WHIZBLOX

Microcontroller based 100% configurable IOT sensor Hub

Introducing WhizBlox

WhizBlox is a smart, multi-sensor, multi-protocol IOT hub, which seamlessly integrates more than 100 types of sensors, for quick deployment of vertical IOT solutions.

Why WhizBlox?

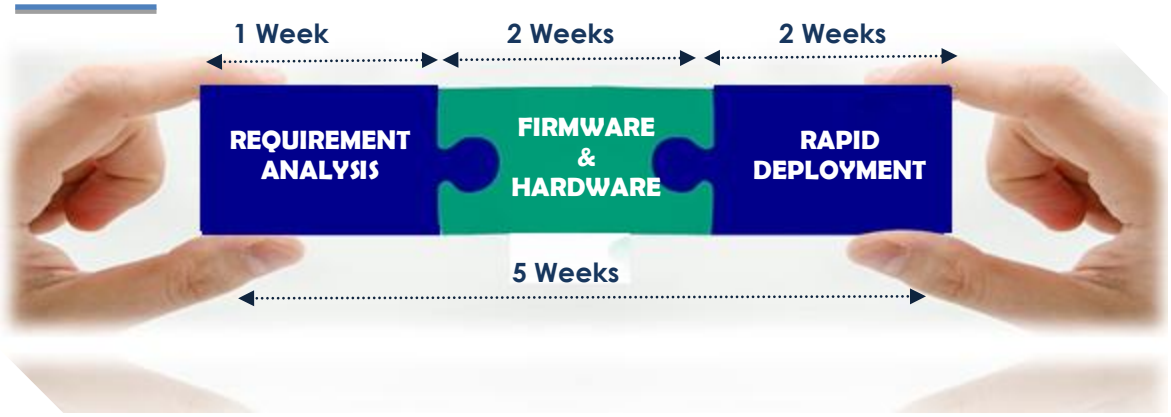
WhizBlox empowers your business with the following advantages –

- Rapid Prototyping, quick proof of concept that enables faster go to market in 6-9 weeks
- Operations Optimization
- Quick and easy deployment through plug and play techniques
- Intelligent cloud data analytics

Highlights

- **Built-in Smart Sensors**
  Temperature, Humidity, Pressure, 9-axis motion sensors accelerates easy and secure integration of devices to the cloud, thus improving operational efficiency
- **Multiple Wireless Technologies { Including LoRaWAN technology to deploy Low Power, Wide Area Network (LPWAN)}**
  Wide array of secure connectivity solutions through LoRa, WiFi, ZigBee, BLE 4.2, 6LoWPAN, GSM/GPRS/GPS networks
- **Multiple I/O Interfaces**
  Facilitates multiple connectivity to connect different sensors, including Analog, Digital and serial devices such as RS232, RS485
- **Multi- Protocol Communication**
  Securely connect and aggregate data from a wide range of standard industrial protocols such as Modbus, TCP/IP, HTTP(s), MQTT, Lonworks, BACNet, 4-20 mA, COAP
- **Low Power, Small Form Factor**
  Enables flexible, scalable deployment with ease of custom application development through rapid prototyping and quick proof-of-concept
- **Plug and Play Interoperability**
  Enables quick deployment of IOT applications, saving time, cost and faster go to market

Live Prototype In 4-6 weeks



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WHIZBLOX DEPLOYMENT APPLICATIONS

INDUSTRIAL IOT

Seamlessly build LoRaWAN or WiFi or BLE environment with standard industry protocols such as 4-20 mA, Modbus, SPI, CAN, I2C to monitor industrial sensors, such as pressure, temperature, humidity, tank levels, flow, gas levels, vibration levels, for industrial monitoring solutions and predictive maintenance

SMART CITY

Build LoRaWAN or other IOT environments to fulfill high end smart city applications such as air pollution monitoring, smart parking, smart lighting, smart buildings and waste management

SMART RETAIL

Leverage BLE 4.2 applications for refrigeration monitoring of pharmaceutical goods and asset tracking solutions for various retail applications such as inventory tracking and traceability

SMART AGRICULTURE

Integrate LoRaWAN solutions to enable remote monitoring of crops, soil and water to encourage precision agriculture applications

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WHIZBLOX 1.0, WHIZBLOX 1S, WHIZBLOX INDUSTRIAL
KEY FEATURES LIST

WHIZBLOX 1.0

- **Built-In Smart Sensors**
  - NIL
- **Multiple I/O Interfaces**
  - Analog
  - Digital
  - RS232
  - RS485
  - Ethernet
  - USB
  - CAN
- **Additional Sensors**
  - Custom interfaces for sensors
  - Supports a wide range of Arduino shields
- **Physical Specifications**
  - Dimensions :140x110x40 mm (LxWxH)
  - Operating Temperature: 0^0C to +55^0C
  - Expansion: 8 pin I/O connector, I/O expansion capability
- **External Interfaces**

Total of 28 GPIOs which can be configured as

  - UART/RS485 - 1
  - I2C - 1
  - SPI - 2
  - Digital IO – 8
  - Analog Input – 2
  - IO Expansion Capability - Digital IO, Analog IO, using I2C or SPI bridge

WHIZBLOX 1S

- **Built-In Smart Sensors**
  - Temperature
  - Humidity
  - Pressure
  - 9-Axis Motion Sensor
- **Multiple I/O Interfaces**
  - Analog
  - Digital
  - RS 232
  - RS 485
- **Additional Sensors**
  - Custom interface for sensors
  - Supports wide range of Grove Sensors
- **Physical Specifications**
  - Dimensions: 115x45x30 mm (LxWxH)
  - Operating Temperature: 0^0C to +55^0C
  - Expansion: 32 pin I/O connector, I/O expansion capability
- **External Interfaces**

Total of 8 GPIOs which can be configured as

  - UART/RS485 - 1
  - I2C - 1
  - SPI - 1
  - Digital IO – 8
  - Analog Input – 2
  - IO Expansion Capability - Digital IO, Analog IO, using I2C or SPI bridge

WHIZBLOX INDUSTRIAL

- **Built-In Smart Sensors**
  - Temperature
  - Humidity
  - Pressure
  - 9-Axis Motion Sensor
- **Multiple I/O Interfaces**
  - Analog
  - Digital
  - RS 232
  - RS 485
- **Additional Sensors**
  - Custom interface for sensors
  - Supports wide range of Grove Sensors
- **Physical Specifications**
  - Dimensions: 115x45x30 mm (LxWxH)
  - Operating Temperature: -25^0C to +85^0C
  - Expansion: 32 pin I/O connector, I/O expansion capability
- **External Interfaces**

Total of 8 GPIOs which can be configured as

  - UART/RS485 - 1
  - I2C - 1
  - SPI - 1
  - Digital IO – 8
  - Analog Input – 2
  - IO Expansion Capability - Digital IO, Analog IO, using I2C or SPI bridge

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WHIZBLOX IOT CONNECTIVITY HUB

CLOUD COMMUNICATION CAPABILITIES

- AWS
- Microsoft Azure
- IBM Bluemix
- 3rd Party Cloud

POWER INPUT

DC onlv 4.3 V - 5.5 V

BUILT-IN SENSORS

- Temperature
- Pressure
- Humidity
- 9 Axis Motion Sensor

COMMUNICATION TECHNOLOGIES

LoRa , BLE 4.2, WiFi, ZigBee, 6LoWPAN, GSM/GPRS/GPS/LTE

ENERGY MONITORING

INDUSTRIAL PLC

WHIZBLOX

OUTPUT

3.3 V or 5 V

THIRD PARTY INDUSTRIAL GRADE SENSORS

Level, Pressure, Flow, Gas (Carbon Monoxide, Hydrogen, Oxygen) etc.

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WHIZBLOX 1S TECHNICAL SPECIFICATIONS

PHYSICAL	
Dimensions	115x45x30 mm (LxWxH)
Operating Temperature	0^0C to +55^0C
Expansion	8 pin I/O connector, I/O expansion capability
On Board Sensors	Temperature, Humidity, Pressure, 9-axis motion sensor
Notifications	LEDs for Network connectivity General Functional LEDs
EXTERNAL INTERFACES	
Total of 8 GPIOs which can be configured as	
USB	Power Input only
UART/RS485	1
I2C	1
SPI	1
Digital IO	8
Analog Input	2
IO Expansion Capability	Digital IO, Analog IO, using I2C or SPI bridge
NETWORK INTERFACE	
Wireless Interface	LoRa, WiFi, BLE4.2, ZigBee, GSM/GPRS/GPS/LTE, 6LoWPAN
Communication Protocols	Modbus (RS485/TCP-IP), TCP/IP, HTTP(s), MQTT, Lonworks, BACNet, 4/20ma, COAP(s)
Cloud Communication Capability	AWS, Microsoft Azure, IBM Bluemix, 3rd Party Cloud
Wireless Antenna Options	Internal or External
POWER	
Input	4.3 V to 5.5 V (USB Micro connector)
Power	Power Consumption with Temperature, Pressure, Humidity and 9-axis sensors installed.

	No Radios	**BLE 4.2**	**LoRa**	**Wi-Fi**
Active	25 mW	75 mW	150 mW	315 mW
Standby	13 mW	35 mW	42 mW	125 mW

WHIZBLOX 1.0 TECHNICAL SPECIFICATIONS

PHYSICAL	
Dimensions	140x110x40 mm (LxWxH)
Operating Temperature	0^0C to +55^0C
Expansion	32 pin I/O connector, I/O expansion capability
On Board Sensors	Multiple sensors
Notifications	LEDs for Network connectivity General Functional LEDs
EXTERNAL INTERFACES	
Total of 28 GPIOs which can be configured as	
USB	Power Input only
UART/RS485	1
I2C	1
SPI	2
Digital IO	8
Analog Input	2
IO Expansion Capability	Digital IO, Analog IO, using I2C or SPI bridge
NETWORK INTERFACE	
Wireless Interface	LoRa, WiFi, BLE4.2, ZigBee, GSM/GPRS/GPS/LTE, 6LoWPAN,WLAN
Communication Protocols	Modbus (RS485/TCP-IP), TCP/IP, HTTP(s), MQTT, Lonworks, BACNet, 4/20ma, COAP(s), Ethernet
Cloud Communication Capability	AWS, Microsoft Azure, IBM Bluemix, 3rd Party Cloud
Wireless Antenna Options	Internal or External
POWER	
Input	4.3 V to 5.5 V (USB Micro connector)