

CASCADEMIC Solutions

Innovation Towards an Embedded Planet

Building Infrastructure for Industrial IoT Solutions

CASCADEMIC - In a Nutshell



Requirement Analysis,
Architecture and Design



Manufacturing



System Integration &
Go to Market

- Incorporated in 2013
- Focused on providing End-to-End Industrial IoT Solutions
- Assured Support from Proof of Concept to Production Roll Out
- Independent Fabless ODM Solution provider.
- Modular Solution Architecture
- Strong Design and Engineering Team

CASCADemic Value Proposition

Sensors → Gateways → Cloud Platform

Turnkey Product Responsibility for End to End Solutions



Indigenously developed Gateway and Nodes, with complete control over hardware and firmware facilitating customization with rapid time to market



Modular Architecture



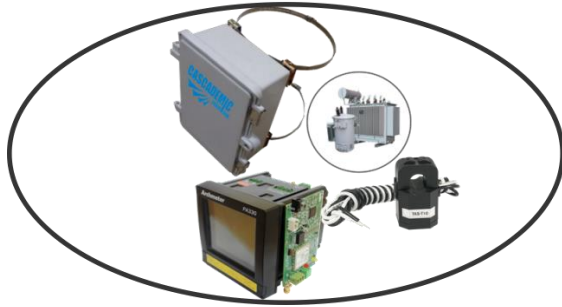
Wireless Network
Expertise



Industrial Grade
Ruggedized Solutions



Strong Belief in Partnerships



Energy Management



Industrial IoT Gateways



Asset Management and Workforce
Footprint

Solution Verticals



Environment Monitoring



Wireless Data Loggers



Wireless Thermal Printers



Telecom Tower Monitoring

- Power monitoring of Individual Operators
- Real time monitoring of Base Station – Temperature , Smoke , Movement with Single Gateway
- Health of Power Supply
- Fuel Level in DG



Power Quality Monitoring

- Power Quality of Secondary Side
- Power Factor and Harmonics
- Voltage Sag and Swell
- 3 Phase and Single Phase Monitoring

Energy Management



Transformer Monitoring

- Lug Temperature
- Oil Temperature
- Secondary Side Load Analysis
- Connectivity to Smart Meter/ SCADA in panel



Battery Monitoring

- Battery Voltage Monitoring
- Charging / Discharging Current
- Ambient and Surface Temperature
- Health of Battery



IoT Gateway – Data Logger for Industrial Machines

- Based on NXP i.MX6 SOM
- MODBUS Connectivity to PLC / SCADA
- PROFIBUS Expansion Card
- 8 Channel Analog Input Module
- 1 Ethernet Port
- 1 GB RAM (Can be Expanded)
- SD Card based Storage
- Wireless Communication
 - 3G / 4G
 - Wi-Fi
 - BT
 - Ethernet

IoT Gateways for Industry 4.0



LoRaWAN Gateway

- Based on NXP i.MX6 SOM
- 8 Channel LoRaWAN Gateway
- LoRaWAN Protocol Class A and Class C
- Compatible with 865-967MHZ, 915-920MHz LoRaWAN Band
- In built LoRaWAN Network Server
- MODBUS TCP Ouput
- SQLite based Database
- Wireless Communication
 - 3G / 4G
 - Wi-Fi
 - Ethernet



Air Quality Monitoring

- Real time Monitoring of Hazardous gases
- Carbon Dioxide, Carbon Monoxide , Ozone
- Sulphur Dioxide
- Nitrogen Dioxide



CASCADemic solutions

Temperature , Humidity and Pressure Monitoring

- Temperature Sensors – Indoor and Outdoor Environment
- Relative Humidity Monitoring
- Surface Temperature and Ambient Temperature
- Pressure Level– Liquid Level, Atmospheric Pressure

Environment Monitoring



Smart Agriculture

- Soil Temperature and Moisture
- Ambient Temperature , Humidity and Carbon Dioxide
- Water Valve Control
- Water Flow Monitoring



Particulate Matter Monitoring

- PM 2.5 and PM 10 Parameters
- Smoke Monitoring
- Real time alerts and notifications
- LCD Display with Wireless Communication



Workforce Footprint

- Efficiency of Contract Workers
- Location Tracking of Workers in High Dense Environment
- Mining Zones / Dense Metal Infrastructure
- Co-Related with machine utilisation



RFID Reader

- HF RFID Reader – Short Distance
- UHF RFID Reader – Long Distance
- Modular Wireless Communication
- Support for Active and Passive Tags

Industrial Asset Monitoring



Beacon based Location

- Beacon based Location Tracking
- Compact form factor
- iBeacon and Eddy stone Support
- Integrated with other wireless protocol



GPS with LoRa

- LoRa Based GPS Transmission
- Compatible with Multiple frequencies – 865-867/ 915Hz
- Additional Sensor Interfaces
- Compact Form Factor

MODBUS to Wireless Converters

- RS485 – MODBUS Connectivity to Slaves
- Analog and Digital Input Support
- Easy Configuration of MODBUS Slave
- Retrofit Device
- Store and Forward Logic
- Wireless Communication
 - 3G / 4G
 - Wi-Fi
 - NB-IoT
 - LoRa



Wireless Data Loggers

Smart Gateway

- 4 Analog Input Channel
 - 4-20mA Sensors Support
 - Analog Sensor
 - Can be configured as digital inputs
- MODBUS RTU
- Expertise with multiple sensors
- 3G / 4G / LoRa / NB-IoT / BLE Communication
- Accelerometer, Gyroscope, Magnetometer and MEMS Sensor Expertise
- Wireless Communication
 - 3G / 4G
 - Wi-Fi
 - NB-IoT
 - LoRa





2 Inch Bluetooth Thermal Printer

- Regional Language Printing
- Low Power Consumption
- Logo Printing
- Wi-Fi Option available



Printer Driver Cards

- Supports 2 Inch / 3 Inch Print Heads
- Support with Cutter and without Cutter Mechanisms
- Compact Form Factor TTL / RS232 Interface
- Can be expanded to include wireless interfaces

Thermal Printers



Token Printer Driver

- Support for 2 Inch / 3 Inch / 4 Inch Print heads
- LCD Support
- High Speed Printing
- Regional Language Printing



Panel Printer

- Supports 2 Inch Printer Head
- Support with Cutter and without Cutter Mechanisms
- Compact Form Factor TTL / RS232 Interface
- Can be expanded to include wireless interfaces

“India Comprehensive IIoT Solutions Enabling Technology Leadership Award” By Frost and Sullivan



Thank You

Assuring you the Best of IIoT and M2M Solutions

- Company Address:

#1743, 1st Floor, Sri Raghavendra Plaza,
9th Cross, J.P. Nagar 2nd Phase,
Bengaluru-560078, India

- Contact Details:

Phone : +91 80 2658 3333

Mobile : +91 94485 89414

Email : info@cascademic.com