Solution Datasheet

River and Waterway Turbidity Monitoring

Effective water quality monitoring is not just about preserving our environment – it's about safeguarding the health of our communities and future generations.

CHALLENGE

The continuous monitoring of river and waterway turbidity is crucial for maintaining water quality and ecosystem health. Traditional methods are labor-intensive, lack scalability, and are prone to errors and delays in data collection. Monitoring in remote or difficult-to-access areas adds to the complexity of the task, creating a need for a more efficient solution.

SOLUTION

Ellenex's battery-operated Turbidity Sensor, leveraging NB-IoT technology, provides a powerful answer to these challenges. The rugged, IP65 rated sensor offers near real-time monitoring of turbidity levels, transmitting data every few hours for accurate and timely insights. The sensor's ability to operate in harsh industrial applications makes it perfect for remote or difficult-to-access locations.

The benefits of this solution include:

- Near Real-Time Monitoring: Provides timely insights into water turbidity levels, enabling quick response to changes.
- Energy Efficient: The battery-operated sensor has a long operational life, reducing the need for frequent battery replacements.

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- Scalable: NB-IoT technology allows for the deployment of multiple sensors across various locations, offering a scalable solution for widespread monitoring.
- Rugged Design: With an IP65 rating, the sensor can withstand harsh environmental conditions, making it ideal for remote or challenging locations.
- Reduced Labor: Automated monitoring reduces the need for manual sampling and data collection, saving time and resources.

By addressing these challenges, Ellenex's turbidity sensor helps ensure the health of our waterways and the communities that depend on them.

Battery Operated | Ruggedised Design | Easy Install | Pre-Configured | Secure | Quick ROI

TECHNOLOGY

Ellenex employs cutting-edge communication technology by utilizing the LTE Cat M1 protocol, which operates on 4G and 5G cellular networks, making it suitable for mobile and stationary monitoring applications. However, its remarkably low power consumption and superior penetration rate, specifically designed for industrial solutions, sets it apart. Narrowband Internet of Things (NB-IoT) and LTE Cat M1 are advanced communication technologies that offer significant advantages for monitoring applications. These technologies provide efficient and reliable connectivity for IoT devices, allowing for seamless communication between our sensor and remote monitoring systems. NB-IoT and LTE Cat M1 are known for their low power consumption, enabling prolonged battery life for the devices, which is crucial for remote or hard-to-reach areas. Moreover, these technologies offer excellent penetration capabilities, allowing for reliable communication even in challenging environments,

NB-IoT LTE-M

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such as underground or remote locations where devices are often deployed. NB-IoT and LTE Cat M1 also provide secure and scalable connectivity, enabling robust and cost-effective solutions for monitoring applications in various industrial sectors, including agriculture, utilities, logistics, and more.

SENSOR TECHNICAL SPECIFICATIONS

• Measurement principle	850 nm Diffusion IR nephelometry at 90°	
• Measure ranges	5 to 4000 NTU in 5 ranges: • 5 - 50 NTU • 5 - 200 NTU • 5 - 1000 NTU • 5 - 4000 NTU • AUTOMATIC Selected Automatically	0 to 4500 mg/L Calibration: • Range 0-500 mg/L according to NFEN872 • Range >500 mg/L according to NFT901052
• Accuracy	<5% of the reading	
• Resolution	0.01 to 1NTU-mg/L	
• Temperature compensation	Via CTN	
• Storage Temperature	-10 to +60	°C
• Operation Temperature	0 to +50	°C
• Power Supply	Built-in Replaceable Lithium Battery	
• Rated Voltage	3.6	V
• Battery Lifetime	10,000+ transmissions	
• Materials	Sensor Head: PVC, DELRIN, Quartz, PMMA, Polyamide, cable: polyurethane, Enclosure: POM	
• Max Pressure on Sensor Head	5bar	
• Weight	~850 (for 3m cable)	g
• Protection Rate	IP68 for sensor head and IP66 and UV Protected enclosure	
• SIM Card Type	4FF Nano-SIM, from any Network Provider	
• Firmware Update	Over The Air, Locally via Wireless Connectivity	
• Sampling Period	Configurable via downlink (default 4 hours)	
• Communication Bands	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 and B39	
• Antenna	Internal (Default)/ External (customised options available)	

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PLATFORM FEATURES

Ellenex's software platform is a comprehensive and user-friendly solution specifically designed for diesel delivery management. The platform offers a wide range of features tailored for diesel delivery operations, including real-time data visualization, customizable alerts and notifications, historical data analysis, and predictive analytics. It provides users with a holistic view of their diesel delivery assets, allowing them to make data-driven decisions for optimal fuel management. The platform is accessible via web browsers and mobile devices, providing convenient remote access to critical information anytime, anywhere. Ellenex's software platform is designed with a user-centric approach, offering intuitive navigation and a user-friendly interface for easy setup and configuration. With its advanced features and ease of use, Ellenex's software platform empowers users to effectively monitor and manage their diesel delivery operations in remote areas, ensuring efficient and sustainable fuel resource management.

- Encrypted ultra-low power communication protocol
- Advanced device inventory
- Integration APIs for enterprise systems
- Multi-tenant role-based access control
- Data export and import
- White-label platform for enterprise runs on private account
- Variable alarm setting for high and low thresholds and multi-channel alerting
- Sampling and transmission interval configuration
- Transmission condition configuration
- Other configurations and customisation available on request


Encrypted & ultra-low power


Integratable


Dynamic alerting


Multi-tenant


Scalable


Composable & API first


Low cost


Action management


Resource monitoring

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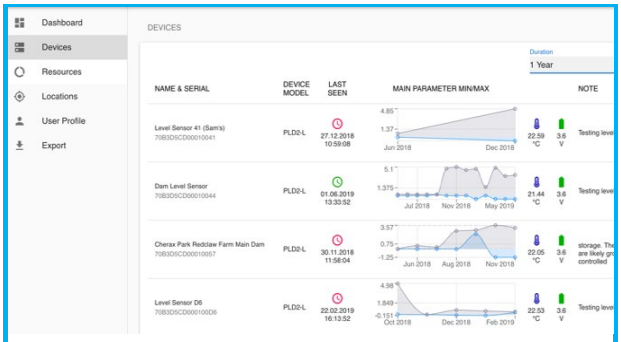
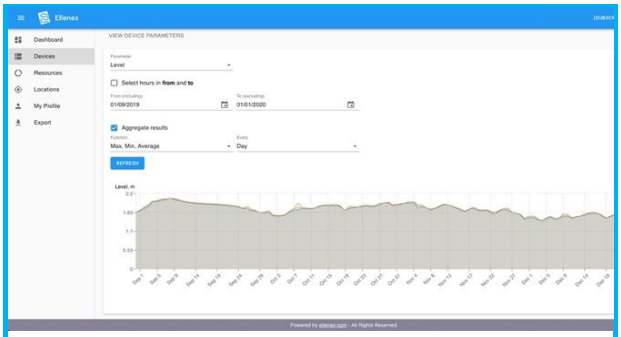
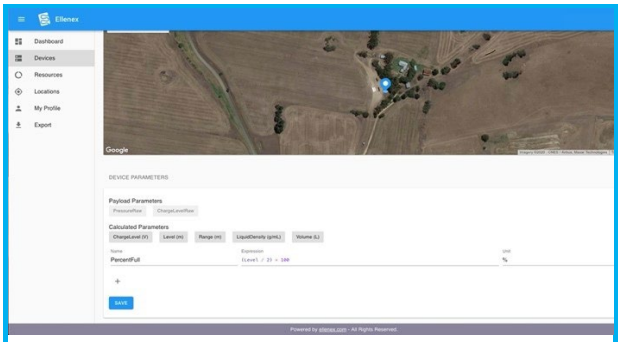


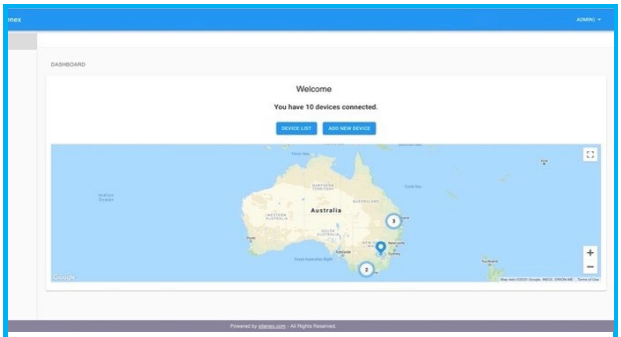
Single shot data visualisation of devices



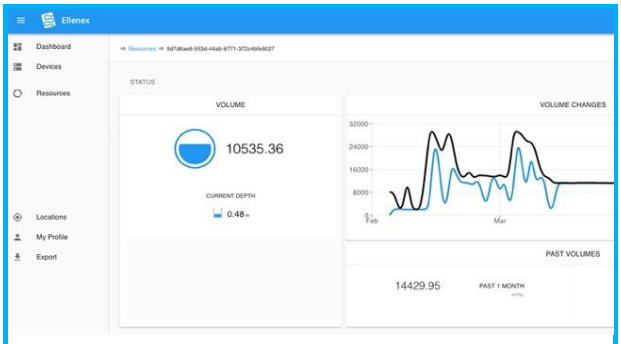
Easy historic data analysis



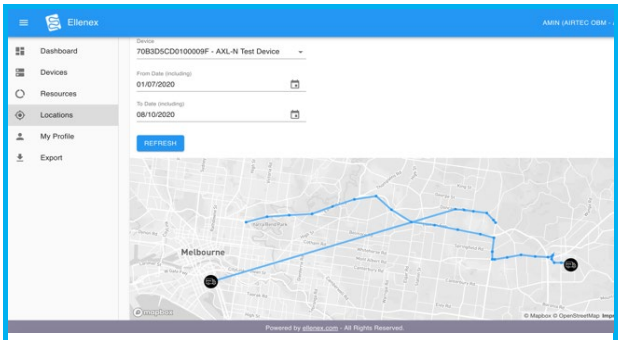
Asset location indication and complex formula



Device list visualisation on map



Volume calculation and prediction



Asset location monitoring (for mobile assets)

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INTEGRATION OPTIONS

Ellenex's solution sets itself apart with its pre-configured and plug-and-play design, eliminating the complexities of configuration, programming, and connection to the platform. This unique approach ensures that users can start monitoring their diesel tanks quickly and easily without any technical hassles. Additionally, Ellenex offers seamless integratability at both the network and platform levels, allowing for easy integration with any network or visualization/analysis platform. This competitive advantage makes Ellenex's solution highly adaptable and compatible with existing systems, providing users with flexibility and convenience in managing their diesel resources effectively.

ORDERING PROCESS

Ellenex offers simple and easy way to order the solution from any location on earth with narrow band cellular coverage. Please visit our sales portal (www.ellenex.shop) or contact us to discuss your application. This is the first step to experience a reliable IoT solution at scale.

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Purchase the solution online

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View the Included Sensor Datasheet

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Integrated IoT Solutions

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Web: www.ellenex.com
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