

MODEL NAME

BD-IOT-GTW (Gateway Controller)

MAIN APPLICATION

Gateway up to 8 sensors
MQTT message hub can be set as broker or client
Gateway with Linux & Microcontroller I/O for various purposes
Central Communications Unit
Interactive Signage Display
Automation (IoT & Industry 4.0)
Factory Automation
Industrial Networks
Plant & Asset Management
Industrial Computer systems



DESCRIPTION

BD-IOT-GTW is a device designed to be used as a sensor gateway, although it can have many other purposes.

An industrialized, safe and robust board, which allows you to carry out your project whatever its purpose, uniting the two most important maker worlds, such as Arduino (AVR) & ARM (It integrates a Raspberry Pi Compute Module 3+.)

Inside has numerous RPI GPIOs available through a connector pin inside the board. Also, we integrate an Atmega328 microcontroller on board to bridge between the operating system and the final sensors.

The connectors between the device and the sensors have been designed with RJ45 keeping in mind that we need secure and standardized cable replacement for interconnection, which all our customers can find anywhere in the world.

For our projects with the device, our operating systems are integrated to be able to perform OTA and rollback of the operating system, being able to have unique control in environments with difficult access or massive deployments.

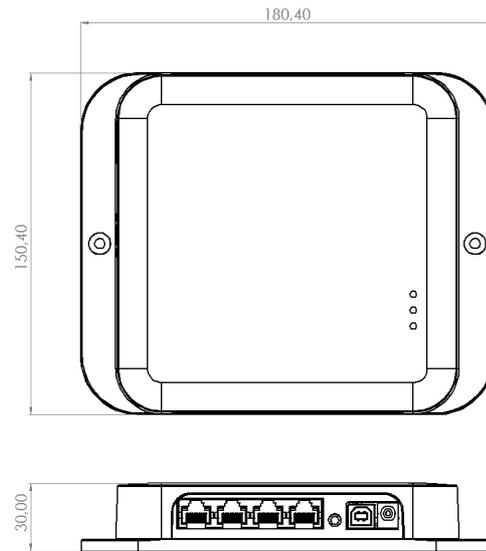
KEY FEATURES

Gateway Sensors	Gateway can control up to 8 connected sensors in real time. The microcontroller is connected to the CPU to be able to handle IO readings in any of its 8 ports independently or coordinated from any software in the operating system.
Linux Embedded	The device accepts almost any distribution of Linux embedded, including Linux adhoc projects with Yocto and the like, the most commonly used being the following: <i>Debian Yocto Based – Raspbian – Kali Linux – Pidora – Windows 10 IoT Core – Ubuntu Core – RISC OS – SARPi (Slackware ARM for Raspberry Pi) – Arch Linux ARM – FreeBSD – RetroPie.</i>
Arduino & Raspberry Pi	The RPI can load the FW from the AVR and even the OS can be delivered with Arduino installed and configured to directly flash the AVR.
Backup Power Supply	The power system of this equipment has been designed for intensive use and allows a power backup between POE and power source. The logical and operational part of the gateway (central unit) is powered by + 5v from Power Over Ethernet (POE) and / or from a 12v (>2,5A) power source, making the switch between one power source or another if one fails. The logical part of the sensors is also fed at +5v from POE or power source, but they have an actuator output that provides direct +12v (200mA) if the Gateway has a power source connected.
OTA Support	The base operating system that we supply with the devices is a Raspbian-based system (always the latest stable version), with support for Mender.io, this system is capable of updating a single file, a directory, a package or the entire system.
One Cable Interconnect	The system is designed so that from a single centralized point where the Gateway is installed, we only have to deploy a single UTP cable to the sensors, making it a very easy to install and robust system. The UTP cable itself contains data channels and power channels for the sensor, and even its load.
POE Reset	By disconnecting the power from the Ethernet (POE) it can cause a restart of the system, being a great option in places with difficult access, or to maintain large device networks.

PRODUCT DETAIL



DIMENSIONS



GENERAL SPECIFICATIONS

Model	BD-IOT-GTW
Colour	Black, White
Dimensions	180mm x 150mm x 35mm
Weight	190gr
Operating Temperature	-25 °C to 45 °C
Storage Temperature	-40 °C to 70 °C
Standards	In the process of obtaining certificates in different market areas.

ELECTRICAL SPECIFICATIONS

Rated Voltage DC±10%	12Vdc
Rated Current	2 A
Output Voltage DC±10%	12Vdc
Rated Frequency	50 Hz
POE IN Voltage	48Vdc
Power Supply	12Vdc 3A
PSU cable type	IEC 60950-2
PSU Connector type	IEC 60950-1 J8 TYPE
PSU recommended	MEAN WELL GST36B12-PIJ

COMUNICATIONS

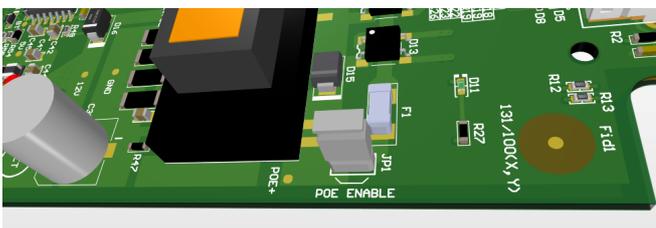
USB Programming type	USB type B
USB host type	2 x USB type A
Ethernet	1 x Rj45 Ethernet UTP cable
I/O Ports	8 x Rj45 Data Bus
HDMI Optional	1.3 a - 1920 x 1080 (720p)

CPU

Module	Raspberry Pi Cm3+ DDR2-SODIMM
Processor	ARM v8 BCM2837B0
Memory	1Gbyte LPDDR2 RAM
Storage	eMMC Flash 16GB
SO	LINUX
Microcontroller	Atmel AT-mega 328p
I/O	

SELECTORS

POE ENABLE closing circuit, the POE is activated.



CONNECTIVITY

Power

5mm jack power input.
12VDC 3A is required.
Recommended Power Supply: Mean Well GST36B-12-P1J

USB Serial Port (config)

USB type B. Is an emulated serial port with which you can access the system console

Mode Button (Reset)

Reset button.
Pressing 5seconds produces a system restart. If it is pressed less than 5s it does not reset and can be used to activate anything else necessary,
Since it is connected to an RPI GPIO17.

2x USB Host

2 USB type A ports that allow connecting USB devices to the system. It also provides 5V power up to 200mA per port.

Sensor Ports (0 to 7)

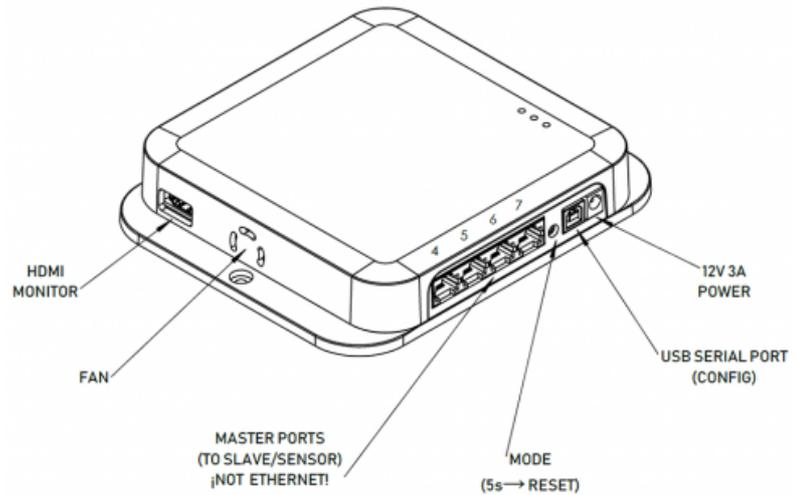
8x RJ45 ports that allow interconnection between the Gateway and the sensors (BD-IOT-Series)

Ethernet & POE

RJ45 connector to provide the connectivity system.
Ethernet 10 / 100Mbps full duplex automdix.
Standard POE 802.3af up to 12W.

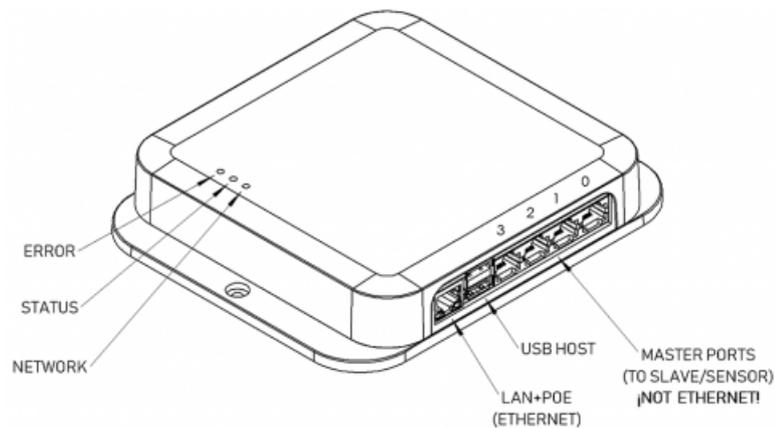
Led Indicators

Error – Status – Network



Ethernet & POE

Led Indicators



EXPANSION SOCKET

Pinout GPIO EXP

1 - USB4 (Power control)	18 - GPIO7	35 - GPIO20
2 - USB5 (Power control)	19 - GPIO10	36 - GPIO39
3 - USB5 D-	20 - GPIO9	37 - GPIO40
4 - USB5 D+	21 - GPIO30	38 - GPIO21
5 - USB4 D-	22 - GPIO11	39 - GPIO22
6 - USB4 D+	23 - GPIO16	40 - GPIO41
7 - GND	24 - GPIO14 - UART1 TX (USB/UART CONSOLE RX)	41 - GPIO26
8 - +12V	25 - GPIO32	42 - GPIO25
9 - +3.3V	26 - GPIO15 - UART1 RX (USB/UART CONSOLE TX)	43 - GND
10 - +5V	27 - GPIO34	44 - GND
11 - GPIO2 - I2C SDA	28 - GPIO33	45 - GND
12 - GPIO1	29 - GPIO36	46 - +1.8V
13 - GPIO4	30 - GPIO35	47 - GND
14 - GPIO3 - I2C SCL	31 - GPIO18	48 - GND
15 - GPIO6	32 - GPIO37	49 - GND
16 - GPIO5	33 - GPIO38	50 - GND
17 - GPIO8	34 - GPIO19	

