

# NB-IoT Gateway

MODEL: TS-NB-GW200

Sensor Node & Gateway is Approved by

## With Truesync IoT Solutions, you can



## About truesync.io

Truesync IoT Systems is an IoT hardware and software company based in United Kingdom.

Our vision is to become a distinguished IoT solution provider in the IoT space which covers Smart City, Utilities, Energy, Industries & Manufacturing, and Farming sectors.

We conceptualize, design, develop, test, integrate, deliver, and support solutions for the client's needs and challenges.

By utilising our IoT Sensor Nodes, Gateways and Cloud solutions, we are helping in the front line of turning cities into Smart Cities, traditional grids into Smart Grids & Smart Energy entities with benchmarking references.

Reach us for your use cases and challenges via [www.truesync.io](http://www.truesync.io).

## IoT CONCEPTS & NB-IoT

The Internet of Things (IoT) is a network of physical devices that connect to and exchange data with other devices and services over the Internet or other network. There are currently over ten billion connected devices in the world, and more are added every year. Anything that can be embedded with the necessary sensors and software can be connected over the internet.

LPWAN technologies are suitable for IoT applications that rely on energy-efficient and thereby low-cost hardware for massive deployments on a wide range, potentially also within buildings.

Narrow Band-Internet of Things (NB-IoT) is a standards-based Low Power Wide Area (LPWA) technology developed to enable a wide range of new IoT devices and services. The first NB-IoT networks were only launched in 2017.

NB-IoT significantly improves the power consumption of user devices, system capacity and spectrum efficiency, especially in deep coverage. Battery life of more than 10 years can be supported for a wide range of use cases.

NB-IoT is an open, global, LTE-based 5G industry standard. As such, it is supported by all the major network suppliers, telcos, and hardware and chip manufacturers. NB-IoT uses licensed LTE frequency bands and is always operated by wireless network providers.

One of the largest benefits of NB-IoT is the ability for modules to operate for several years on a battery charge. NB-IoT chipsets are optimized for low power consumption—focusing only on radio features relevant to the devices used. Signalling and overhead are reduced so that data is transferred more efficiently directly over the control plane—a feature referred to as Data over Non-Access Stratum (DoNAS).

Moreover, key 3GPP features such as Power Saving Mode (PSM) put modules into a sleep mode with very low energy consumption while sending occasional Tracking Area Update (TAU) messages to keep them registered at the network and avoid the need to reregister upon wake-up. This long periodic TAU feature allows modules to extend the duration between these tracking messages up to several weeks, enabling very long sleep intervals.

In addition, NB-IoT's Extended Discontinuous Reception (eDRX) feature offers a longer low-power paging mode that allows devices to receive downlink data from the server, without sending uplink data, helping to further conserve battery life.

## NB-IoT Gateway

TS-NB-GW200 is an NB-IoT Gateway which can be used for various LPWA IoT Use Cases such as detecting Level, depths in different applications such as Air Quality, Water Levels, Waste Bin Level, Smart Metering, Smart Farming etc.

It is one of the most flexible Gateway in terms of Physical Interfaces , that can be adapted to almost any LPWA IoT Use cases using NB-IoT Technology.

## Features



Wireless  
Technology



Ingress  
Protection







Long  
Battery Life

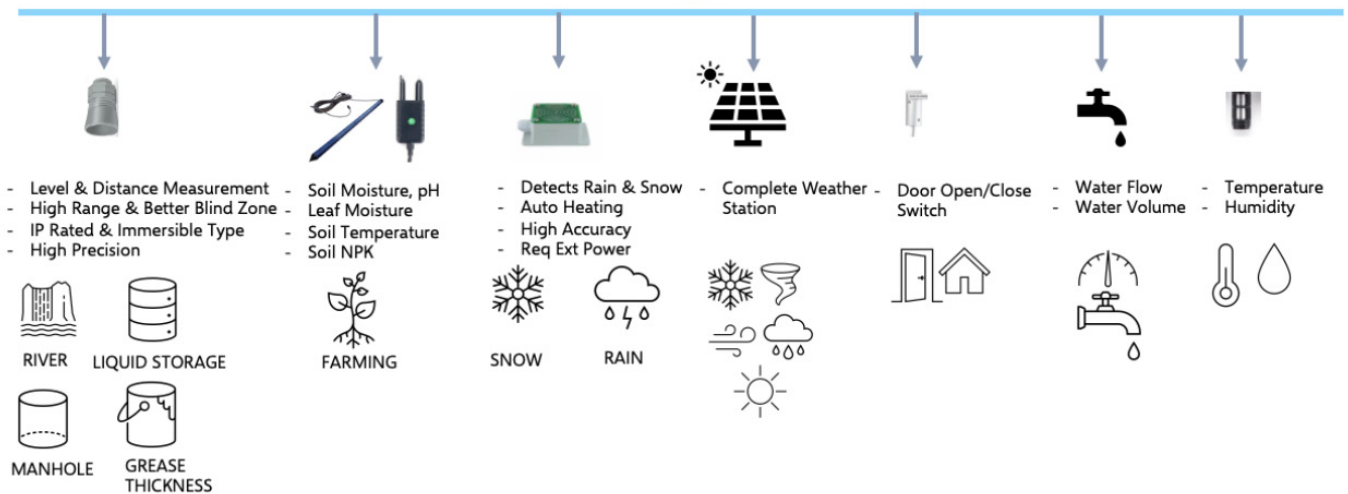


Extensive  
Coverage

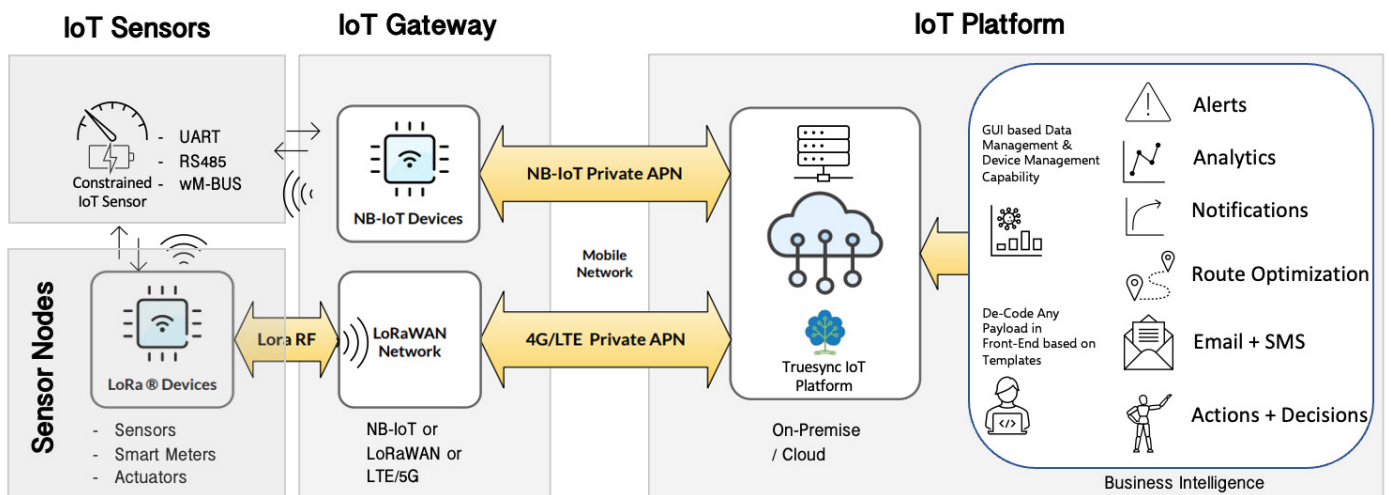
# One Gateway and Many IoT Use Cases

Get information directly to

-   
Mobile
-   
Desktop
-   
SMS
-   
Emergency Responders



## Architecture



# Product Specification

## APPLICATIONS

Sensing application such as Fill Level, Air Quality, Smart Metering etc.  
 Many more IoT Use Case Integration possibilities.

## GATEWAY KEY FEATURES

Dimension	130 mm x 50 mm x 45 mm
Weight	150g
Battery	Non-rechargeable, Li/SOCI2 battery rated 8500 mAh
Operating Temperature	-40°C ~ 85°C
Network	NB-IoT Technology
Frequency Bands	B1, B3, B5, B8, B20, B28
Bandwidth	180 kHz
Bidirectional Data Transfer	Half-Duplex
Protocols supported	TCP/UDP/MQTT
Cloud Integration	Compatible with any cloud platform (e.g., Truesync IoT Platform, Microsoft Azure, AWS, Thingsboard etc)
Microcontroller based	STM32L072xx
Interfaces	UART, I2C, Analogue & Digital
Enclosure	Rated IP68 for waterproof protection
Connectivity	NB-IoT via Micro SIM card slot
Power Efficiency	Operates on ultra-low power consumption
Configuration	Parameters adjustable using AT Commands

## SECURITY FEATURES

Utilizes licensed spectrum for secure communication

Authenticate the devices using SIM cards

Secure, private access point names (APNs)

Standard LTE air interface encryption

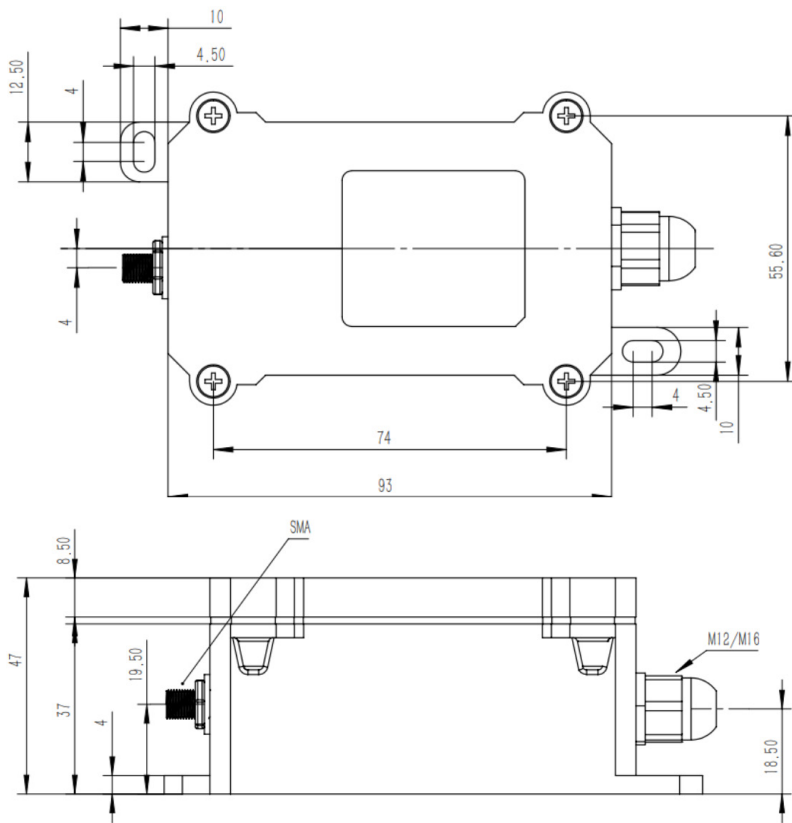
## PACKING LIST

NB-IoT Gateway	1
TTL Cable (Data Transfer)	1
Catalogue	1

ORDER INFORMATION

Device	Part No.
NB-IoT Gateway	TS-NB-GW200

Product Dimension



**Caution: Do Not Recharge Battery**

Battery used in this device is non-rechargeable type. Please do not recharge it. If out of power, please replace with new battery from Truesync.



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