

# HOPERF Matter

Explore the boundless possibilities of interconnected Smart Home together!

## CONTACT US

- 📍 30F, 8A Building, Vanke Cloud City,  
Xili Street, Nanshan District, Shenzhen
- 📞 4001-189-180
- ✉️ Sales@hoperf.com
- 🌐 www.hoperf.com





# CONTENT

## ABOUT US

Shenzhen Hope Microelectronics Co., Ltd. (hereinafter referred to as "HOPERF") was established in 2004 and is a national high-tech enterprise focusing on independent innovation of core components for the Internet of Things (IoT) and product development. Over the past 20 years, Hoperun Micro has established a foundation centered around Sub-1GHz wireless communication RF chips and module products. It has expanded its scope to develop high-precision MEMS sensors and digital isolator products, forming a product layout that encompasses key aspects of information perception and interaction. Through years of accumulation, Hoperf has evolved into a comprehensive IoT wireless communication system service provider, integrating RF chip design, firmware and protocol design, application development, and testing.



**03** Why Matters

~~~~~

**05** Advantages of Matter

~~~~~

**07** Matter Device Types

~~~~~

**09** HOPERF Matter Solution

~~~~~

**11** Why choose HOPERF

~~~~~

**13** About HOPERF

~~~~~

# Why Matters



## Enterprises / Developers

Enterprises and developers prioritize ecosystem support when developing smart devices for diverse consumer needs. However, challenges arise from poor interoperability and technical differences among ecosystems, demanding more resources for cross-platform development and testing to ensure seamless product functionality.

### 01 Market Demands

With the smart home market growing, it's crucial for businesses to prioritize Matter technology to meet the demand for standardization, interoperability, and user-friendliness.

### 02 Reducing development costs and Accelerating Innovation

Implementing the Matter standard reduces enterprise investment in developing and testing device compatibility, enabling a stronger focus on innovation and feature development.

### 03 Building a Unified Ecosystem

A unified ecosystem ensures consistent user experiences, allowing users to enjoy similar interfaces and functionalities across products, enhancing their overall satisfaction.

## Consumer

Various smart home ecosystems—Amazon Alexa, Apple HomeKit, Google Assistant, —offer compatible products but lack complete interoperability. This leads to consumer difficulties in choice and compatibility, requiring additional bridging devices and impacting the overall user experience when using devices from different brands at home.

### 01 Interoperability Challenges Among Devices

When individuals use multiple smart home devices but find it challenging for them to communicate or be controlled collectively, it leads to a diminished user experience.

### 02 Compatibility Issues

Devices from different brands often achieve full compatibility and functionality only within specific ecosystems, resulting in difficulties in integration and collaboration.

### 03 Concerns Security and Privacy

With the increase in smart devices, data leaks, privacy infringements, and cybersecurity threats become top concerns. Consumers need to be attentive to information storage.



# Advantages of Matter

## What is Matter?

Matter is a new technical standard designed to facilitate interoperability among smart home devices. Built on IP connectivity, it establishes a unified communication language for various devices, enabling them to communicate and collaborate more seamlessly.

Matter technology achieves cross-brand and cross-platform interoperability, allowing consumers the freedom to choose smart devices from different brands while ensuring they can connect and work together seamlessly.

**As of September 2023, 400+ companies, including Apple, Amazon, Google, Samsung, are involved in Matter standard development and implementation.**

The era of unified standards for IoT application layer protocols has arrived!

- Matter



Matter is a unified communication language for smart homes, residences, and commercial buildings, simplifying connectivity and interaction among various smart devices. This new standard lays a solid foundation for the future of smart home technology, representing the next generation in the field.



### Cross-platform compatibility

Matter prioritizes cross-platform Compatibility, enabling seamless connectivity and interaction among diverse device brands and types. It focuses on breaking down platform barriers for increased collaboration.



### Security and privacy protection

Matter prioritizes the security and privacy of smart home devices, implementing advanced security protocols such as encrypted communication and authentication measures to ensure user data safety and privacy protection.



### Open and unified standards

Matter's open standard solves compatibility issues among diverse smart devices, allowing easy integration of devices from different brands into a unified smart home ecosystem.



### Broad development potential

Matter, backed by a powerful alliance that includes tech giants such as Apple, Amazon, Google, Samsung, enjoys widespread industry recognition and support, fostering its future development and promotion.

# Matter Device Types



## What is CSA?

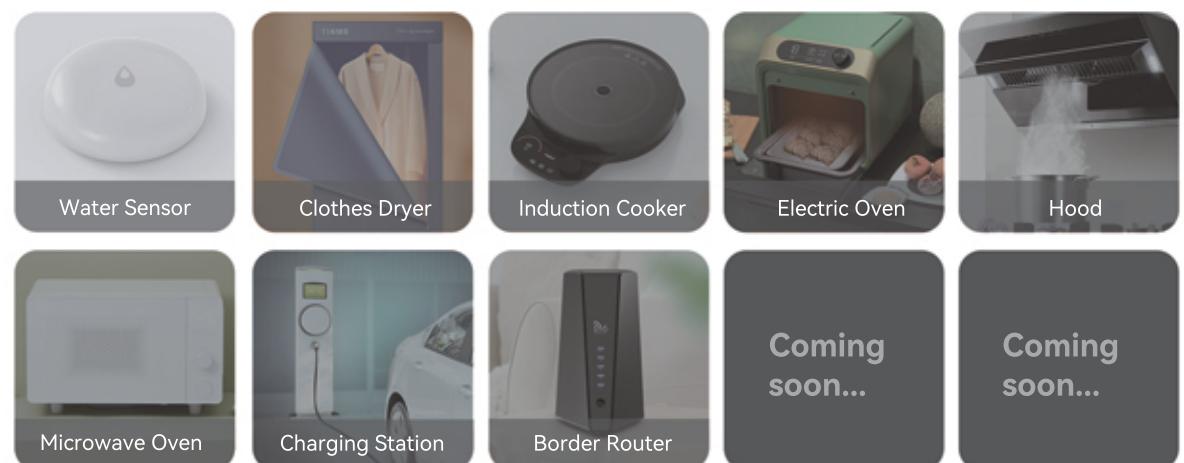
CSA is the abbreviation for the Connectivity Standards Alliance. Established in 2002, CSA collaborates extensively with global members to create and evolve universal open standards for products that transform the way we live, work, and entertain. Leveraging the deep and diverse expertise of CSA members, reliable certification processes, and comprehensive open IoT solutions, CSA is leading the world towards a more intuitive, imaginative, and practical future.

## Already supported Matter device



# Updated from Matter 1.2 released by the CSA Connection Standards Alliance

## Coming soon Matter device



## Origin of Matter

Matter, a new application layer protocol, is introduced by the Connectivity Standards Alliance (formerly Zigbee Alliance). It is an IPv6-based connectivity standard, and its trademark is owned by CSA Alliance.

Originally part of the Connected Home over IP (CHIP) project, Matter was officially renamed on May 12, 2021, coinciding with the rebranding of Zigbee Alliance to CSA Alliance.

## HOPERF and Matter

HOPERF is one of the early participant in the Matter Technology Working Group, actively promotes Matter standard development and collaborates with global leaders to drive IoT technology and market growth.

HOPERF provides a full range of Matter solutions, offering one-stop software and hardware solutions tailored to meet the diverse needs of customers in different scales and scenarios.

# HOPERF Matter Solution

Main Datasheet	Matter Module HM-MT2401	Matter Module HM-MT2401B	Matter Module HM-MT2401C	Demo Board HM-MT2401
Size	22x15.8x2.6 mm	22x15.8x2.6 mm	12.7x10x2.6 mm	79x48x15 mm
Tx Power	19.5 dBm	10 dBm	10 dBm	19.5 dBm
RAM	256 KB	256 KB	256 KB	256 KB
Flash	1.5 MB	1.5 MB	1.5 MB	1.5 MB

HOPERF self-developed Matter module is a product of both technological innovation and extensive software development experience. Leveraging two decades of expertise in IoT chip design, the module delivers personalized and scenario-specific solutions for more practical and diverse smart home device requirements.

Ultra Low Power	●	✓	✓	●
Extra Small	●	●	✓	●
High Tx Power	✓	●	●	✓
Matter over Thread	✓	✓	✓	✓
Rapid Development	✓	✓	✓	✓
Built-in PCB Antenna	✓	✓	✓	✓
Size Customization	✓	✓	✓	●
Peripheral GPIO	✓	✓	✓	✓
OTA in internal Flash	✓	✓	✓	✓

# For more Matter solutions, please consult the business manager.



## HOPERF Matter service model

- ✓ CSA Alliance membership guidance
  - Explain the CSA Alliance membership process
  - Full-process assistance to quickly join the CSA alliance
- ✓ Matter Certification Test
  - Firmware passes TestHarness pre-certification testing
  - Supports Matter Certification Transfer Program (CTP)
- ✓ DAC certificate issuance
  - Provide DAC certificate issuance and burning services
- ✓ Matter hardware module design
  - Provide hardware modules to meet various needs
  - Passed various wireless standard certifications
  - High performance, low power consumption, excellent RF performance
- ✓ Matter software development
  - Provide custom software development services
  - Develop Matter-related software on behalf of others
  - Provide technical support services
- ✓ Module mass production process guidance
  - Mature and reliable mass production capabilities
  - Provide stable production testing tools
  - Training module firmware burning tutorial

# Why choose HOPERF



## Formidable R&D capabilities

HOPERF boasts a Matter R&D team composed of top experts in the industry, equipped with extensive experience and expertise in Matter software development and innovative technologies.



## Diverse collaboration models

HOPERF offers a tailored one-stop solution, including hardware modules, Matter software development, DAC certificates, and certification testing, to meet diverse customer needs.



## Agile production capabilities

HOPERF has an agile module mass production process, responding promptly to customer needs with efficient solutions. Comprehensive technical support is provided to ensure the smooth deployment of Matter products.



**Collaborative Development for a Win-Win Future**

As of March 2023, HOPERF has successfully provided efficient and high-quality chip products and services to over 3,000 customers in more than 50 countries, earning widespread recognition.



# HOPERF

## Our Mission:

Significantly shortening the development cycle,  
Enabling customers to achieve more with less effort,  
Easily seizing market opportunities!

HOPERF is a research-oriented high-tech enterprise in the semiconductor wireless communication field. Throughout its extensive research and development efforts, HOPERF has established a highly experienced, efficiently innovative team of technical talents, providing essential support for continually enhancing HOPERF's independent innovation capabilities and advancing technological expertise.

As of June 2023, HOPERF has accumulated numerous professional certifications, including 14 invention patents, 14 utility model patents, 5 design patents, and 103 software copyrights. This comprehensive set of patents, along with non-patent technologies, reflects HOPERF's rich research achievements.



# About HOPERF



**HOPERF is a leading domestic system-level manufacturer of core components for the Internet of Things (IoT).**

With a 20-year focus on wireless RF and sensor research, HOPERF has evolved into a national-level high-tech enterprise. The company boasts independent capabilities in RF chip design and solution development, covering eight core technology systems. These include system-level chip architecture, high-integration analog-mixed design, digital modulation, wideband PLL design, high-performance analog devices, integrated module development, high-precision sensors, and patented LPWAN technology. HOPERF's main products exhibit leading performance and stable quality on both domestic and international fronts.

## Technology leads industry innovation

- Possessing proprietary knowledge in mixed-signal radio frequency (RF) chip technology.
- Having end-to-end capability in the design of Internet of Things (IoT) communication systems.

## 20 years of experience in IoT application

- Accumulated a vast number of IoT chip application development cases.
- Solution based on scenario applications, meeting personalized requirements.

## Main application areas



### Environmental monitoring

- Atmospheric Environment
- Marine Ecology
- Soil Environment
- Meteorological monitoring



### Building security

- Smoke monitoring
- Smart door sensor
- Electric fence
- Anti-theft alarm



### Smart instrument

- Smart meter
- Smart gas meter
- Smart water meter
- Smart heat meter



### Industrial IOT

- Oil mining
- New energy
- Logistics label
- Construction machinery



### Vehicle electronics

- Tire pressure monitoring
- Encryption key
- Car anti-theft
- Reversing radar



### Smart home

- Smart curtains
- Smart Appliances
- Intelligent light
- Control



### Smart medical

- NMR
- Medical call
- Medication delivery
- Electronic capsule



### Special application

- Satellite Communications
- Ship positioning
- Scientific research
- Drone



- State-level high-tech enterprises
- State-level small giant enterprise
- Excellent market performance
- Xinhuo cutting-edge products
- Digital Innovation Award

## Customer first, Quality first



Customer requirements are clearly communicated, understood, and rigorously executed, making every effort to ensure consistency in quality.



By implementing PDCA, delivering on time, and incorporating internal and external feedback, we continuously improve quality and reliability.