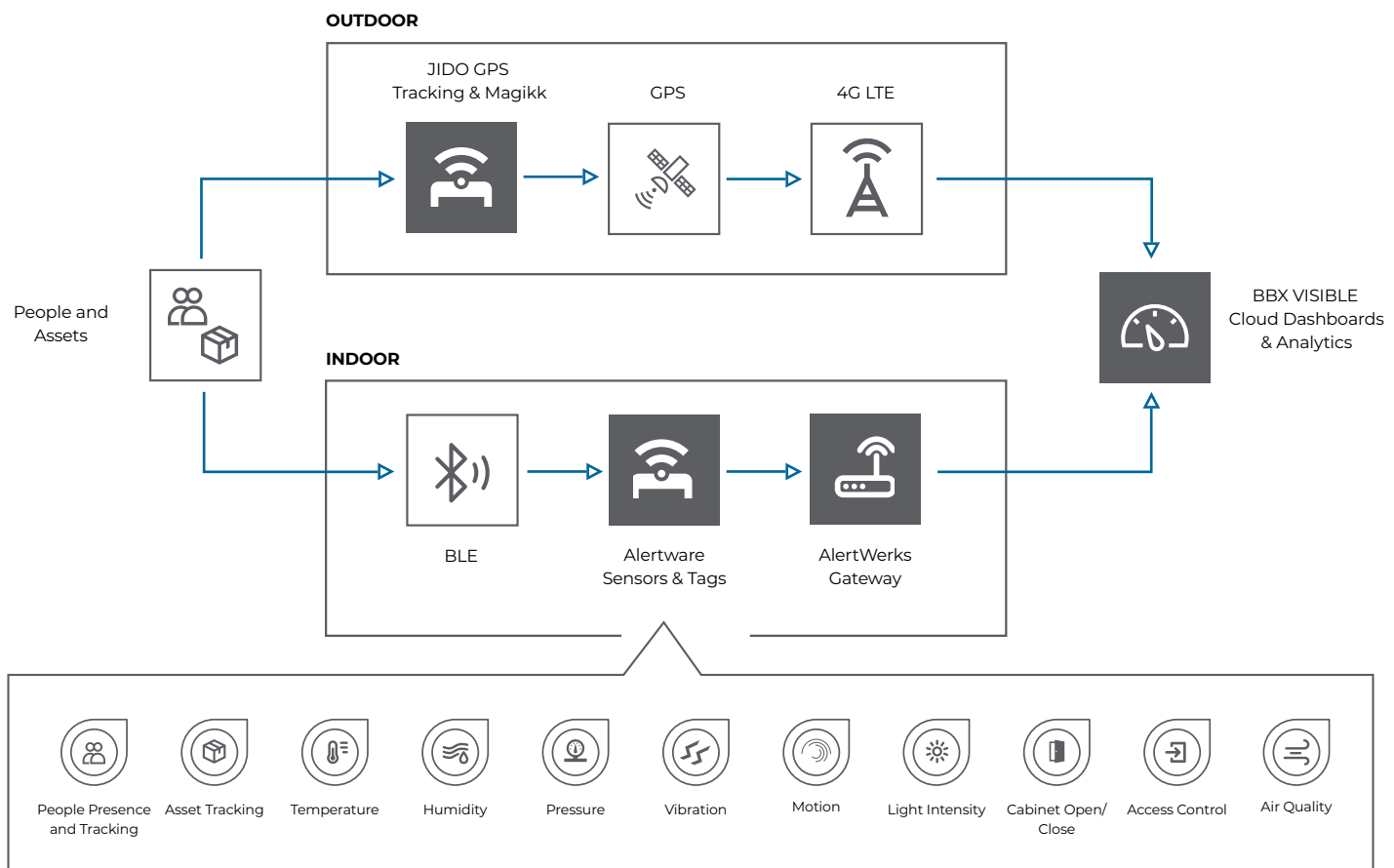


Monitor And Protect Mission-Critical Infrastructure In Real-Time

In today's digital-first world, data is the new oil and Cloud is the new real estate. With organizations increasingly collecting, processing, storing, and managing Yottabytes of new data every day, Data Centers and Server Rooms have become one of the key engines to drive business growth.

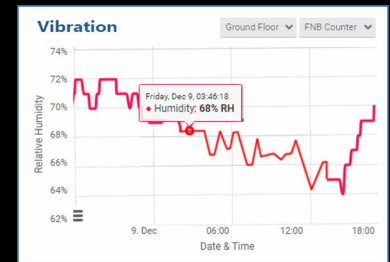
The Black Box IoT and Environmental Monitoring Solution consists of wireless sensors, gateways, and monitoring & analytics software to provide a complete remote monitoring solution that is compatible with existing DCIM systems. Wireless sensors are used to precisely monitor local conditions, integrating condition monitoring and RTLS-based tracking of assets and people.

Black Box IoT Solutions – Components



Benefits of Black Box IoT Solutions

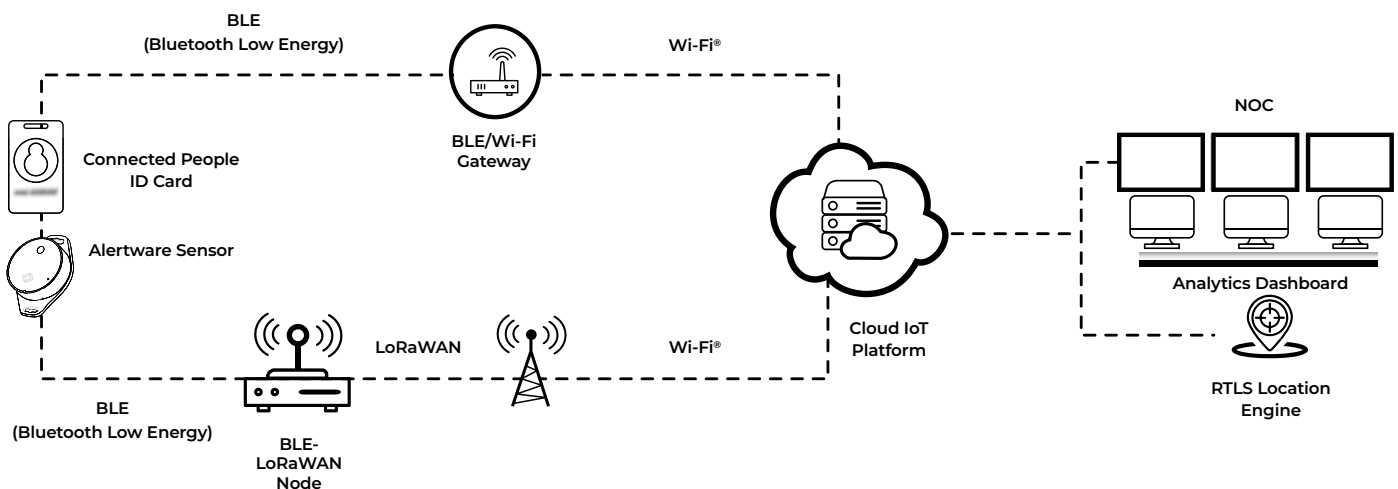
- **Wireless Options:** no additional cables required, extended battery life
- **Plug & Play:** seamless integration with Black Box and third-party Wireless Access Points and analytics software
- **Scalable:** start small and build out your solution as your data center grows
- **Modular:** build your analytics dashboard as per your individual requirements and add new sections as you add additional sensors and beacons
- **Real-time data:** accurate, real-time information about sensor status on your personalized BBX VISIBLE dashboard



Black Box IoT Solutions Help Organizations Maximize Their Critical Infrastructure's Uptime and Security

Our solutions provide an easy path to creating a digital twin of data centers, smart buildings, warehouses, or any other facility that houses critical assets. It allows monitoring people and asset movement and location in real-time, while also maintaining precise historical records for future analysis of events.

Combine any Black Box or third-party sensors and gateways with the BBX VISIBLE Web Interface and Analytics Software and set up and configure all of them centrally. Create dashboards intuitively, and watch things happen live without any latency. You can also configure notifications and alerts, allowing the system to perform actions automatically or bring any issue or problem as an alert to your attention on the monitoring interface or other channels.



Alertware Wireless Sensors

Alertware is a wireless sensor product family that enables you to monitor environmental conditions such as temperature, humidity, PIR, and more, to provide complete control over your critical IT environments. Track and monitor any change in conditions, trigger automatic alerts, and switch equipment on or off when needed.

When combined with BBX VISIBLE, Alertware is a fast and affordable solution to create your data center's, room's, or building's Digital Twin.

- Sensors for environmental condition, people, and asset monitoring
- Work seamlessly with all standard access points supporting BLE and Bluetooth

- Plug & Play deployment at every nook and corner of the room
- Easily integrate with cloud-based IoT platforms such as Black Box BBX VISIBLE
- Monitoring and Management through Cloud Platform or Mobile App
- Long-lasting replaceable coin cell batteries: 3+ years of battery life (under ideal conditions)
- Compatible with Apple iBeacon® technology
- Configurable and upgradable over-the-air
- Customizable advertising capability to handle various beacon formats (e.g., Eddystone and AltBeacon)

Available Sensors

Product Code	Description
Environmental Monitoring Sensors	
ALERTWARE SE02	Ambient Monitoring - Temperature/Humidity Sensor
ALERTWARE SE03	Ambient Monitoring - Temperature / Humidity Sensor and Accelerometer
ALERTWARE SE09	Air quality Monitoring - Temperature / Humidity / Pressure / Air Quality Index / TVOC and eCO2 Sensor
ALERTWARE SE08	Temperature Data Logger - Cold Chain Data Logger
ALERTWARE SE06	Light Intensity Monitoring - Light Intensity Sensor
ALERTWARE SE16	People Presence - PIR Sensor
ALERTWARE SE07	Door Open Close / Hall Sensor
RTLS Sensors	
ALERTWARE SE05	Indoor Location - RTLS BLE Tag
ALERTWARE SE04	Movement Detection - RTLS Tag
ALERTWARE SE12	ID Card with SOS Button
ALERTWARE SE11	Movement / SOS Smart Button - Bluetooth



Ambient Sensor
(ALERTWARE SE02)



Bluetooth Smart Button
(ALERTWARE SE11)



People Presence - PIR Sensor
(ALERTWARE SE16)



ID Card with SOS Button
(ALERTWARE SE12)

AlertWerks Wireless Gateway

AlertWerks AW3000 is an all-in-one-box LoRaWAN solution for wireless IoT applications. This is much more than competing gateways that upload data to a cloud service; it is a central unit that gives you full control via a web interface.

As an open platform, AW3000 enables you to use any LoRaWAN 1.0.x compatible sensor on the market. AW3000 has a very easy connect/join procedure to get LoRaWAN data from your sensor flowing into the system. Along with virtual sensors, actions, and notifications, you can also set up and use multiple dashboards.

- All-In-One-Box LoRaWAN gateway
- Uses physical (LoRaWAN) and virtual (SNMP/WGET/PING/Latency and more) sensors

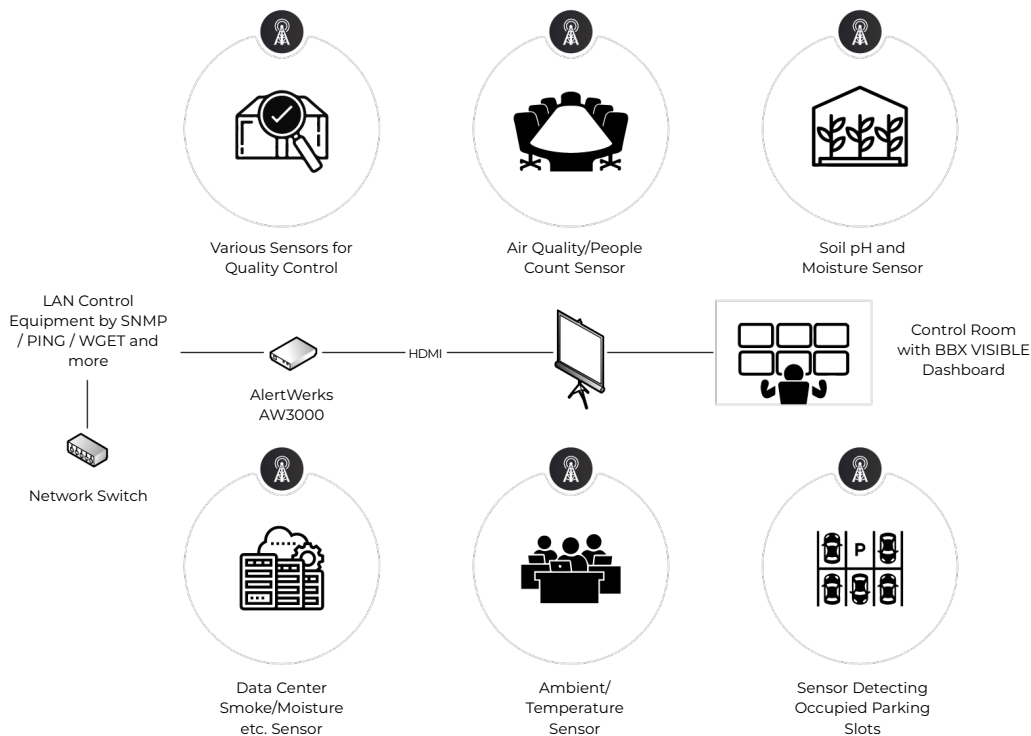
- Offers unique configuration options for actions and notifications
- Enables you to additionally control other Wi-Fi® sensors and actuators
- Works as an open platform with accessible SQL database
- Provides redundancy
- Access dashboards via HDMI output, from a Web Interface, or using ControlBridge®
- Powered through PoE+ or USB
- Network RJ-45/LAN and Wi-Fi 802.11bgnac

Available Gateways

Product Code	Description
EME800A-US	AlertWerks AW3000 Wireless Gateway - United States (915 MHz)
EME800A-EU	AlertWerks AW3000 Wireless Gateway - Europe



EME800A-US



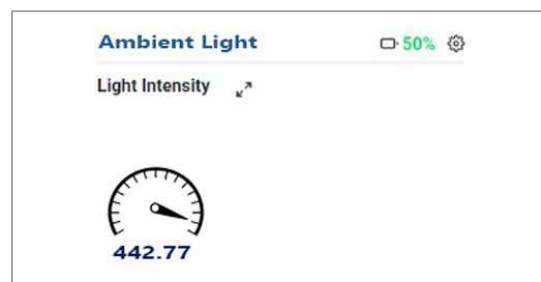
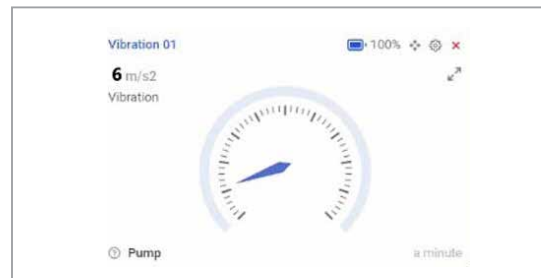
BBX VISIBLE IoT Platform

BBX VISIBLE is an intuitive, scalable, and secure IoT platform featuring multiple modules for monitoring people, assets, energy, air quality, equipment, illumination, and other functions. Use BBX VISIBLE to create a digital twin of your rooms or the entire campus.

BBX VISIBLE has been created to seamlessly connect IoT devices, actuators, sensors, gateways, and other end-point devices to gain insights from the acquired data utilizing AI/ML (Cloud Based) enabling you to make better business decisions. The application and dashboard can be tailored to the specific needs of your business and provides benefits such as improved ROI, reduced downtime, and improved physical security.

The modular design of BBX VISIBLE allows for a system deployment tailored for your specific needs. The solution is available as an on-premises (Dockerized) or Cloud-based (SaaS) Data Collection and Monitoring Solution, and adheres to industry-grade security protocols including SSL based security and standard security practice.

Compatible with all major IoT cloud systems, BBX VISIBLE IoT Cloud dashboards are designed keeping the user in mind while allowing for maximum flexibility in terms of dashboard arrangement and automation functionality.



BBX VISIBLE - Your IoT Swiss Army Knife



Monitor various conditions:

- Real-time Temperature
- Air Quality Index
- Vibration Monitoring
- Door Open/Close Monitoring
- Light Intensity Monitoring
- Air Flow Sensing
- Motion Detection Sensor
- Panic Button
- Motion Detection
- Smoke Sensor
- Relative Humidity
- People Presence Detection



Set alerts and events based on:

- High Temperature
- Moisture
- Unauthorized Access
- Airflow
- Door Open
- Vibration
- SOS signals/beacons
- "Man Down"
- Water Leakage
- Motion Detection
- Light Intensity
- Air Quality

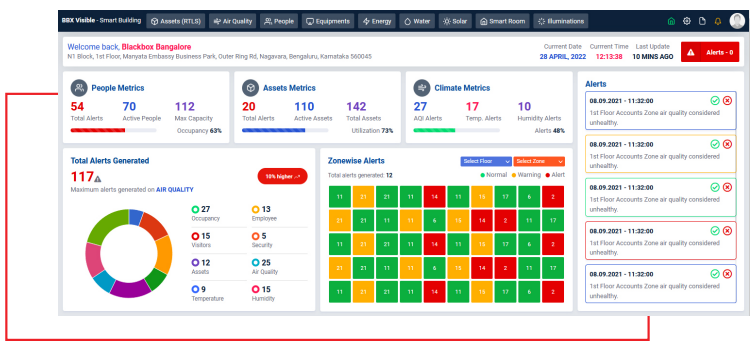


Improve security through:

- People Tracking
- Asset Tracking
- Access Control
- Door Open Monitoring
- Rack Open Monitoring
- People Presence Detection
- Zone-wise Monitoring
- Video Surveillance Integration
- Sensor Data Integration
- Asset Movement Detection
- Rodent Detection
- Smoke Detection



BBX VISIBLE IoT Platform



Dashboard

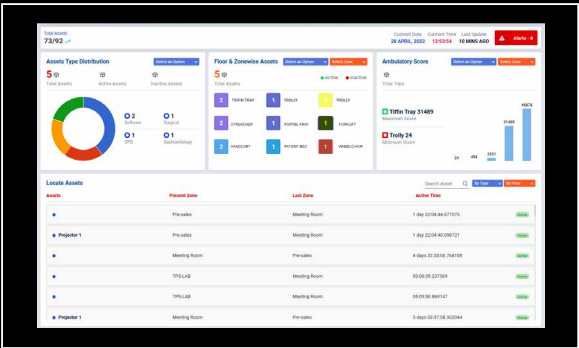
The BBX VISIBLE Modular Dashboard visualizes and highlights the most important metrics based on your priorities.

Whether there is an SOS from a person, any malfunctioning asset, or if there is an abnormal change in air quality inside the building due to high carbon dioxide levels - BBX VISIBLE enables you to quickly react based on automated alerts.

BBX VISIBLE Asset Module

Location of assets in real time, management of their utilization, and maintenance of assets and equipment for predictive maintenance are the key features of this module.

This module allows operators to locate movable and ambulatory assets with a single click.



Other BBX VISIBLE Cloud modules:

- **Equipment** – Predictive Maintenance and Utilization
- **Solar Energy** – Measure and analyze with ease
- **Illumination** – Visualize and control illumination throughout the building
- **Energy** – Visualize metrics, measure, and analyze to reduce waste of energy
- **Water** – Reduce wastage of water

Available Solutions

Product Code	Description
BBX-VISIBLE	BBX VISIBLE IoT Management Software, Business License



JIDO - LTE Asset Tracking via GPS

JIDO is a long battery life GPS tracking and cargo-condition monitoring solution for the transportation and logistics industry. With JIDO LTE Tracker, you gain 24/7 access and control over the status of your assets, containers, trailers, freight wagons, or other shipments in transit and storage.

Real-time, event-based alerts enable rapid response to system failures, route-deviations, delays, and other critical issues that can jeopardize valuable assets. In addition, JIDO can obtain sensor-based cargo information, including temperature, humidity, vibration, and other useful telematics data.

Built rugged, JIDO operates in the most difficult and demanding environmental conditions and comes in tamper-proof IP67-rated housing. Unlike other asset tracking devices, JIDO offers 4G dual SIM support that ensures permanent connectivity – anytime, anywhere – using multiple network providers. Even better, installation is easy and takes less than 10 minutes. Simply attach JIDO with the asset and fix it to the asset flexibly, which can be removed from the asset and re-used for other assets to be tracked.

Through all of this advanced functionality, JIDO provides full protection of valuable in-storage assets in terminals and real-time, end-to-end visualization of moving

containers on vessels, long-haul trucks, freight trains, and commercial transport.

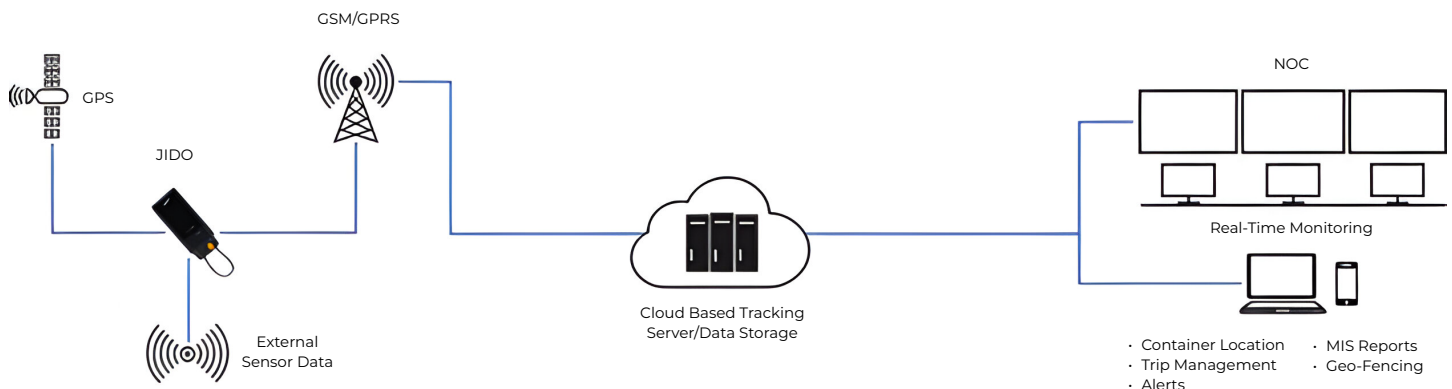
- Ideal for long term cargo, shipments, and asset tracking
- High GPS tracking accuracy of 2.5 m CEP
- Weather, shock, and dustproof with rugged IP65-rated housing
- Operates up to 60 days on a single charge
- Rechargeable 15000 mAh battery operated
- Support for two SIM cards provides seamless connectivity
- Operates on 4G LTE
- Alerts for acceleration and tampering via built-in sensors
- Can integrate with additional sensors, such as temperature and humidity sensors, ideal for cold-chain transportation of medicines and foods
- User-friendly software for creating geo-fences, routes, trips, stops, and zones
- Smooth device tracking via web and mobile app
- Quick and easy installation that takes less than 10 minutes

Available Gateways

Product Code	Description
T64	JIDO LTE Tracker



JIDO Application Diagram



Magikk - Connecting Workers via GPS

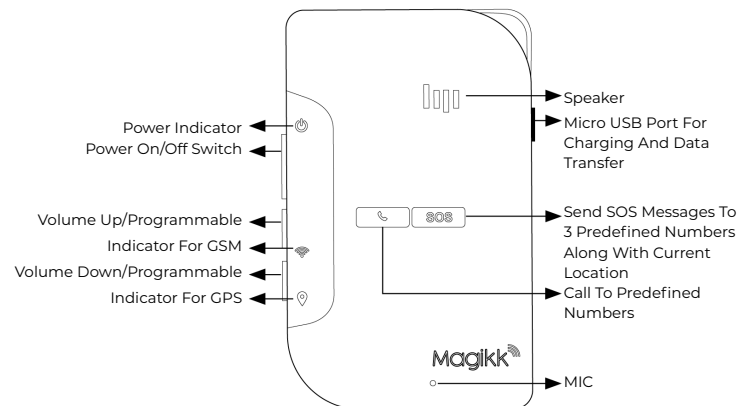
Magikk is a small, wearable, IoT-enabled locating, communicating, and security solution for workers and employees involved in lone-worker scenarios, hazardous workplaces, and in the general field workforce. An industrial IoT wearable device that connects your workers, Magikk comes loaded with multiple sensors and voice alerts for industrial usage. Combining sensor data with satellite positioning, it ensures that every step of the worker is in full visibility of the Command and Control Center and the Safety Officers.

Magikk seamlessly connects with enterprise EHS compliance systems, with complete reporting of any violations and mitigation responses. Magikk Mobile App and cloud is available for visualization, control, and monitoring on-the-go with alarms for any violation in the no-entry or hazardous zones. The Magikk IoT device has built-in industrial and workforce safety for immediate detection and communication of emergency events, including sensor-based possible violations. Built-in sensors of Magikk immediately detect any staff immobilization or “man down” situations – even at a remote location.

- Real-time location tracking - gain full visibility of workers at remote locations, inside the industrial facility
- Industrial and Workers' Safety - Built-in sensors detect any immobilization of staff or employees on premises, anywhere outdoors or indoors
- Provides end-to-end remote visualization of remote workers – outdoors and indoors
- Ensures comprehensive industrial and workers' safety from possible life-threatening situations
- Integrates with the enterprise EHS systems
- Detects possible violations and immobilizations via sensors
- Enables an immediate two-way emergency communication system
- Geo Fencing Alerts

Available Magikk Wearables

Product Code	Description
T57PX112G	Magikk Industrial IoT Wearable Device
Accessories	
T57AA1202	Water resistant pouch
T57AA1303	Belt clip
T57AA1404	Arm band
T57SS1108	Web portal license for 1 year/device
T57SS1209	User app license for 1 year/device
T57SS1310	Telecom usage pack for 1 year
T57WW1111	Extended warranty for 2 years





ABOUT BLACK BOX

Black Box® is a trusted IT solutions provider delivering cutting-edge technology products and world-class consulting services to businesses across the globe in every industry. The breadth of our global reach and depth of our expertise accelerate customer success by bringing people, ideas, and technology together to solve real-world business problems.

