



The number of devices connected via the Internet is continuously growing. To ensure a seamless, power efficient and secure data exchange the 3rd Generation Partnership Project (3GPP) has released the Narrow-Band Internet-of-Things standard (NB-IoT). This is a complete new, low power cellular communication standard that is part of the LTE communication standard-family.

The NB-IoT cellular communication technology is using available LTE network infrastructure worldwide and is designed to operate in a wide range of environmental conditions. The worldwide communication industry is very much committed to NB-IoT.

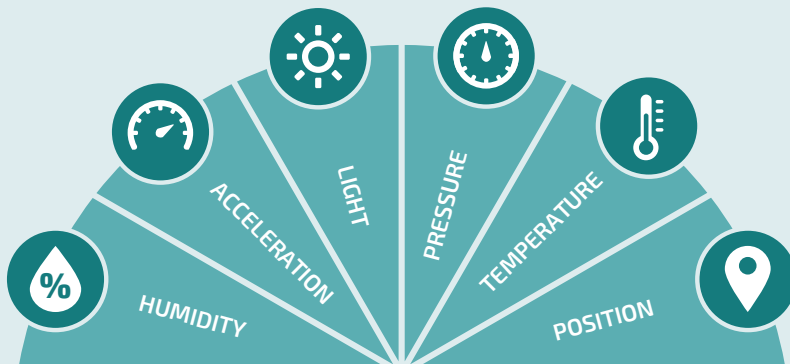
## NB-IoT:

- operates at low power to allow long battery life time.
- improves coverage in hidden indoor scenarios thus outperforms existing cellular standards by far.
- uses already existing cellular network structure and thus reduces the total cost of ownership and enables connectivity worldwide immediately.
- supports a massive number of devices & simple installation in the field.
- offers secure communication of IoT data.

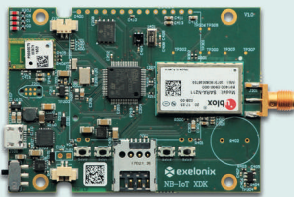


The NB-IoT technology provides the basis for revolutionary low power communication solutions for health care, smart home, traffic, logistic systems, or industrial applications.

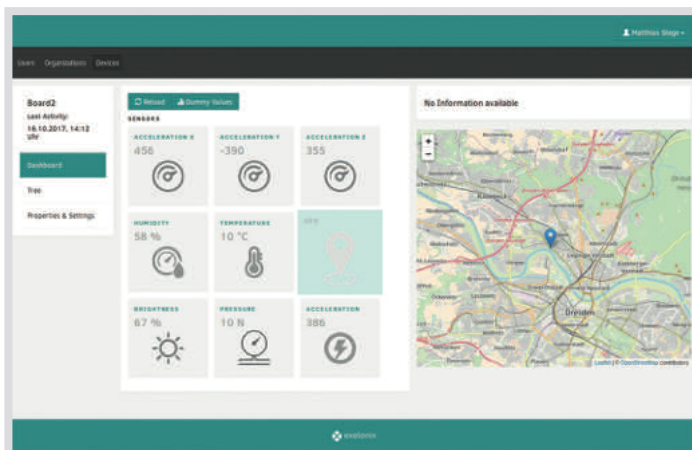




## NARROW BAND IoT DEMONSTRATION EVALUATION STARTER KIT



Get started with NB-IoT straight away! NB|DESK provides everything you need to start remote monitoring: NB-IoT modem, GPS, battery and multi-functional sensors combined in a single box with standard REST-interfaces for common IoT platforms. No development or programming needed to get started. Login, define thresholds and remain in control.



## NB|DESK FEATURES:

- NB-IoT Network coverage test
- NB-IoT Latency testing
- Push to transmit sensor data
- Plug'n Play cloud solution for demos & testing

### On-board Sensors:

Temperature  
Humidity  
Light  
Accelerometer  
Air Pressure  
GPS

### Modem:

Cat. NB1, single-tone uplink  
(up to 27.2 Kbps DL, 62.5 Kbps UL)  
3GPP Release 13

### Power Supply:

Lithium-Ion battery  
Standard USB Power Supply  
Solar Panel (optional)

### Frequencies:

Band 8 (900MHz)  
Band 20 (800 MHz)  
Band 8 & 20  
Band 28 (700 MHz)

### Environmental data, quality & reliability:

Operating temperature:  
0°C to +45°C  
RoHS compliant (lead free)

### Actors:

4 LED & Display

### Buttons:

Trigger to Send Data

### Power consumption:

Deep sleep mode: <4µA  
Active mode: <6mA  
Rx mode: <20mA  
Tx mode: <220mA

### Data Transfer:

Non-IP based Small Data  
over NAS (SDoNAS)  
IP based SDoNAS  
UDP  
http