Case Study

A detailed analysis of NLC1110, a product designed and developed by Nebulae, a subsidiary of System Level Solutions.
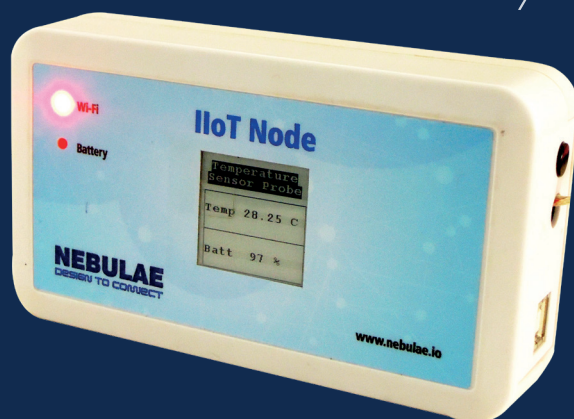
Challenges

With temperature monitoring and control holding paramount importance across a spectrum of industrial and non-industrial use cases, companies needed an accurate temperature measuring device capable of sensing values within a range of 0°C to 1000°C. Besides, clients were looking for a product that could be easily integrated into their existing systems and the data of which could be managed via the cloud. The industry's adherence to 'Make-in-India' remained crucial throughout the entire product development cycle.

Remedy

Nebulae designed an immaculate, easily configurable temperature measuring device, NebuLink Controller NLC1110 that is capable of sensing accurate values from 0°C up to 1000°C. It is an industry-standard handheld wireless device that is compact and easy to use. It is developed to provide a complete package for serving applications like the fermentation processes, drying ovens, kitchens, coal mining, etc. NLC1110 is pre-programmed with Nebulae and Yalgaar frameworks, allowing the end-user to-

- Easily integrate into their existing frameworks
- Easily manage its data from the cloud

Dual-core, 32-bit Microprocessor
Uses a module having inbuilt WiFi and Bluetooth support

K-type thermocouple-based Temperature Sensor
Best in industry thermocouple sensor for a range of 0°C up to 1000°C, providing 0.25°C resolution

1.54" E-paper LCD display with 152*152 resolution
Consumes 5% less power than normal LCD, displays last-second data even in a deep sleep state

Li-polymer 1000mAh Battery
Rechargeable battery that lasts for 4 days through WiFi with advanced deep sleep state

Status LEDs
One for battery the and the other for showing WiFi operational status

Nebulae RTOS SDK and Yalgaar SDK
Provides easy data transfer, cloud compatibility, and dashboard hooks/APIs

WiFi Configuration
No separate cost for cloud communication eg. cellular

Smallest and light Form Factor
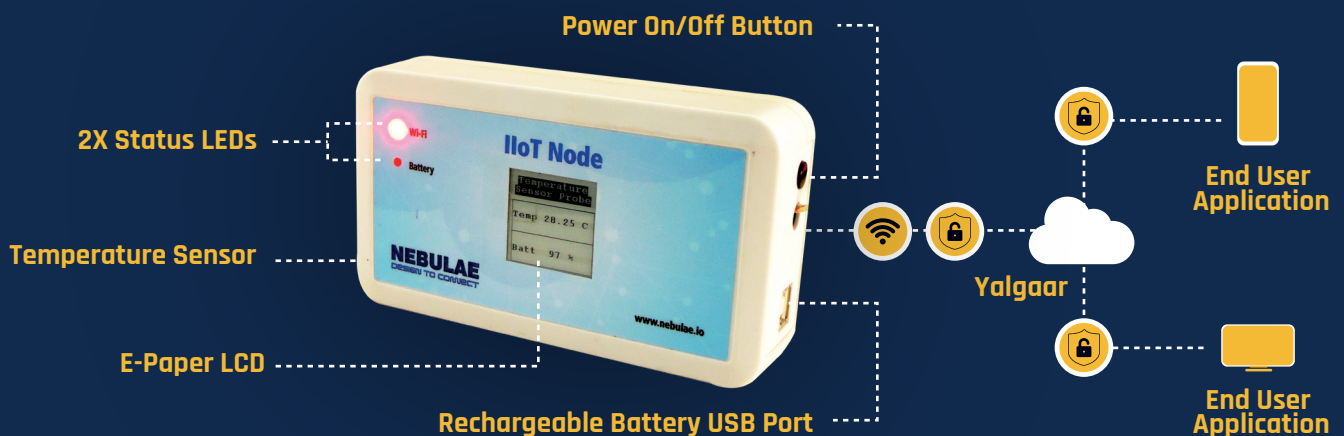Can be deployed anywhere

API and Interface
Various plans with cloud communication API and secured Yalgaar interface

Zero Tough Configurations
Zero tough configurations to WiFi and cloud with open mobile APPs

Power On/Off Button

2X Status LEDs

Wi-Fi
Battery

IIoT Node

Temperature
Sensor Probe

Temp 28.25 C

Batt 97 %

NEBULAE
DESIGN TO CONNECT

www.nebulae.io

Temperature Sensor

E-Paper LCD

Rechargeable Battery USB Port

Yalgaar

End User Application

End User Application

Benefits

- Reduced power consumption ensuring longer battery life
- Prompt data delivery updated at every last second
- Easy integration with the client's existing system
- Rechargeable battery pack with a USB option
- Automatic debugging in case of an issue
- Reading intervals easily configured

Applications

- Monitoring: DG Temperature
- Motor Protection: Winding and Bearing Temperature
- Drying Ovens
- Fermentation Processes
- Metal and Mining
- Machine Condition Monitoring