# Smart Pole Software Platform

# Product Specification

Product number: DH-LP-12-V1.0

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# Design Concept and Features

With the rapid development of science and technology, smart city has become an important development direction of future urban construction. As an integral part of smart city construction, smart poles are gradually gaining widespread attention and application due to their powerful functions and favorable effects.

A smart pole is a pole-shaped facility that integrates a variety of sensors and communication modules, which can be used to monitor the environment, transmit information, control traffic, etc. Its technical principle is based on the Internet of Things and cloud computing technology. By collecting and analyzing the surrounding environment data, it provides more

intelligent and efficient services for urban management and residents' life.

The advantages of smart poles are mainly manifested in the following aspects. First, it can provide more convenient and efficient services, such as improving traffic congestion by monitoring and adjusting traffic flow in real time. Secondly, smart poles can save the labor cost of urban management, and improve the efficiency of urban management through automated information collection and processing. Finally, smart poles can also provide more personalized services, such as providing different environments and information services according to user preferences and needs.

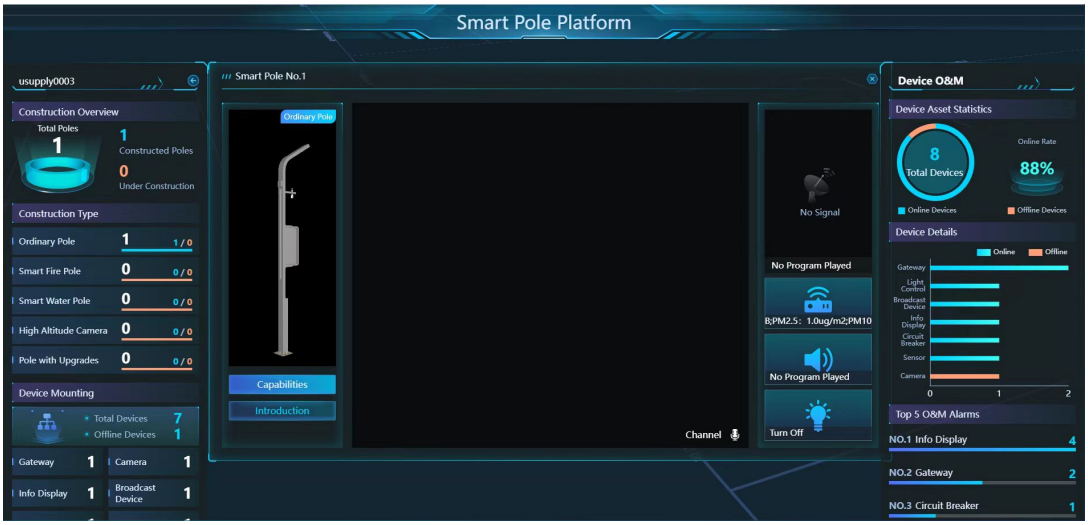
The application scenarios of smart poles are very extensive, such as in the field of transportation, automatic driving, environmental detection, smart home, smart park, urban planning and other fields. According to the forecast of market research institutions, in the next few years, the scale of the smart bar market will maintain rapid growth. With the acceleration of smart city construction, the application prospects of smart poles will be even broader.

In short, smart poles are playing an increasingly important role in the construction of smart cities, and their powerful functions and positive effects have brought many conveniences to urban management and residents' lives. We believe that with the continuous advancement of technology and the expansion of application scenarios, smart poles will bring more opportunities and possibilities for future urban development.

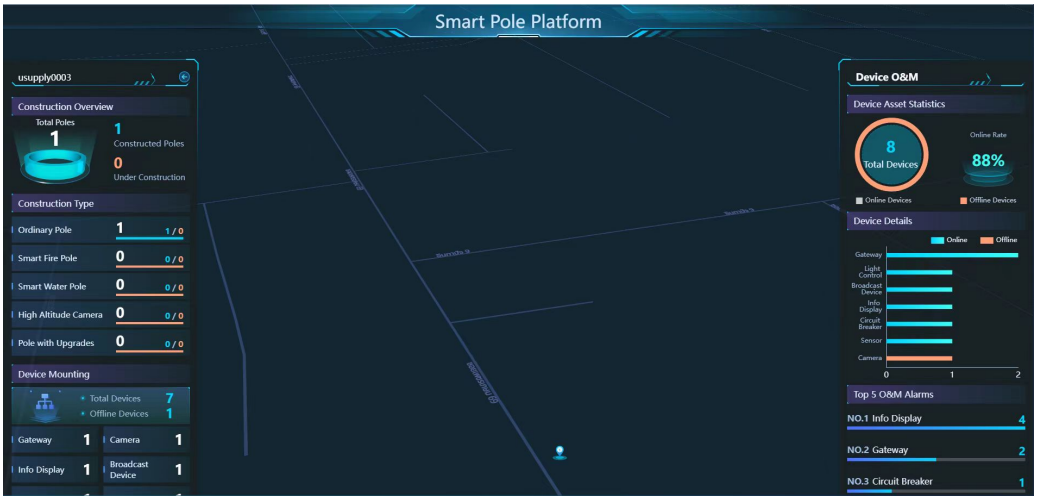
The smart bar cockpit not only fully demonstrates the overall construction of the smart bar, but also highlights the single-lever and multi-lever capabilities so that users can fully understand the diverse uses of the smart bar. The equipment operation and maintenance level of the smart pole is also intuitively displayed, so that you can quickly understand the operation status of each equipment on the current platform.

# 二、Feature

## 1. Smart Pole Capabilities




Let's first look at what a multi-function pole is and what capabilities it can provide. The multi-functional smart pole is an information infrastructure that integrates functions such as smart lighting, video surveillance, information release, one-key alarm, environmental monitoring, and public broadcasting. According to different scenarios and different functional requirements, different types of poles will be built.




Let's click on a rod first to see, this is the actual modeling of the rod body on site .

The intelligent devices on the smart pole can be mounted on demand . Usually, the equipment mounted on the smart pole includes: camera, information screen, broadcasting, and light control.

Camera: We can see the real-time monitoring screen of the camera mounted on the current pole through the screen. If the camera is a dome device that supports PTZ control, I can move the camera angle on this page to view different screens.

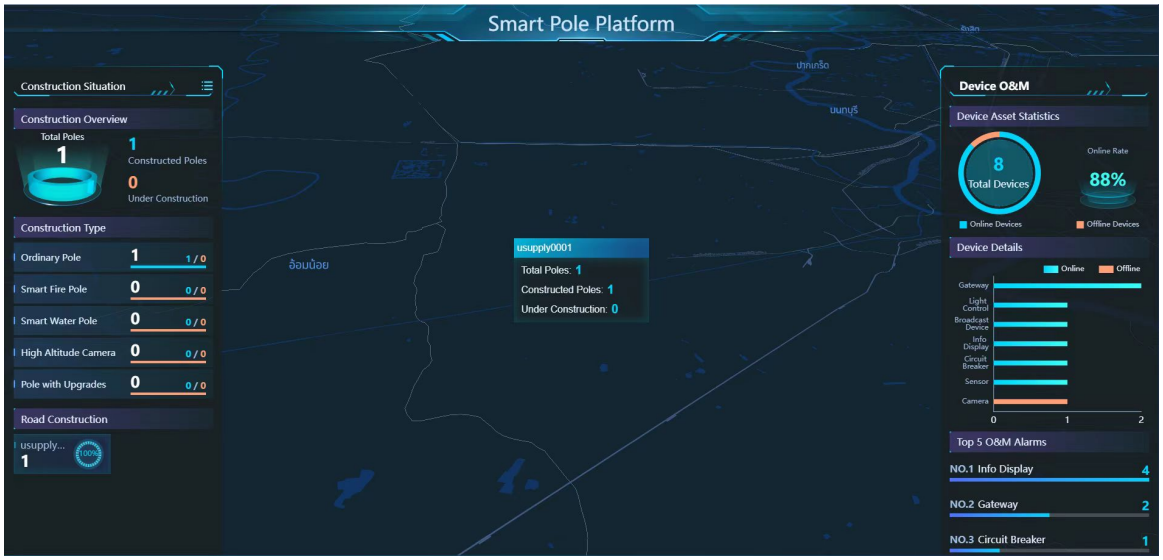
Information screen: You can check the usage status of the information screen mounted on the current pole and the currently playing program

Sensor: the parameters currently collected by the sensor

(for example: temperature, humidity, PM2.5 , PM10, etc.)

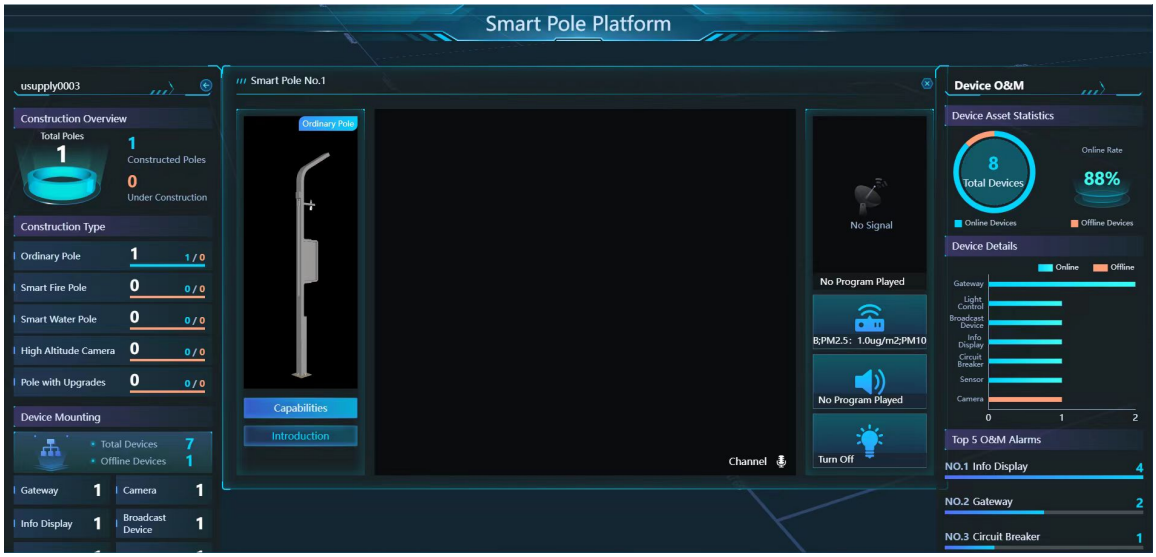
Broadcasting: View the current broadcasting status and broadcasting programs of the broadcasting

Lights: View the current lighting switch status of the lights.




Click on the introduction of the multi-function smart pole, here you can see the pole properties such as pole type, height, material, manufacturer and other information .

## 2. Building progress




In the construction status module, we can intuitively see the total number of smart poles in the current project, the number of smart poles that have been built, and the number of smart poles under construction through the construction overview.

Through the construction status of the pole type, you can see the total number of poles, the number of built and the number under construction of various types of poles (ordinary multi-functional poles, fire smart poles, water area smart poles, high-altitude cameras, old and modified poles).

The construction status supports summary viewing by organization level. Click on a different organization to enter the organization at that

level to view the data information at the current level.

Click on a single type of pole to view the construction of that type of pole in each street.

On the system platform, perform maintenance and management of smart poles, and support quick viewing of devices mounted on each pole body, and manage assets related to smart poles through platform maintenance .

## 3. Equipment operation and maintenance


In the equipment operation and maintenance module, we can know the total number of equipment mounted on the smart pole of the current platform and the online rate.

Smart pole global perception, monitoring the status of the smart pole body, awareness of the operating situation of the smart pole,

temperature and humidity early warning, tilt early warning, water immersion early warning, etc., statistical equipment online status, analysis of the offline rate of each equipment, and equipment operation and maintenance analysis.

the TOP5 operation and maintenance alarms, we can understand the equipment data that is prone to failure on the current platform, and through the analysis of the data, we can better implement the operation and maintenance plan.

# 三、Platform operating environment

## 1. Platform software operating environment

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|---|---|
| The hardware environment for development: | The development CPU is 4 cores and the main frequency is 2.3GHZ, the memory is 16GB, and the hard disk is 2 TB |
| Operating hardware | The CPU of the application server is 12 cores and the main frequency is 2.7GHZ or |
| The operating system on which the software was | windows10 |
| Software development environment/dev | vscode |
| The software platform/operating system: | ubuntu18.04 |
| Software running support environment/sup | Django framework, redis, mysql, tensorflow framework |
| Programming language: | python, JavaScript, TypeScript |