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# NB-IoT Ecosystem Partner List



Issue 2.0



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#### HUAWEI TECHNOLOGIES CO., LTD.

Huawei Industrial Base  
Bantian Longgang  
Shenzhen 518129, P.R. China  
Tel: +86-755-28780808  
Version No.: M3-023988-20140609-C-1.0
















[www.huawei.com](http://www.huawei.com)



# Partner List

Use Case	Partner	Country
Smart Water	Huizhong 	China
	Kamstrup 	Denmark
	NWM 	China
	Prajna IoT Tech 	China
	Sanchuan 	China
	VEOLIA 	France
	Xingyuan 	China
Gas Meter	GoldCard 	China
	Pietro Fiorentini 	Italy
	ViewShine 	China
Smart Grid	Holley 	China
	Janz 	Portugal
	Tatung 	Taiwan, China
	Waison 	China
Smart Parking	Fangle 	China
	Infocomm 	UAE
	InnoTek 	China
	Q-Free 	Norway
	Smart Parking Systems 	Italy
Smart Industry	BOSCH 	Germany
Smart Street Lighting	AOD 	China
	DAYUN 	China
	INSIGMA YISHENG 	China
	Philips Lighting 	Netherlands
Asset Tracking	Accent Systems 	Spain
	Ascent 	Singapore
Pet Tracking	hereO 	United Kingdom
	Oviphone 	China
Smart Agriculture	EDYN 	USA
	MuRata 	Japan
	Pessl 	Austria

# Partner List

Use Case	Partner		Country
White Goods	Midea		China
Smart Health Care	Life Sense		China
Smart Monitoring	IRexnet		South Korea
Vending Machine	lierda		China
Electronic Manufacturing Service	lierda		China
	Hanwei		China
	Hongdian		China
Alarm Sensor	GTI		China
	HOTHINK		China
Smart Bicycle	ofo		China
Electronic Payment	PAX		China
Chipset	STMicroelectronics		Switzerland
NB-IoT Module	Quectel		China
	u-blox		Switzerland
NB-IoT Tool	lierda		China



# kamstrup

## Company Profile:

Kamstrup is a world-leading supplier of intelligent water and energy metering solutions. For more than 70 years, we have been anticipating our customers' challenges to enable them to run a better business and inspire smarter solutions for the communities they served.

## Market Footprint:

Development, automated production facilities and administration are situated in Denmark, and local sales offices in 24 countries and distributors in 40+ countries enable a close cooperation with our customers and partners across the world.

## Products and Solutions:

Successful NB-IoT trial projects in Chile and Denmark with MULTICAL® 21 intelligent water meter

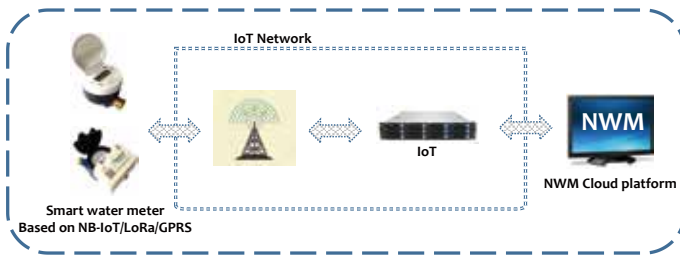
- Ultrasonic measurement technique for precise readings
- Intelligent alarms on leak, burst, dry meter, reverse flow and tamper for in-depth overview of network
- NB-IoT bridge for wireless connection to the water meter (can be integrated in the water meter in the long run)
- Configurable data update frequency for flexible test environments
- NB-IoT meter data available in Kamstrup Meter Data Management system



For more info, contact Head of Product Management, Steen Schelle Jensen: [ssj@kamstrup.com](mailto:ssj@kamstrup.com)

## Company Profile:

- Ningbo Water Meter Co.,Ltd is dedicated to the water sectors, helping utilities operator more efficiently, conserve valuable resources & generate innovative revenue opportunities.
- The products were developed with the vision of "Effective measurement of water "by providing value added consumable meters and services in global water resource protection.

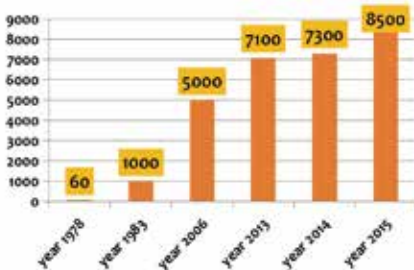


## Products and Solutions:

- Deputy-Director Membership of China Metrology Association (CMA) Water Meter Committee;
- Secretary-General Membership of CMA Water Meter Committee;
- Leadership Unit of CMA Water Meter Committee Smart Meter Technology Group;
- Vice Chairman Unit of China Instrument Manufacturer Association(CIMA);
- Leadership Unit of WTO/TBT water meter expert group.

*The biggest production capacity in china water meter industry, with annual production of 8.5 million units*

*Export market: Around 2,000,000 units of the water meters exported to more than 70 countries.*



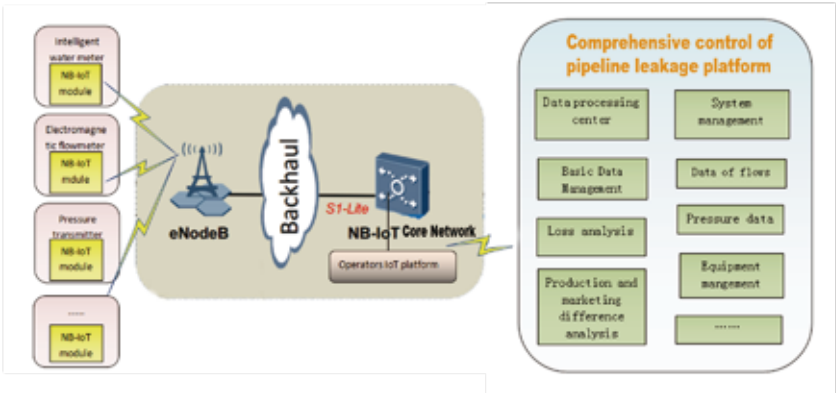
Website: <http://chinawatermeter.com>

## Company Profile:









The main business of PRAJNA IOT TECH CO., LTD is service for information systems integration, and we also develop and sell civil intelligent measurement instrument and system. The R&D and technical services of the IoT application system and wisdom cloud platform. With sensor technology, we will gradually develop more sensors and related solutions based on the technology of NB-IoT, development technology of software platform and accumulation of technology, to promote the application and development of NB-IoT.

## Products and Solutions:

### Smart Water Meter Solution:



### Smart Water Meter:

-  Adopt NB-IoT technology
-  Battery life > 6 years
-  Waterproof level: IP68
-  Measurement features: R200(D)
-  Alarm when the battery is under voltage  
Alarm when there is strong magnetic interference
-  It adopts the food grade housing and food grade table core materials
-  Water use subscription function
-  LCD 9 digits display, with the functions of cumulative flow, unit, communication signal strength, battery, transmission status display



[www.prajna-iot.com](http://www.prajna-iot.com)

Contact: [Support@prajna-iot.com](mailto:Support@prajna-iot.com)

## Company Profile:

Sanchuan is the first listed company that gives priority business to water meter. With an annual production of 10 millions units of water meters, Sanchuan is the Top 3 water meter manufacturer. In addition, Sanchuan can provide you the professional smart water solution from water meter to water platform.

## Market Footprint:

Australia, China, Spain, Italy, Iran, Brazil, Angola, Uganda, Zambia, Thailand...

## Products and Solutions:

### Smart Water Meter Solution:

- Pipe network real time meter monitoring;
- Smart meter reading and transmission;
- Water operation maintenance management;
- DMA metering management .

### Smart Water Meter:

- NB-IoT module embedded
- Ultrasonic technology for volume measurement
- Remote parameter configuration,
- Typical 30 minutes interval for data sampling
- Water temperature/pressure volume measurement for LCD display and report
- 19mH Battery capacity, 15 years battery life



Contact: [webmaster@ytsanchuan.com](mailto:webmaster@ytsanchuan.com)

## Company Profile:

Veolia (€25 billion revenue) designs and deploys solutions for water, waste and energy management, participating in the sustainable development of cities and industries.

## Products and Solutions:



### WATER

Sensors for water meter networks

End to End solution, from sensors to intelligent Water System



Smart meter Head end



Water quality sensor

#### Waternamics Solution

Yield Management  
 Predictive Maintenance  
 Leak Detection  
 Smart Metering  
 Real Time Quality Control



### WASTE

Filling Level sensors for Bins and containers

End to End solution, from sensors to smart waste collection

- > Reduces mileage on average by 20%
- > Reduces collection time by 35%
- > Reduces bin lifting by 40%



Filling Level sensor



### ENERGY

Sensors for Electric meter And pulse output

End to End solution, from sensors to energy efficiency services

Smart Electric meter

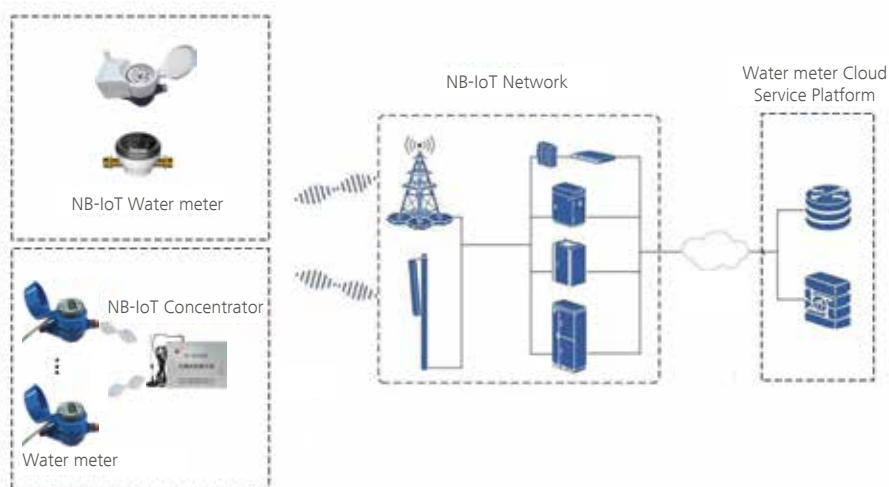


Contact (Commercial and Technical): [mikael.balpe@Veolia.com](mailto:mikael.balpe@Veolia.com)



## Company Profile:

Xingyuan Instrument focuses on water sector intelligent water meter and solutions for product development, production and sales. Xingyuan was the pioneer of IoT meter products within the water industry, and focus on research and promotion of NB-IoT technology in the application of water products.



## Products and Solutions:

Technical parameters

Working voltage: DC 3.6

Battery life(year): 8~10

Protection level: IP68

Supported network: GPRS / NB-IOT / WIFI /Bluetooth



- 2014 complete water meter based on GPRS technology, product research and development and the application of pilot , and in 2015 began to promote.
- 2016 complete IoT water meter based on the technology of NB - IoT products research and development and the application of pilot .
- 2017 will begin to push NB - IoT as an alternative to GPRS for water meter, and promotion of NB - IoT technology application in the water industry.

## Company Profile:

As the largest smart gas total solution provider in China, Goldard High-tech Co., Ltd, was founded in 1997. It is the first listed company in the smart gas meter industry in China with stock code 300349. In addition to the booming business in the China market, Goldcard also start co-operation with many leading companies in the UK, Germany, Colombia, Indonesia, etc.

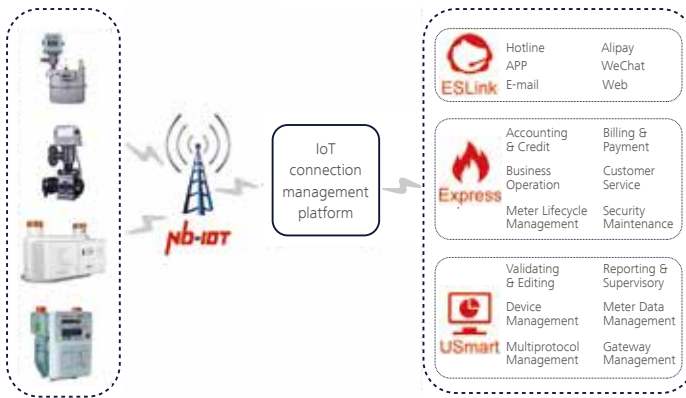
## Products and Solutions:

### NB-IoT Smart Gas Meter

By linking to the NB-IoT Wireless network, the gas meter realizes the functions of data transmission to cloud platform, remote valve control, gas consumption monitoring, ladder price regulation, data analysis, error alarm and so on. Combined with mobile phone APP, it can also achieve remote recharge and real-time interaction.



As shown in the figure:



In 2016, the NB-IoT gas meter was started to be installed as pilot testing project in the markets which are covered by NB-IoT network. After pilot testing in 2017, the original smart gas meter based on GPRS will be switched to NB-IoT gradually.

### Technical parameters

Measuring Accuracy	1.5
Working Pressure (Kpa)	≤ 50
Pressure Absorption (Pa)	≤ 200
Working Temperature(°C)	-25 ~55
Working Voltage (V)	DC 3.6
Battery Life (year)	≥ 10
Protection Level	IP65

## Company Profile:

Pietro Fiorentini is the leader group in creating technologically advanced products and services for natural gas distribution and use, targeting our research on the coverage of all needs.

## Products and Solutions:

- Smart gas meter with two-way communication & 128 bit data cryptography.
- SAC based on Terranova SW platform
- Mainly smart gas metering and pipeline monitoring. Other applications on pressure & temperature data loggers

## Planned NB-IoT trials :

- Italy
- Spain
- Portugal
- China



## NB IoT & Smart Gas Metering

*Two-way communication*

### Sending

Meter reading daily  
Time of use tariff  
Tampering attempts  
Valve position  
Meter diagnostic



### Receiving

Valve closing command  
Valve opening enabling  
Firmware upgrade  
Meter point record number  
Time of use configuration

### Mandatory requirements:



MD: Measuring Instruments  
Directive



128 bit cryptography

3

<http://www.fiorentini.com/ww/en/>

## Products and Solutions:

- Wireless Pre-payment
- Wireless Bidirectional data communication
- Remote automatic meter reading
- Remote valve control system
- Remote price adjustments / Automatic fault reporting



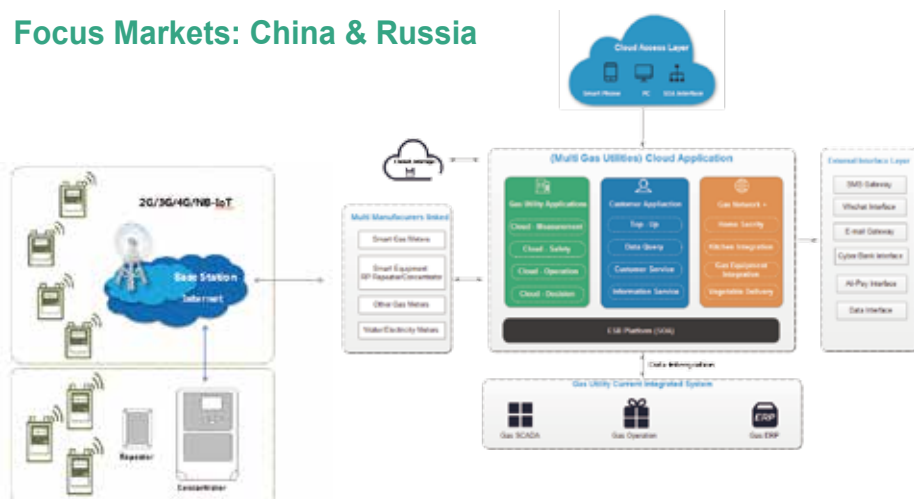
Smart Gas Meter  
 +  
 NB-IoT  
 =  
 Convenience  
 Efficiency  
 Intelligence

## Connect Smart Gas Meter and Gas Utility via NB-IoT technology

- Management efficiency improved
- Bidirectional data communication, real-time data transmission
- Improve the coverage of the existing broadband Internet of things
- Extend the lifetime of batteries which are used in IoT
- Cut down the cost of IoT connection by providing better Gas Meter equipments

## Market Footprint:

### Focus Markets: China & Russia



## Company Profile:

Holley Technology Ltd is a cross-regional and export-oriented company focusing on R&D, manufacture and marketing of energy meters. With 38 years experience in metering field, Holley is currently the biggest meter manufacturer in China with annual production capacity of 25 million pieces. The company provides a wide range of products from mechanical/electronic meters to integrated terminal system with reputable production capability and product quality.

## Products and Solutions:

### Product Functions:

- support NB-IoT communication
- support electricity, water, gas energy measurement
- support remote connection and disconnection



Company: Holley Technology Ltd

Country: China

Product: Smart electricity meter, smart water meter, smart gas meter

E-mail: hong.zhu@holley.cn

## Company Profile:

Janz CE company focuses on R&D, manufacture and marketing of energy meters. Janz CE portfolio includes Metering, Communications and IT Systems that aim to deliver and anticipate Utility's needs on Smart-Grid and Smart-City in several industries.

## Market Footprint:

In Electrical Energy, Janz offers solutions that cover Africa, Asia and Latin America needs from electricity production to end- consumer, through Public Light, Distributed Generation, Electrical Vehicles and other applications.

## Products and Solutions:



- Janz NB-IoT Smart Meter, the first electrical energy smart meter, using 4.5G NB-IoT communication technology, a pioneering project at a worldwide level, has been successfully tested and ready for Utility AMR integration.
- Janz NB-IoT Smart Meter with full functionalities of advanced smart meter with instantaneous Outage Alarm (Last gasp).



Company: Janz CE

Country: Portugal

Product: Utilities AMI Solution Provider and Meter manufacturer

Contact: [altino.alvares@janzce.pt](mailto:altino.alvares@janzce.pt)

## Company Profile:

Established in 1918 and headquartered in Taipei, Tatung Company has evolved into a conglomerate from its substantial heritage. From its inception, Tatung has abided by its founding values of "Integrity, Honesty, Industry, and Frugality". The Company is listed on the Taiwan Stock Exchange (TSE) under the trading code of 2371.

## Market Footprint:

Tatung Smart Grid provides services to a wide range of customers, from utilities, factories to residential areas. With more than 50 years of expertise in the electricity meters manufacturing, we currently act as the only AMI System supplier to Taiwan Power Company as well as the only foreign Smart Meter provider in the Japanese market.



Company: Tatung Co.  
 Country: Taiwan, China  
 E-mail: [clos.xin@tatung.com](mailto:clos.xin@tatung.com)  
 Website: [www.tatung.com](http://www.tatung.com)

Products and Solutions:  
 Solution: AMI System  
 Meter Product: ANSI meters, IEC meters  
 Smart Buildings

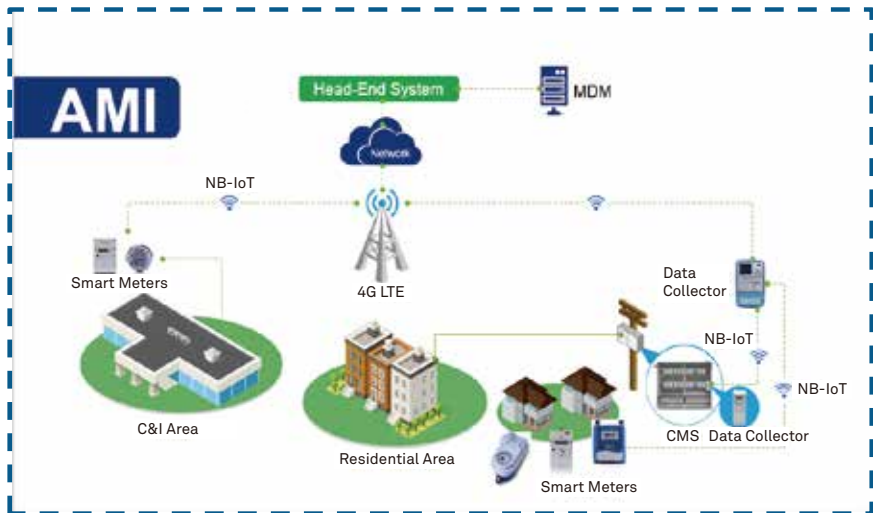
## Company Profile:

Wasion Group is the leading supplier of advanced energy metering products and solution, which was listed in Hong Kong Stock & Exchange Market in 2005. The revenue of Wasion Group is increasing significantly with the sales being No. 1 in the Chinese domestic market. International sales offices and distributors/partners in Europe, South East Asia, South America, and North Africa have been set up to better serve customers around the world.



## Products and Solutions:

Wasion NB-IoT smart metering system is a flexible and open energy management platform which supports a variety of communication devices, on-demand readings, collection and analysis of meter data. The NB-IoT network provides the two-way and reliable communication.



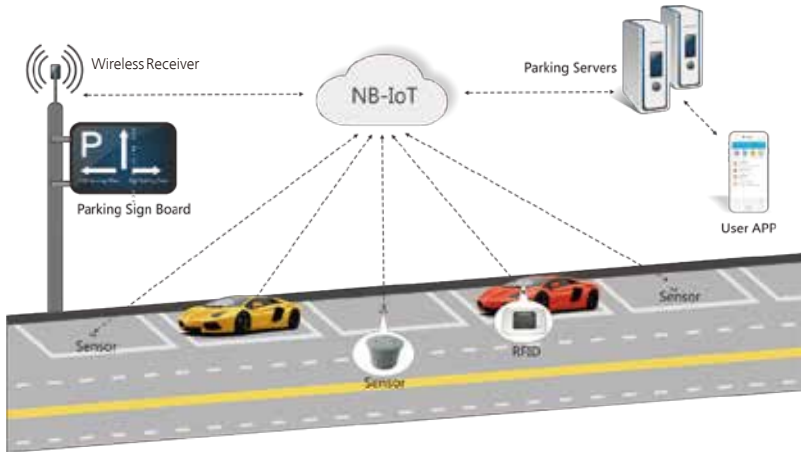
We provide the products for AMI solution  
Two Level or Three level network  
Smart Energy Meter, Water Meter and Gas Meter  
Data Concentrator Unit  
In-Home Display  
HES and MDM  
Smart Metering System Integration & Service



## Company Profile:

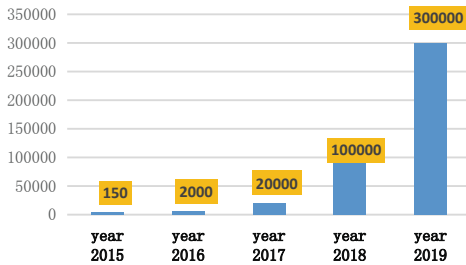
- The earliest End-to-End smart curbside parking solution;
- The leading smart parking solution and equipment vendor;
- China top ten parking system solution vendor;
- The first NB-IoT parking solution company.

## Products and Solutions:



- Parking information collection;
- Parking reversing finding car;
- Parking guidance;
- Parking Tolling;

### NB-IoT smart parking strategy (Parking Bays Quantity):



### Market Distribution:

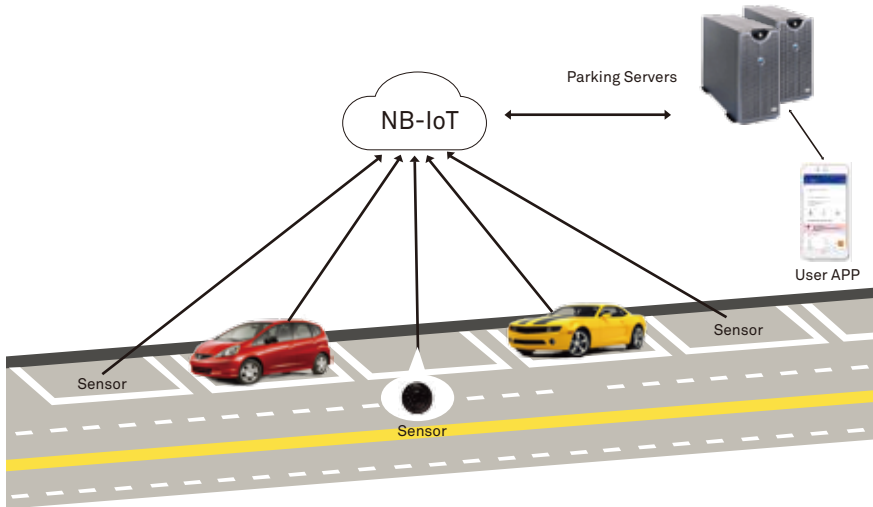


Add:9/F,Block B,Clou Building,Baoshen Road,North Nanshan Hi-tech Park,Nanshan District 518057,Shenzhen,China  
E-mail: anthony@szfangle.com

## Company Profile:

- Leading Smart Parking Payment Solution Provider in Middle East & Africa (MEA) Region
- Providing Smart Parking Payment Solutions to The Largest Government / Municipality Parking Operators In The GCC Region.
- The First NB-IoT Parking Solution Provider in Middle East & Africa region
- Offering Full Turnkey Smart Parking Solutions

## Products and Solutions:



### Smart Parking Payment System (Revenue Collection)

- Payment of Parking Fees Via Mobile Phone Credit / Infocomm Mobile Wallet
- mWallet Top Up Via Credit Card, Apple Pay or Google Wallet

### Smart Enforcement System

- Querying Valid Virtual Parking Permits and Issuing Violation Fines Where Applicable
- Captures Photographic Evidence of Each Parking Violation
- Printing of Violation Fines Via Mobile Printer
- Vehicle Tracking History Supporting Lawful Intercept
- Real-Time Enforcement Officer Tracking

### Smart Parking Guidance System using Huawei NB-IoT

- Real-Time Parking Information Data Analytics
- Displaying Unoccupied Parking Bays, Parking Fees and Providing Route Guidance to Motorists via Mobile App
- Supports Pay By Space and Optional Advance Booking of Parking Bays
- Parking Space Usage Optimization
- Real-Time Monitoring and Managing of Available Parking Bays

## Company Profile:

Zhejiang InnoTek Co., Ltd. is a high-tech innovation and business development enterprise whose founders have studied abroad and returned from the Silicon Valley of the United States, and the Company is a key project introduced by the Organization Department of Zhejiang Provincial Party Committee and the Future Sci-Tech Park. InnoTek has attracted attention from leaders of the Provincial and Municipal Governments, even the State leaders. In addition, Doctor Myron Scholes, a Nobel Economics Prize winner, has offered the angel investment to InnoTek.

## Market Footprint:

InnoTek has carried out business in more than 50 cities in China. In addition, the excellent development architecture of “overall layout and forging the model” has been firstly built. Up to end of June 2016, Innotek has developed business in important cities such as Beijing, Shenzhen, Shanghai, Tianjin, Chongqing, Guangzhou, Wuhan, Chengdu, Hangzhou and so on, owned more than 60% of the share of road parking market in China and taken a absolutely leading position

## Products and Solutions:

Smart parking

- Faster approval
- Convenient installation and wide coverage
- Easier maintenance and lower power consumption



<http://www.innotek-co.com/en/>



LEADING THE WAY

## Company Profile:

Q-Free is a leading global supplier of products and solutions within the global Intelligent Transportation Systems (ITS) market.

The company provides class-leading Tolling, Parking, Traffic Management and Connected ITS (C-ITS)/Connected Vehicle solutions. It has a presence in all major ITS technology areas. These solutions, together with a broad, and in many cases unique, range of sensors for infrastructure, vulnerable road user and environmental monitoring, enable Q-Free to supply ITS which address all road infrastructure financing, operating and condition-monitoring needs.

In addition, managed service solutions are provided which allow customers great flexibility in capital and operating costs.

## Market Footprint:

The company has delivered systems which are now operational in Europe, the Asia-Pacific region, and North and South America. Q-Free has approximately 430 employees, is headquartered in Trondheim, Norway, and has local offices around the world.

## Products and Solutions:

- Mobile parking APP
- Parking sensor
- Visual control center Parking guidance system software



<https://www.q-free.com/>





# BOSCH

## Company Profile:

The Bosch Group is a leading global supplier of technology and services. It employs roughly 375,000 associates worldwide (as of December 31, 2015). The company generated sales of 70.6 billion euros in 2015. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology.

## Products and Solutions:












XDK – Programmable Sensor Node & Development Kit



## General Description

XDK is a hardware & software programmable platform for the realization of Internet of Things (IoT) use cases & proof of concept projects

### Sensors & Functions

-  Acceleration Sensor
-  Gyroscope Sensor
-  Geomagnetic Sensor
-  Humidity Sensor
-  Pressure Sensor
-  Temperature Sensor
-  Acoustic Sensor
-  Digital light Sensor
-  32-Bit Microcontroller
-  Bluetooth low energy & WiFi
-  NB-IoT (with extended board)

### Other key facts

- 32-Bit microcontroller (ARM Cortex M3), 1MB Flash, 128 kB RAM
- Internal Li-Ion rechargeable battery 560 mAh
- 3 programmable status LEDs & 2 programmable push buttons
- Micro SD Card slot
- Interface for J-Link Debug-probe

### Focus Segments

- Industrial 4.0 & Logistics
- Smart Transportation & Smart City
- Smart Building & Smart Agriculture

Contacts: Raymond.zhao@cn.bosch.com

## Company Profile

AOD Co., Ltd. is a company professionally engaged in LED lighting product R&D, manufacture and sale. We have unique advantages on LED epitaxy, chip, package and light system application. AOD is the inventor of the first LED street light in the world and the builder of the first LED road in the world and the founder of the first LED city in the world. We are one of the biggest LED street light suppliers.



## Market Footprint:

The headquarter of AOD is located in Weifang in China, and AOD has distributors world-wide including the USA, Japan, Germany, Southeast Asia, North America and the Middle East.

## Products and Solutions:



- R&D, manufacture and sale of LED light source, lamp and intelligent control equipment, broadband wireless communication equipment.
- Lighting project simulation, construction and supporting consult and service.
- EMC

<http://www.aodgroup.net/en/>

## Company Profile:

DAYUN is a company that designed three-dimensional perception system, urban management system development and operation. Our advantage lies on holographic sensing data collection and analysis, to achieve Internet of things information Fusion. We make full use of artificial intelligence to achieve large data mining and data association applications. From the perception of access to the construction of the smart street light as the breakthrough point, we can take full responsibility of urban infrastructure management and comprehensive utilization of the three-dimensional sensing terminal access. We have independent software and hardware development, toward to the IoT industry benchmark!

## Market Footprint:

China, India, Korea, Macao...

## Products and Solutions:



- 2G/NB-IoT communication
- RS485 communication interface, as an expansion of communication interface, can be connected to a variety of things sensor network equipment
- With RFID reader interface
- DC 12V power output
- Can access the leakage monitoring module, environmental monitoring module, trash monitoring, water level monitoring module and other terminal equipment data



## Company Profile:

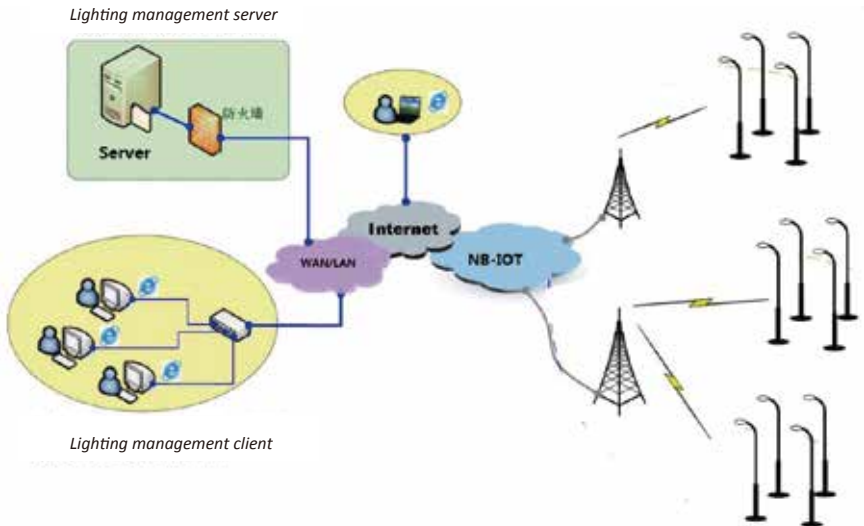
INSIGMA YISHENG focuses on smart city based on IoT products and solutions. With the core idea of adhering to the "Depth Perception" and "Continuous Innovation", we concentrate our research on the smart city and build advanced business system, provide customized smart city overall solutions for customers, and provide integrated service.

## Market Footprint:

Australia, China, Chile, Mexico, Costa Rica, Abu Dzaja...

## Products and Solutions:

- Complete smart lighting solutions
- Project operation mode of EMC or PPP
- Smart city solutions based on NB-IoT



Company : INSIGMA YISHENG

Country : China

Product : Leader in the Development of Smart lighting

Contact : support@bettershine.com

## Company Profile:

### Philips Lighting

innovation + you

**Largest**

Lighting company in the world

Presence in

**60**

countries

**#1**

in connected lighting

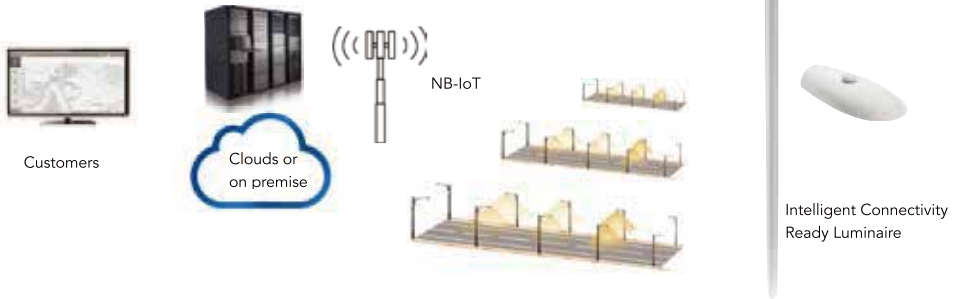
**#1**

in LED lighting

## Products and Solutions:

### Street lighting management and remote control system

- Intelligent, dynamic control with advance lighting management software
- Real-time insight into lighting assets
- Energy saving with sustainability and safety
- Flexibility and compatibility with any clouds or communication solutions



## Market Footprint:

### Business partner with Huawei for NB-IoT solution in lighting

- MWC Shanghai live demo in June 2016 for Philips street lighting management system, in cooperation with Huawei and CMCC
- Plan to build pilot in China ,Middle East, Europe and North America from 2017



## Company Profile:

We are focused on connecting the world with IoT solutions and other rising technologies, like the NB-IoT. Our main business is the wireless device market.

We turn customers' ideas into tailored electronic solutions, from product development to mass production, using the latest technologies in the market.

## Products and Solutions:

We are 100% transversal. We are not focused just on one sector, but we dominate the technology that can be applied to develop every product, in every vertical.



### NB-IoT Use Cases

We are integrating the NB-IoT concept in all our asset tracking applications. For example:

- In intelligent suitcases (a project with Samsonite),
- In the industrial sector (a project to make pallets smart with the company Ribawood),
- To find pets and belongings...

We're exploring the multiple possibilities of this promising technology.



CONTACT US

Jordi Casamada, CEO

[jcasamada@accent-systems.com](mailto:jcasamada@accent-systems.com)

## Company Profile:

Ascent Solutions is a global company headquartered in Singapore specialising in IOT solutions for cargo security and asset tracking & monitoring, bringing smartness into logistics. Ascent’s team has strong domain knowledge in BLE, NB-IoT, SATCOM, GPRS, GPS and both Active and Passive RFID technologies. Today, Ascent serves Revenue Authorities of the world such as Kenya, Tanzania, Thailand and Indonesia Customs by monitoring cargo security along bonded corridors. In East Africa alone, there are more than 10,000 Cargo Security iSPOT® devices deployed daily. Besides the public sector, Ascent also offers secure cargo tracking, chain of custody control, non-motorised asset and personnel tracking as well as consignment stock tracking to private companies

## Market Footprint:

Australia, China, Indonesia, Kenya, Mexico, Panama, Philippines, South Africa, Tanzania, Thailand, Turkey

## Products and Solutions:

Electronic cargo tracking solution for customs authorities and cargo owners: detects lock tamper and provides real-time alerts

Urban logistics solutions: provide chain of custody security and visibility, enabling higher truck utilization, minimizes congestion therefore lowering overall costs in urban logistics ecosystem



Interactive map showing live cargo movement and electronic chain of custody records detailing events such as arm, disarm, tamper & transfer of cargo secured by smart lock



Smart Lock iScout



Smart Lock U\*Lock

- Excellent global security tracking device; approved for customs bonded cargo tracking
- All-in-1 container and conveyance electronic lock
- Contains NB-IoT/ RF modules
- Can be integrated with SATCOM module
- Battery life: ultra long battery life/ rechargeable
- Excellent tracking device for urban logistics and chain of custody logistics
- All-in-1 container and conveyance electronic lock
- Contains BLE/ NB-IoT modules
- Battery life: 3 years, ultra low power device
- Capable of near and far field detections

<http://www.myascents.com/>

## Company Profile:

hereO is the creator of the world's first end to end connected family ecosystem driven by an app to app location based service and complemented with a range of state of the art location sharing devices. With an app for smartphone users, GPS Watch for Kids, and soon to be launched Pet Tracker, Tracker of Things, and GPS Watch for Seniors, the hereO ecosystem covers the family's every needs with a comprehensive, holistic, and personalized approach.



## Products and Solutions:



The hereO GPS watch is the world's smallest real-time cellular-connected GPS tracking device. Designed, developed, and geared to kids age 3 and up, parents can now enjoy true peace of mind with regard to their children's safety. With real-time pin-point tracking, breadcrumb trail logging, and smart location alerts, parents can track their children's whereabouts directly from the hereO Family smartphone companion app.

<https://www.hereofamily.com/>

## Company Profile:

Oviphone is a member of GTI and CMCC 5G Innovation Center. Oviphone has been focusing on wearable device and tracker for more than 5 years, provides the design service and manufacture for wearable devices (smart watch/band) and tracker.

## Market Footprint:

Oviphone is leading the NB-IoT application in the wearable and tracker sectors; as demonstrated by the realisation of the world first NB-IoT tracker, and further innovated with the NB-IoT watch with more features.

## Products and Solutions:



### Products include:

- Bluetooth watch/ band
- Heath detection watch
- Kids Smart watch
- Older Smart watch
- NFC payment watch/band
- GPS tracker



NB-IoT Tracker: for Pets, Bag and Suitcase  
GPS, Wifi, iBeacon location, Sensors for status check.

NB-IoT Watch/Band for Older and Kids  
M4 MCU for big display and touch panel  
Codec support "push to talk" voice  
PPG+EKG, Blood pressure, Pulse Rate detection  
Motion sensor

Contact: Jackyu@oviphone.cn

## Company Profile:

Murata is a global leader in the design, manufacture and supply of advanced electronic materials, leading edge electronic components, and multi-functional, high-density modules. Murata innovations can be found in a wide range of applications from mobile phones to home appliances, and automotive applications to energy management systems and health-care devices.

## Products and Solutions:



Opening/closing  
Sensor node

Under development



luminous  
Sensor node

Under development



Motion  
Sensor node

Under development



Temperature  
(3 points)  
Sensor node



Temperature  
& Humidity  
Sensor node

- Small size (45 x 90 x 27mm)
- Long battery life (AAA\*2)
- Wide wireless coverage



- Electrical Conductivity
- Soil Temperature
- Soil Moisture

<http://www.murata.com/>

## Company Profile:

For more than 30 Years, Pessl Instruments has been offering a wide variety of monitoring systems for informed decision-making on a smart farm. Weather stations, data-loggers, sensors and services under the METOS brand and an online platform FieldClimate.com help farmers turn information into profits.



## Market Footprint:

Pessl Instruments currently operates in 80 countries worldwide. NB-IoT deployments will be based on the network operator's availability.

## Products and Solutions:

### µMETOS NB-IoTs for Weather and Soil Moisture

A Smart Weather and Soil Moisture Monitoring for Remote Areas

µMETOS NB-IoT is a NB-IoT based weather station which collects environmental data, such as temperature, rainfall, solar radiation, relative humidity, soil moisture etc. and through FieldClimate platform transforms it into actionable information in the form of precise micro-location weather forecast, disease prediction models, better soil moisture management and more.

So far, this has only been possible in the areas covered with good network, but with µMETOS NB-IoT and by taking advantage of the NB-IoT technology, we will be able to reach out to the remotest and least connected areas, while also prolonging device battery life to 7-8 years, due to extremely low power consumption.

The area of soil moisture management will be additionally covered with µMETOS D&D and µMETOS SoilMoisture, which will measure data about soil moisture, precipitation and plant water status. Wide portfolio of soil moisture sensors will be fit for all crops and every farming and gardening situation.

<http://www.pesslinstruments.com/>





## Company Profile:

Midea Smart Technology Co., Ltd. is the smart home products and services subsidiary company of Midea Group. The company is responsible for establishing Midea Group's overall smart home system and its daily maintenance and operation, and as a basis for creating smart home ecosystem with partners and improving smart life service operation system.

## Market Footprint :

- America
- Europe
- Asia Pacific
- Middle East & Africa

## Products and Solutions:

### Internet+Smart roller Washing Machine MG80-GF03DW

U-Clean Midea O2O branding focusing on laundry. U-Clean platform provides LBS based laundry service by U-Clean application, smart washing machine and Midea IoT cloud, and consumer could enjoy self-served laundry service at U-Clean site.

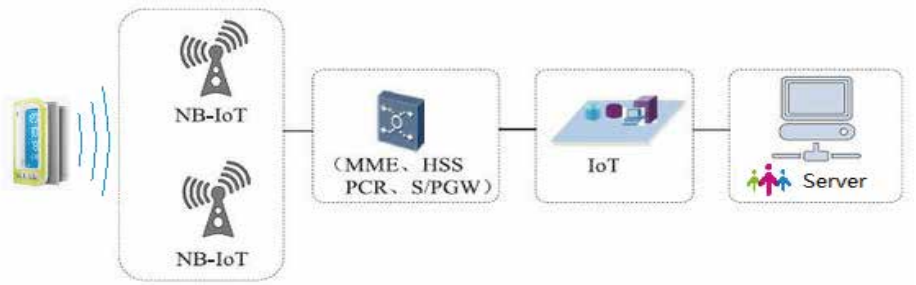
U-Clean operated by Midea and franchisees and distributed in campus and communities, provides mutual and diverse ways of payment and service. Consumer could pay via mobile ordering, dropping coins, swiping a card etc., and also monitor status of laundry process and get message pushing on your app. U-Clean keeps a healthy machine by roller self-clean function with nano silver ions aseptic technique.



<http://www.midea.com/global/>

## Company Profile:

- Life Sense, established in 2002, focus on the Smart healthy sector, including smart wristband, smart watch, blood pressure monitor etc.
- In 2014, Life Sense cooperated with WeChat to be among the first Smart hardware brands of Wechat.
- In 2015, total sales of health care electronic products reached up to 10.8 million units. Life sense became the second largest wearable brand in China.
- In 2016, our blood pressure monitor won the Germany iF industrial design prize.



## Products and Solutions:

- Life Sense's Health care electronic products are used in many areas. Devices are usually used inside the building. NB-IoT network will provide large area coverage as well as strong indoor penetration.
- Based on current data size for transmitting, we are trying to design even lower power consumption products. NB-IoT will satisfy this requirement.

## Market Footprint:

Life Sense's products sales area cover Asia, America, and Europe. According to IDC report, Life Sense is the fifth largest wearable brand in the world.

Contact us:

Add: Zone A, No.105 ,Dongli Road, Torch Development District, Zhongshan

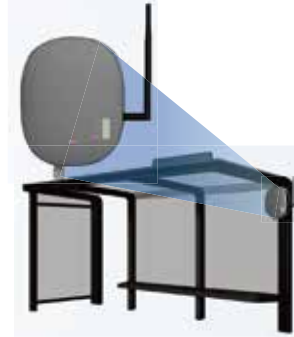
Tel: 400-600-2323 E-mail: [contact@lifesense.com](mailto:contact@lifesense.com)

Web: [www.lifesense.com](http://www.lifesense.com)

**Products and Solutions:**

**iThings™**

**IoT  
Air Quality  
Sensor Device  
IRX- - -01A**



IRX-ENV-NB-01A is a sensor device for measuring the air quality of the outdoor air condition. Air quality (PM2.5, PM10, CO, O<sub>3</sub>, NO<sub>2</sub>, SO<sub>2</sub>), temperature and humidity sensors are included in the device.

The air quality sensor device can detect the CAI (Comprehensive Air-quality index). This product has been developed to indicate whether the harm to the human body, depending on how much air pollution.

**Applications**

- Detection for CAI in the outdoor air quality monitoring
- Detection for vehicle that emit noxious gas
- Detection for unhealthy living conditions

**Features**

- Compact size, light weight (W135 x H167 x D56 / 300g)
- Maximum 9 types of air-quality extendable for customizing
- Able to distinguish small or large particles
- Supporting NB-IoT mobile network (LG U+, KOR)

**Mobile Demo Service**

iOS, Android APP



**iRexNet, Inc.**  
**iThings™**

www.irexnet.co.kr

Contact  
Website: [www.irexnet.co.kr](http://www.irexnet.co.kr)  
Tel: +82-42-489-6378  
Tel: +82-42-489-6379  
Email: [irexnet@irexnet.co.kr](mailto:irexnet@irexnet.co.kr)

## Company Profile:

Lierda Science and Technology Group Co. Ltd (Lierda) is a modern Chinese enterprise that provides embedded system solutions and M2M (Machine-2-Machine) application products. The Lierda headquarter, Lierda Building, is located in Hangzhou, one of the most well known tour cities in China.

We have over 10 years of experience in the IoT industry and employ all sorts of elites in different areas, from research to product development as well as marketing to management. We aim to provide services and products with best quality to our customers and users.

## Products and Solutions:



- Reporting sales volume and inventory information
- Remote configuration of price information.
- Online payment
- Fault alarm



Vending machine



Vending machine (operation panel)

Contact: [lychun@lierda.com](mailto:lychun@lierda.com)  
<http://en.lierda.com/>

## Products and Solutions:

### Management and Positioning of The Cold Chain Asset

The NB-IoT technology is used to upload temperature data to the cloud platform. With integrated GPS, it can achieve function of precise positioning. This product can be integrated with various sensors, such as temperature sensor and motion status sensor, in order to achieve functions of temperature measurement and displacement monitoring.

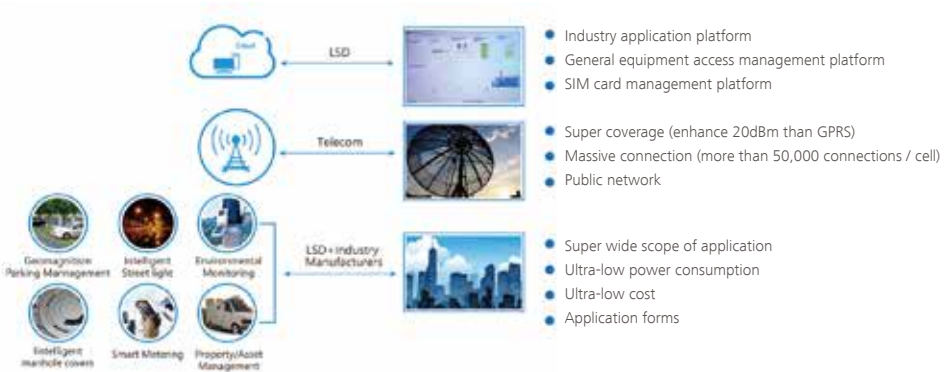


### Smart Shoes

Smart shoes are integrated with NB-IoT module. Functions of the product include exercise monitoring, historical trajectory query, anti-lost positioning for children, report to the police, remote monitoring, smart care, search of missing person.



### Business Application Programming of NB-IoT





## Company Profile:

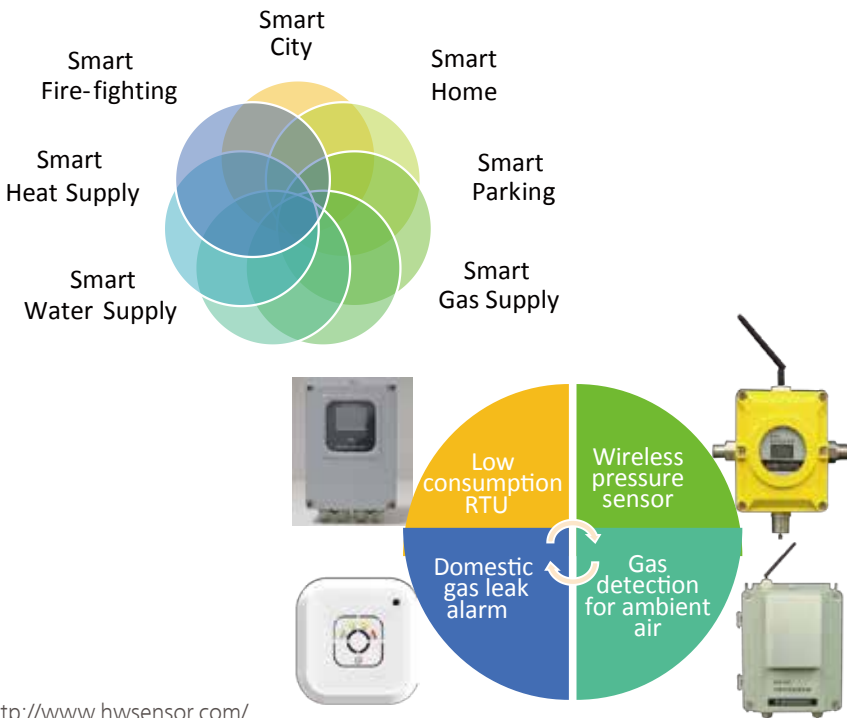
Henan Hanwei Electronics Co.,Ltd. founded in 1998, is the largest gas sensors and instruments manufacturer in China. Around IoT industry, Hanwei Electronics will combine sensors, intelligent terminal, communication technology, cloud computing and geographic information closely together with IoT technology, create Hanwei cloud, establish a complete IoT industry chain. Hanwei Electronics focus on the customer value, provide perfect solutions for smart city, production safety, environmental protection, health of the people's livelihood.

## Products and Solutions:

### Typical application:

#### Flammable gas detection of municipal pipeline wells

- Power supply by battery and quite low consumption
- Time+Alarm dual data uploading design
- Parameters can be set locally or remotely
- Suitable for use in explosive environment
- Based on multiple client software like PC or smart phone

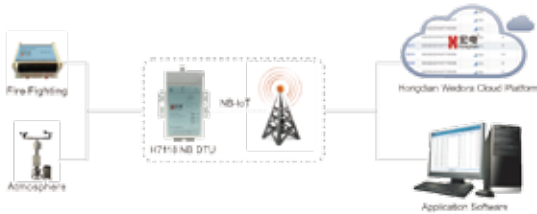


<http://www.hwsensor.com/>

## Company Profile:

A National High-Tech enterprise, specializing in M2M communication, Mobile DVR and intelligent water.

- Early in May of 2002 Hongdian released the first M2M products and solutions in its domestic market based on mobile communication network.
- No.1 M2M products market share in homeland, with 50% growth rate for 3 consecutive years.
- More than 10000 cooperation partners, including Orange, AT&T, China Telecom, China Unicom, China Mobile.



## Products and Solutions:

Let IoT extend to every corner of the world and make connection more simple.

- Focus on M2M and sensing technology, enhance customers' ability to hold system's operation.
- Offer customized total solutions & technical service and rapidly react and meet customers' needs based on standardized & serialization set of products.

## Our Application:

More than 5,000,000 units of the products operate simultaneously, and more than 40 IoT subdivision industry applications.



## Market Footprint:

Hongdian has established a global marketing services network, the products are exported to more than 70 countries and regions.



Tel:+86-755-88864288

Web:<http://en.hongdian.com>

Address:F14-16, Headquarters economic center, Zhonghaixin Science & Tech Park, Bulan Road, Shenzhen , China

## Products and Solutions:

### Remote Gas Alarm System for Home security

#### Functionalities

- Remote alarm and audible light alarm when gas disclosure.
- Real-time alarm message pushed to APP and Wechat.
- The valve shut down immediately when gas disclosure.
- Low power NB-IoT module used to transmit alarm message.

### 1000 gas alarms deployed in Yongchuan, Chongqing, China.



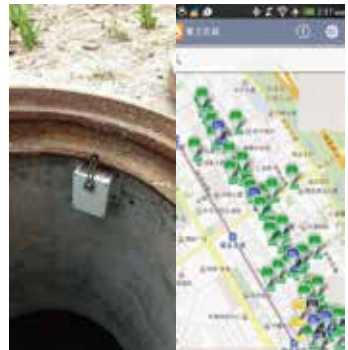
In the year 2017, GTI will develop some new products using NB-IOT module, such as smart door locks, parking locks and street light controller, etc.

### Real-Time Threat Monitoring and Management System for a City's Underground Infrastructure

#### Functionalities

Underground infrastructure monitoring for safety, maintenance, and planning.  
Predictive and real-time situational awareness and decision making.  
Sensors for underground toxic gas detection, water-level detection, etc.  
Low power NB-IoT module used to transmit alarm message.

1200 smart manhole-cover sensors deployed in Beijing, of China. The product promoted by our US partner to Phoenix city.





## Products and Solutions:

### NB-IoT Intelligence Dock

Model: HOTHINK-H3  
Rated Power: DC3.6V  
Protocol Stack: NB-IoT  
Quiescent Power Consumption: 15uA  
Communication Power Consumption:  $\leq 250\text{mA}$   
Sensitivity:  $-135\text{dBm}$   
Operation Temperature:  $-10\text{ }^{\circ}\text{C} \sim 60\text{ }^{\circ}\text{C}$   
Outlet Dimension: 150mm $\times$ 40mm



### Smoke Detection Alarmer

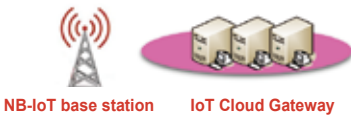
Model: NB739-1-I  
Rated Power: DC9V  
Quiescent Power Consumption: 12uA  
Alarm Power Consumption:  $\leq 25\text{mA}$   
Alarm Loudness: 85dB(3m)  
Low Power Alarm: 7.2V  
Operation Temperature:  $0\text{ }^{\circ}\text{C} \sim 50\text{ }^{\circ}\text{C}$   
Operation Humidity:  $\leq 93\%$   
Outlet Dimension: 102mm $\times$ 35mm

### Application Service Layer



- Real-time monitoring
- TTS alarm
- GIS service

### Communication Network Layer



- Deep coverage
- Massive connection
- Secure and flexible
- Standardized interface

### Terminal Sensing Layer



- Plug and play
- Long battery life
- Low cost



## Company Profile :

Founded in 2014, ofo is the world's first bicycle-sharing platform. The "non-docking" concept enables users to break free from traditional "docking" constraints, working in combination with smartphone technology to provide a true bicycle-on-demand service, anytime and anywhere. Currently, ofo has announced a Series C round of financing worth US \$130 million.

## Products and Solutions:

ofo was the first company to propose a bicycle-sharing model without "docking" stations. Using the ofo app, users simply enter the bicycle plate number to receive an unlock code and then began riding. Having reached their destination, users leave the bicycle ready for the next person. Users are encouraged to share their own bicycles through the platform in exchange for the unlimited use of any ofo bicycles, thereby "sharing one and getting access to all".



## Market Footprint:

ofo, which first began in Beijing, has promoted the strategic layout from university campus to urban areas. ofo bicycle-sharing platform has provided over 100 million of riding services for more than 10 million registered users across China. With its rapid growth, it becomes the largest bicycle-sharing platform in China.



## NB-IoT

In relation to technology upgrades, ofo team persists to improve the stability of NB-IoT and low-power positioning function. Following the use of a new generation of smart lock, ofo look forward to connect 10 billion bicycles efficiently.

## Company Profile:

Founded in 2000 and with corporate headquarters in Shenzhen (China), PAX is a leading global provider of innovative electronic payment terminal solutions. PAX has comprehensive product lines, strong R&D capabilities, global presence and is ranked as one of the top 3 global payment terminal solution suppliers. The company is listed on the Hong Kong stock exchange as PAX Global Technology Ltd. (00327.HK).

## Market Footprint:

PAX has sold more than 10 million units in over 100 countries worldwide



## Products and Solutions:

Where innovation, security & technology meet the highest levels of international compliance.

- Portfolio of PCI & EMV compliant POS devices
- MasterCard Contactless & Visa payWave
- Software Development Kits
- Terminal Management System
- Customized Software Apps
- 24 x 7 Support

## Company Profile:

STMicroelectronics is a world leader in providing the semiconductor solutions that make a positive contribution to people's lives, today and into the future.

Offering one of the industry's broadest product portfolios, ST serves customers across the spectrum of electronics applications with innovative semiconductor solutions for Smart Driving and the Internet of Things. By getting more from technology to get more from life, ST stands for life.augmented.



## Products and Solutions:

### STM32

The STM32® portfolio offers an extraordinary variety of options, now including ARM® Cortex®-M cores (M0, M0+, M3, M4 and M7), giving developers flexibility to find the perfect STM32 for their applications.

Particular attention is paid to accommodate porting of applications from one device to another. The binary compatibility combined with the similar pinout assignment, hardware IPs proliferation and higher level programming language makes the development job far more convenient when dealing with the STM32 families.



### STM32 Security

- Anti-tamper detection
- Hardware AES256 supported
- Read/Write Protection
- Unique ID
- JTAG Fuse
- True Random Number Generator
- PCROP

### STM32 and NB-IoT

- Ultra Low Power and high performance
- Small Package. Down to 5mm<sup>2</sup>
- Security implemented on STM32 Family

[http://www.st.com/content/st\\_com/en.html](http://www.st.com/content/st_com/en.html)



# EVK Board

NB-IoT EVK toolkit, based on Huawei Boudica NB-IoT chipset, can be used for study, evaluation, development and design of hardware and AT command based on Boudica NB-IoT chipset.

## Toolkit includes:

- NB-IoT test board
- Serial port USB converter board
- Power adaptor
- USB cable
- JTAG debug cable
- Development guidebook

## Software:

- AT command and related test case,
- Support LogView, which is used to debug the hardware and software of Boudica chipset

## Interfaces :

- 2 UART interfaces, 18 GPIO interfaces
- SMA antenna interface
- SIM card slot
- Reset interface
- JTAG debug interface



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# NB-IoT USB Dongle

NB-IoT USB Dongle, produced by Lierda, is based on Huawei Boudica NB-IoT chipset and can be used for study, evaluation, development and design of hardware and AT command based on Boudica NB-IoT chipset.

Compared to the NB-IoT EVK Board, it is much smaller, and has a USB-A interface so that it can directly plug in the USB slot of laptops.

## Toolkit includes:

- USB dongle
- Antenna
- Current test cable
- Guidebook

## Software:

- AT command and related test case,
- Support LogView, which is used to debug the hardware and software of Boudica chipset

## Interfaces :

- USB-A
- SMA antenna interface
- SIM card slot
- Current test interface and switch
- Reset button
- JTAG debug interface



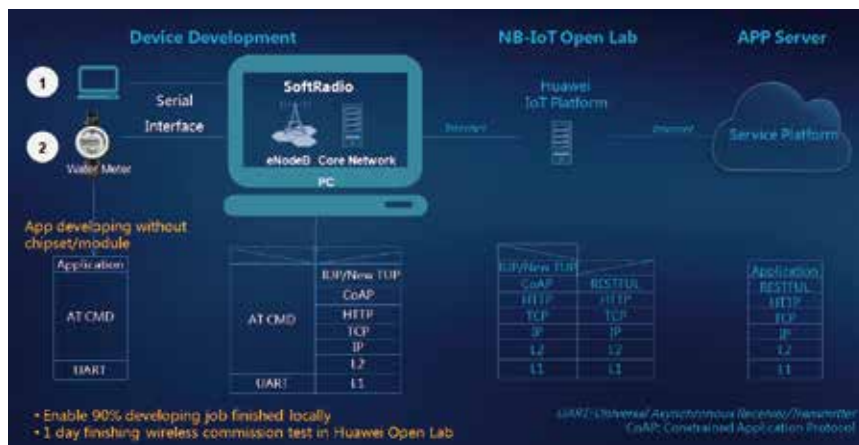
Produced by Lierda  
Contact: lychun@lierda.com



# Soft Radio

Soft Radio produced by Huawei is used to debug or test the application software of devices, to verify the interaction between device and IoT platform and APP server, it is bypassing the wireless communication hardware so that developers can test NB-IoT device without the need for a radio network.

While doing the test, the device needs to connect to Soft Radio using a serial port, and Soft Radio remotely gives access to the IoT platform and APP servers through Internet. This way, developers can quickly and conveniently develop and integrate NB-IoT applications for various use cases.



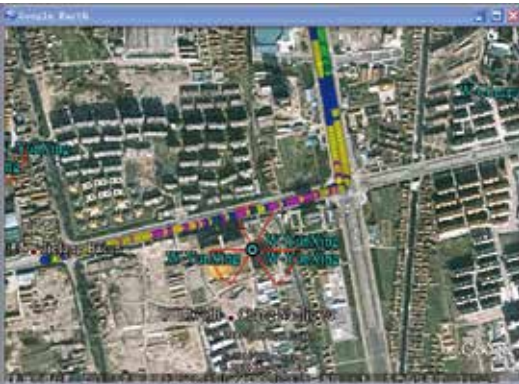
# U-Net



The GENEX U-Net produced by Huawei is a professional tool that fully supports the planning of NB-IoT networks. During the entire network life cycle, the U-Net helps operators to complete the initial network design, network simulation, coverage prediction, and network optimization.

The U-Net provides comprehensive network planning functions, advanced geographic information system (GIS), and easy-to-use design. These features help to efficiently plan the network parameters in order to obtain the best network planning result regarding network coverage, capacity, and quality.

## Probe



The Probe produced by Huawei is an air interface test software, which is used to collect the test data of the air interface of the NB-IoT network. Through the Probe, the network performance can be evaluated, the network optimization can be guided, and the fault can be rectified. The collected test data of the air interface on the radio network can be saved as the test logfile. This facilitates the data analysis after the logfile, which is imported to other post-processing software (such as GENEX Assistant) or the later data replaying.





# Standalone Test Device

NB-IoT Standalone Test Device is produced by Iierda. It can automatically send and receive data based on pre-defined traffic model assumptions. This tool can be installed in the field to simulate IoT devices, like water meters, parking sensors, etc. The battery inside the device can keep the tool running for at least 1 month. By automatically executing the pre-defined test cases, and getting final report on the server side, developers can evaluate the user experience in each location.

