

Guangzhou Yueyueniao



Smart Lock – Smarter, More Connected Access Control with LoRa®

Find out how LoRa® helped Guangzhou Yueyueniao extend wireless range, reduce infrastructure costs, and dramatically improve battery life across large-scale smart lock deployments in China's residential, hospitality, and commercial markets.

QUICKFACTS

Company

Guangzhou Yueyueniao Intelligent Technology Co., Ltd
<https://wp.dmsiot.com/>

Customer Profile

Established in 2014, Guangzhou Yueyueniao specializes in smart door lock and access control system solutions. The company delivers PCBA solutions for a wide range of locking applications, including home smart locks, apartment locks, hotel locks, and cabinet locks.

Objectives

- Overcome high power consumption in conventional door lock solutions
- Extend wireless communication range between locks and gateways
- Reduce networking infrastructure and installation costs

Results

- Achieved long-range communication between gateways and door locks through LoRa's superior link budget
- Reduced wiring hardware costs and labor costs through gateway-to-gateway relay architecture
- Delivered significantly lower power consumption compared to conventional wireless technologies

Products and Services

- Semtech's [LoRa Connect™](#) LLCC68 (LoRa Sub-GHz Transceiver)



INTRODUCTION

Guangzhou Yueyueniao has been at the forefront of China's smart access control industry since 2014. The company designs and manufactures PCBA solutions that power a diverse range of smart locking products from residential smart door locks to hotel room systems and secure cabinet locks. With a strong focus on system integration and end-to-end connectivity, Yueyueniao serves property developers, hospitality operators, and facility managers who demand reliable, low-maintenance, and scalable access control infrastructure.

As demand for intelligent building solutions accelerates across China, Yueyueniao recognized the need to differentiate itself through connectivity technology that could meet the unique demands of large-scale deployments: long range, low power, and cost-effective network infrastructure. The answer was LoRa®.



CHALLENGE

Traditional wireless technologies used in smart door lock systems present several inherent limitations that restrict scalability, efficiency, and long-term deployment viability.

- **High Power Consumption:** Standard wireless protocols such as Wi-Fi and Bluetooth demand significant power, making battery-operated smart locks impractical over extended deployment periods. Frequent battery replacements drive up operational costs and maintenance burden for property managers.
- **Limited Communication Range:** Existing wireless technologies offered short communication distances, making centralized management difficult in large residential complexes, hotels, or multi-floor commercial buildings where gateways need to communicate reliably with dozens or hundreds of lock endpoints.
- **High Networking Costs:** Deploying a conventional wired or cellular-based network to support large lock installations requires significant investment in weak-current wiring, infrastructure hardware, and professional installation labor creating a barrier to adoption at scale.

SOLUTION

To address these challenges, Yueyueniao integrated Semtech's LLCC68 LoRa® transceiver into its smart lock and gateway products. The LLCC68 is a high-performance sub-GHz transceiver designed for long-range, ultra-low-power IoT applications, making it an ideal fit for access control deployments across large buildings and campuses.

The solution architecture introduced two key innovations:

Extended Transmission Power for Longer Range: By leveraging LoRa's adjustable transmission power and superior link budget, Yueyueniao extended the effective communication distance between gateways and door locks significantly beyond what competing wireless technologies could achieve. A single gateway can now reliably serve lock endpoints across multiple floors or large floor plans, reducing the total number of gateways required per deployment.

Gateway-to-Gateway Relay Architecture: Yueyueniao designed a relay capability between gateways, allowing them to forward signals across the network without requiring additional weak-current wiring or network infrastructure. This relay mesh approach dramatically reduces both hardware material costs and professional installation labor, narrowing the total cost of ownership gap with alternative networking methods and making LoRa-based systems more commercially attractive.

The result is a scalable, standards-aligned access control platform that can support home smart locks, apartment buildings, hotel properties, and commercial cabinet systems under a single unified wireless architecture.

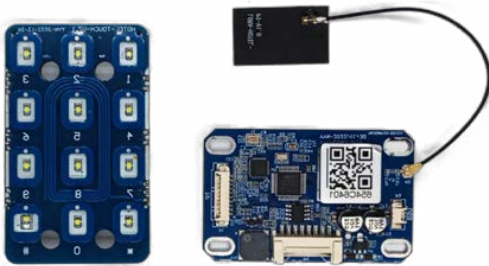
BENEFITS

- **Ultra-Low Power Consumption for Long Battery Life**

LoRa's Class A end-node communication model means door locks remain in deep sleep the vast majority of the time, waking only to transmit or receive brief data packets. This translates into dramatically extended battery life compared to always-on wireless technologies like Wi-Fi or Bluetooth, reducing maintenance burden and total operational cost for building managers overseeing large lock deployments.

- **Long-Range Connectivity Across Large Facilities**

The LLCC68's industry-leading link budget enables reliable wireless communication across multi-floor apartment complexes, hotel properties, and large commercial facilities—environments where Bluetooth and Zigbee typically fall short. Fewer gateways are required to cover the same area, simplifying network topology and lowering infrastructure investment.





- **Lower Infrastructure and Installation Costs**

Yueyueniao's gateway relay architecture eliminates the need for extensive weak-current cabling between network nodes. By allowing gateways to communicate directly with each other over LoRa, deployment teams can install systems faster, with less hardware and fewer skilled labor hours, making large-scale rollouts commercially viable.

- **Resilience Against Market Competition**

By adopting LoRa technology, Yueyueniao delivers a technically differentiated product that competing BT, Wi-Fi, Zigbee, and FSK solutions cannot easily match on range and power efficiency. This positions Yueyueniao to defend and grow its market share even as domestic competitors continue to advance on cost.

About Semtech

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