

# ULTIMATE NETWORK COMPARISON



Top Six IoT Network Technologies Compared - Which IoT Network Is Best for You?

## Pros & Cons

### TOP PROS



#### LoRa/LoRaWAN

Ground-up LPWAN design (low battery consumption, long range, seamless Cloud integration)  
Cost-efficient roll-out  
Open business models (public, private, open communities)

#### NB-IoT

Leverage existing 4G coverage  
Large volume of data  
Download capacity on licensed spectrum

#### Zigbee

Device security  
Better mesh capabilities when compared to Wi-Fi  
Flexibility for users and developers (backwards compatibility, etc.)

#### Wi-Fi

Simplified cost-efficient deployment  
Alternative to 5G (Wi-Fi6)  
Ubiquitous mobility (open roaming)

#### BLE

Low cost  
Simple setup  
No hardware required

#### 5G

Higher capacity  
Higher data rates and lower latency  
Software designed core network



### TOP CONS

#### LoRa/LoRaWAN

Not ideal for applications requiring high data rates  
Not ideal for applications requiring lower latency

#### NB-IoT

High battery consumption and mobility issues  
Ecosystem complexity (2G, 3G, 4G, 5G) and multiple releases  
High cost LTE roll-out for massive IoT use cases only

#### Zigbee

Low transmission and network stability  
Short range  
High maintenance costs

#### Wi-Fi

Limited coverage range  
Limited security  
High energy requirements

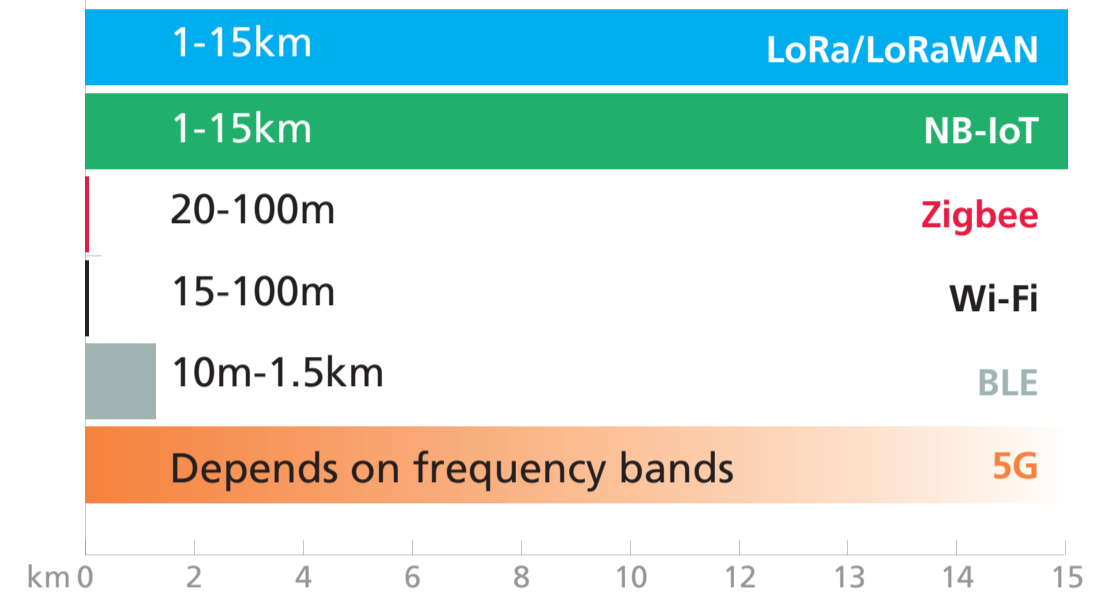
#### BLE

Short connection time  
Short range  
Low bandwidth

#### 5G

Short range in the millimeter waves  
High cost and complex infrastructure  
Complex ecosystem (2G, 3G, 4G, 5G releases)

## Range



## Deployment

### COST VS. LIFESPAN

#### LoRa/LoRaWAN

Reduces upfront infrastructure, operating and end-node sensor costs. Overall reduced costs over time due to battery life.

#### NB-IoT

Reduces cost over time due to battery life. However, there is a risk that ISP giants will rack up licensing fees in the future. LTE network roll-out is not cost effective for massive only use cases.

#### Zigbee

Low entry cost, but maintenance, devices, etc., can increase total cost of ownership.

#### Wi-Fi

Requires a router, and it is recommended that routers are changed every three to four years.

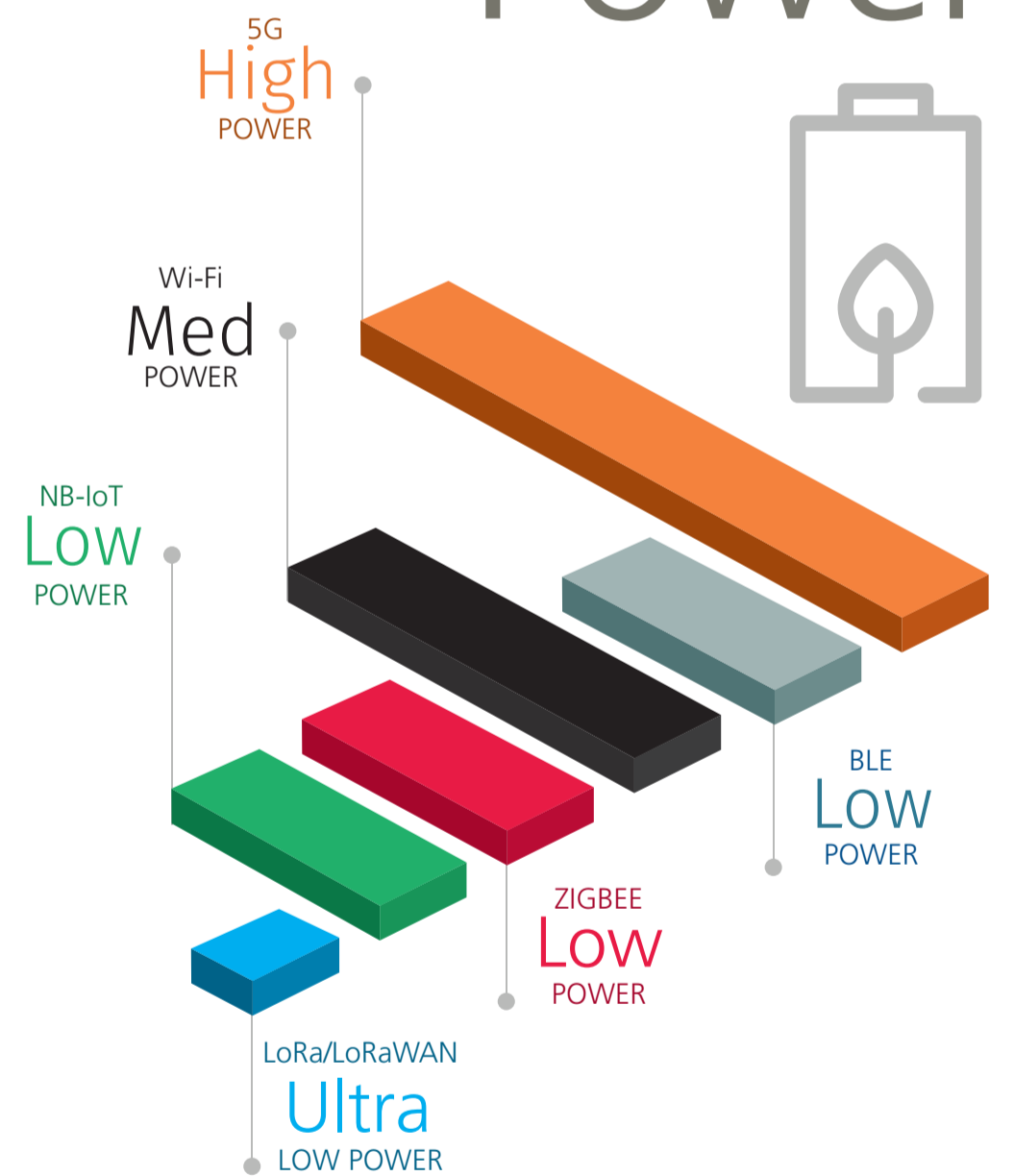
#### BLE

A cheaper alternative to traditional Bluetooth because it exchanges small amounts of data and has a long battery life (up to five years).

#### 5G

5G requires high investment costs/estimated 10 year lifespan.

## Power



Explore leading IoT solutions offered by the ecosystem at [semtech.com/LoRa](https://semtech.com/LoRa)



Semtech, the Semtech logo and LoRa® are registered trademarks or service marks of Semtech Corporation or its affiliates. LoRaWAN® is a registered trademark. Ultimate Network Comparison/2021