



# NB-IoT enabled Smart Air Quality Analyzer



# NB-IoT enabled Smart Air Quality Analyzer



Our client, a leading Utilities company wanted to develop a NB-IoT enabled air quality monitoring solution with cloud connectivity. They wanted a solution that optimized battery life to run for years.

## Results / Outcomes

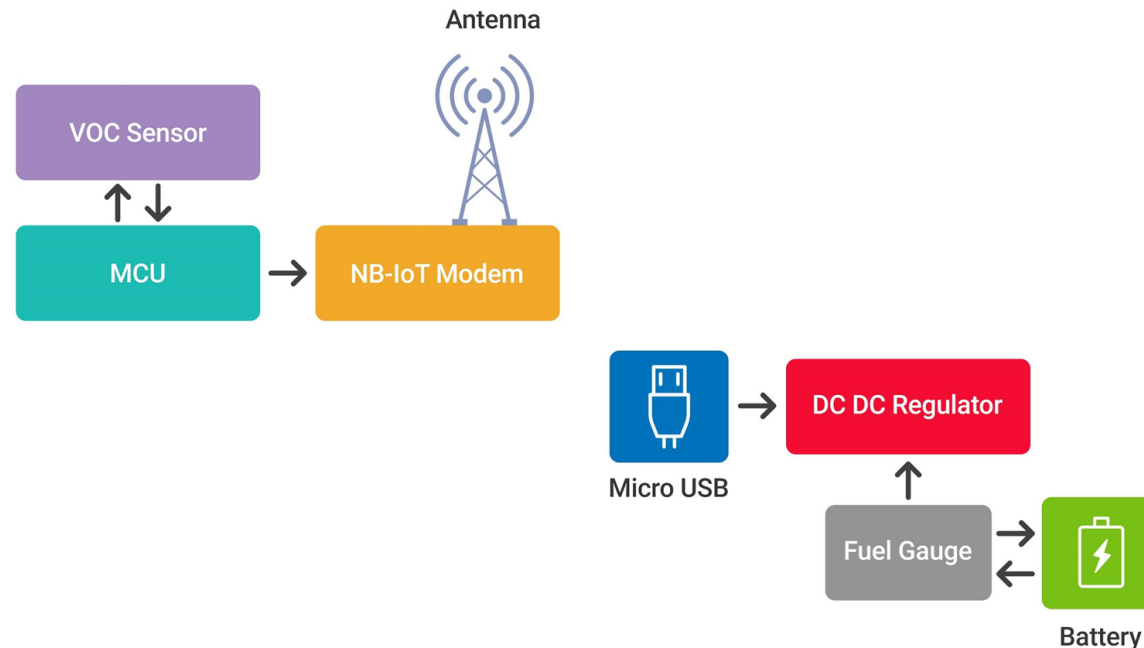
- Smart Air Quality Analyzer with an NB-IoT chip that runs on the battery as well as USB
- Implemented Real-time monitoring of air quality with alerting if the air quality goes below permissible values
- The device will run directly on USB power if available, otherwise, it will resort to the battery
- Data available on the cloud for actionable insights.
- The extended battery life of 3 years



## What we did

Gadgeon developed a air quality Sensor with an NB-IoT chip that runs on battery. An ultra low power MCU will be the heart of the system. It will operate in sleep mode and wake up periodically to sense the air quality and store the readings in flash memory. Depending on the readings, it will configure the next sensing interval and go back to sleep. A replaceable battery of 2000mAH is used for the system. The device will run directly on USB power if available, otherwise, it will resort to the battery. The expected lifetime of the battery is close to 3 years.

The readings are sent to cloud platform hosted in AWS. Users can log in and view their system status through a mobile app. In case of air quality alerts, push notifications are sent to mobile app. Users can view the history of the readings and get trend charts etc.





## Why NB-IoT ?

- Moderate module cost
- Ideal for high-density IoT applications
- Very low power consumption and hence extended battery life
- Extended long-range coverage and deep penetration indoors and underground
- Easily integrates into existing cellular systems and easy deployment

Wireless smart meters are gaining momentum across the world. And, with the multiple benefits presented by NB-IoT, cities are likely just the beginning of a long-lasting transformation in utility services

# ▶ Data Flow Diagram



**THANK YOU**



**For More Details, Let's Connect**



**Gadgeon Systems Inc.**

881 Yosemite Way, Milpitas, CA 95035, USA

**CONTACT - USA**

Mani Ram - Vice President - Solutions and Technology

 +1-678-900-0874 |  [mani.ram@gadgeon.com](mailto:mani.ram@gadgeon.com)

**Gadgeon Smart Systems Pvt Ltd.**

VI 405/E1, Fathima Tower, Maleppally Road, Thrikkakara PO,  
Kochi, Kerala, PIN: 682021, India

**CONTACT - INDIA**

Hari Nair - CEO: +91 9895 01 58 80

 +91 989-501-5880 |  [hari.nair@gadgeon.com](mailto:hari.nair@gadgeon.com)

**Gadgeon Europe**

Antwerpsesteenweg 124/54, 2630

Aartselaar, Belgium

 +32 475 23 39 46 |  [europe@gadgeon.com](mailto:europe@gadgeon.com)

 [sales@gadgeon.com](mailto:sales@gadgeon.com)