MT3801 sensor specifications - MT3801 sensor datasheet manual

Maxic releases fully integrated direct time-of-flight (dToF) **sensor MT3801**

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Product Features

Fully integrated module, including light source, filter and receiving processing **chip**, OLGA12 package

Built-in M0 core, algorithm development and tuning can be done based on customer applications to meet a variety of refined application requirements

Precise time-of-flight ranging, 0.02m-5.00m ranging range error <4%

Integrated temperature sensor, real-time temperature compensation to ensure detection accuracy when temperature changes

Chip interface supports 3.3V/1.8V/1.2V voltage, widely compatible with various platforms

Excellent EMI characteristics and sunlight resistance

Technical highlights

Fully integrated

In order to achieve smaller size and higher integration, MT3801 adopts a fully integrated system-level package module design with integrated transceiver, and integrates SPAD, algorithm processing module, M0 core, 940nm VCSEL and optical filter, using OLGA12 package, size 4.4mmx2.4mmx1.0mm. This innovative design not only simplifies the product structure, but also improves the product's EMI characteristics and anti-sunlight performance, and can meet the refined debugging needs of various applications.

Low power consumption
The MT3801 chip interface supports 3.3V/1.8V/1.2V voltages, suitable for the new

1.2V low-power platform, the current in standby mode is <10μA, the current in ranging mode is <20mA, and the minimum current in working mode is less than 18μA, meeting the needs of various low-power products.

High precision

The core advantage of MT3801 lies in its function of directly measuring the flight time of single photons, accurate flight time ranging, and an error of <4% in the ranging range of 0.02m-5.00m, with a maximum frame rate of 120FPS. At the same time, a **temperature sensor** is integrated to ensure the detection accuracy when the temperature changes through real-time temperature compensation. Various performance parameters meet the stringent requirements of real-time and accuracy in the field of intelligent sensing.

The impact of sensor MT3801 on the Internet of Things industry

The release of the MT3801 sensor has had a profound impact on the Internet of Things industry. As one of the core components of the IoT perception layer, sensors play a vital role in IoT systems.

MT3801 has brought new opportunities and challenges to the development of the IoT industry with its high precision, low power consumption and wide compatibility. For more information, please follow the IoT Cloud Platform (https://blog.iotcloudplatform.com)

The application of MT3801 sensors in the IoT is mainly reflected in the following aspects:

1. Smart Home:

In the field of smart home, MT3801 sensors can be used in smart toilets, sweepers, projectors and other devices. Its high-precision ranging and low-power design enable these devices to achieve smarter and more energy-saving functions, such as water flow control of smart toilets and precise cleaning of sweepers.

2. Smart Security:

In the field of smart security, MT3801 sensors can be used to detect and track human intrusion. Its high-precision ranging and anti-interference capabilities enable security equipment to accurately perceive human dynamics in complex environments, improving the accuracy and reliability of security systems.

3. Smart Logistics:

In the field of smart logistics, the MT3801 sensor can be used to achieve accurate positioning and tracking of goods. Its high-precision ranging function enables logistics equipment to accurately perceive the location and status of goods in complex environments, improving the efficiency and accuracy of logistics systems.

4. Smart Transportation:

In the field of smart transportation, the MT3801 sensor can be used to achieve automatic navigation and positioning of vehicles. Its high-precision ranging and anti-interference capabilities enable vehicles to accurately perceive the surrounding environment in complex traffic environments, improving driving safety and efficiency.

About the IoT Cloud Platform

IoT Cloud Platform focuses on technical services such as sensor modules, communication modules, and **IoT solutions**. You can cooperate with us on the **IoT Cloud Platform**, including IoT product development, IOT embedded design projects, IoT module procurement, WiFi module design, **low-power module design** and manufacturing services; at the same time, you can also cooperate with advertising alliances on our website, and you can place advertisements on the **IoT Cloud Platform**. If you need, please contact us.