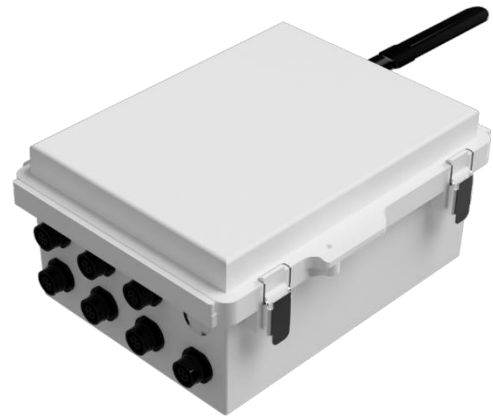


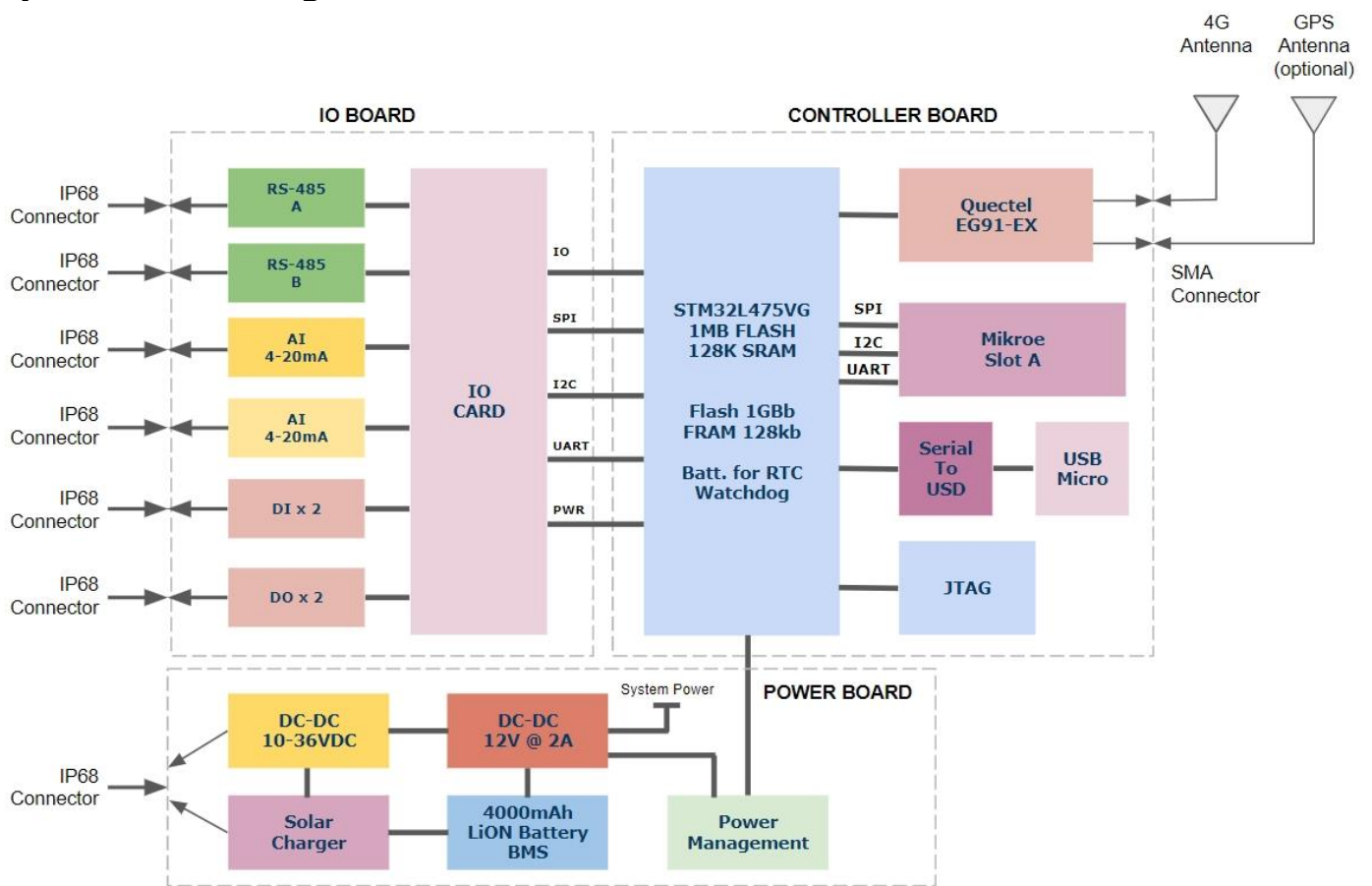
MYIOTA IOT SENSOR HUB

SKU ID : **IOT-SensorHub-MIYOTA-V1**

MYIOT IOT SENSORHUB is 100% design, developed, certified and manufactured within Malaysia by MYIOTA member. Build with various members contribution and integration, this IOT Sensor Hub design to leverage the need of IOT SENSOR which have local support and System Integrator customization. For developer that have means to custom develop the firmware, MYIOTA open up the SDK for this kit to allow future customization.



System Block Diagram



Application Areas



Smart Agriculture



Smart Building

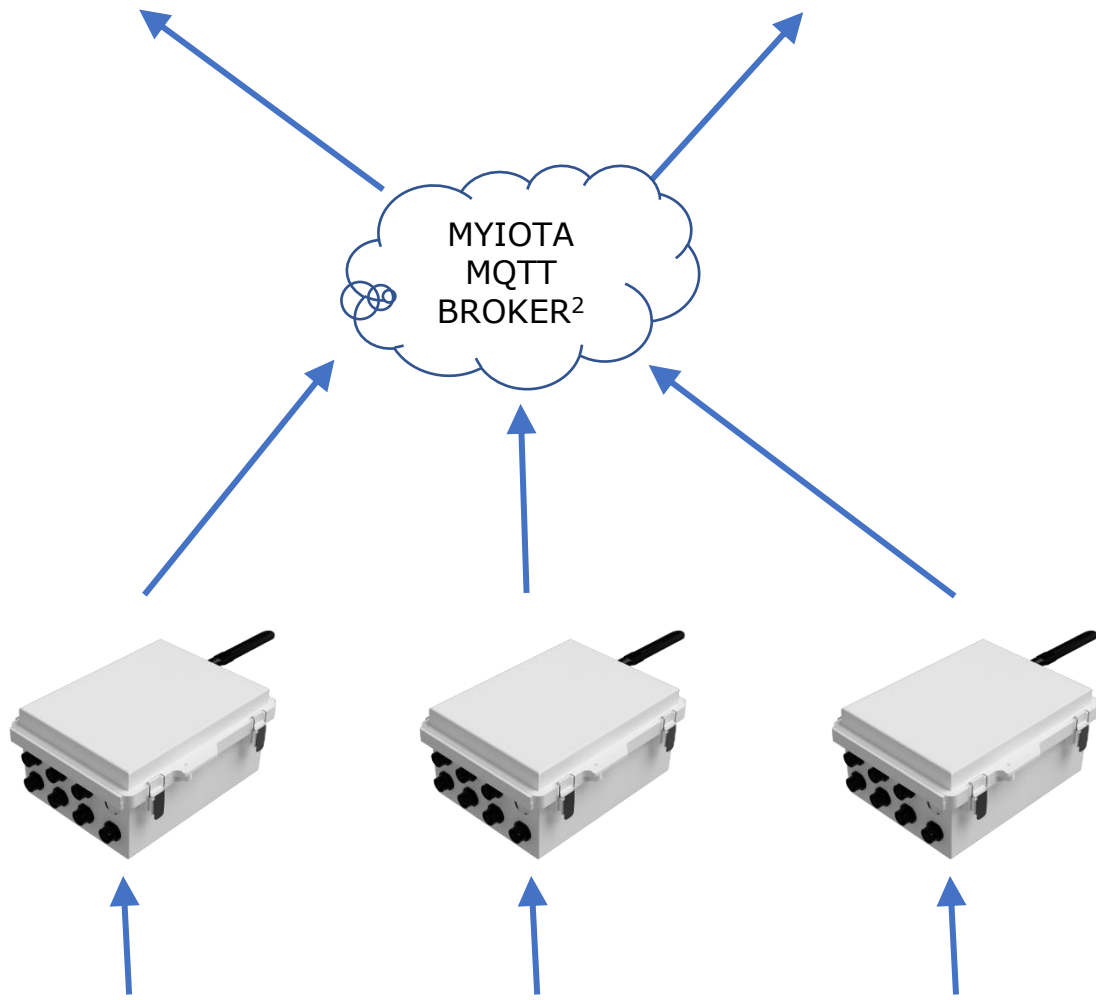


Smart Manufacturing



Smart City

MYIOTA IOT SENSOR HUB Application Diagram



TEMPERATURE	TEMPERATURE 3 FOOT PROBE	WATER TEMP	RTD HIGH TEMPERATURE	RTD LOW TEMPERATURE	DUCT TEMPERATURE	WATER DETECT	WATER DETECT PLUS	WATER ROPE	HUMIDITY	GRAINS PER POUND	MOTION DETECTION
OPEN / CLOSED	DRY CONTACT	CARBON MONOXIDE	LIGHT DETECTION	LIGHT METER	ASSET	SINGLE-INPUT PULSE COUNTER	MULTI-INPUT PULSE COUNTER	MAGNET DETECTION	ACTIVITY DETECTION	ACTIVITY VIBRATION COUNTING	ACTIVITY TIMER
ACCELEROMETER TILT	IMPACT DETECT	G-FORCE SNAPSHOT	G-FORCE MAX & AVG	0-1 mA CURRENT METER	0-20mA CURRENT METER	RESISTANCE	0-2 VDC VOLTAGE METER	0-5 VDC VOLTAGE METER	0-60 VDC VOLTAGE METER	0-600 VOLT VOLTAGE METER	0-600 VOLT VOLTAGE METER
24-000 VAC VOLTAGE DETECT	1-50 VDC 1-50 VOLT DETECT	0-1000 PRESSURE METER	0-10000 PRESSURE METER	BUTTON	COMPASS	FLEX	SEAT OCCUPANCY	AIR FLOW DETECTION	LIQUID LEVEL	VEHICLE DETECTION	VEHICLE COUNTER

Note : 2 – Free for use for 12 months with maximum 300 PUB and SUB per day, typically uploading of sensor data every 15 min.

MYIOTA IOT SENSOR HUB

Technical Specification

System

Core Processors	STM32L475VG, Cortex-M4 MCU 80 MHz with 1 Mbyte of Flash memory, 128 KB SRAM
Flash Memory	1GB FLASH (QSPI Interface) - W25N01GVZEIG (20,000 sampling log, 100,000 activity log)
FRAM	128Kbit FRAM (SPI) - FM25V01A-GTR (system parameter storage)
Real Time Clock	Real-Time Clock with Li-On battery (Coin Cell)
Watchdog	Dedicate WD Chip which will do FORCE SYSTEM RESET upon MCU hang.
Connector	IP68 Connector (PVC type)
Size	160mm x 210mm x 100mm
IP Rating	IP65 , with optional PROTECTIVE VENT, VENTILATION LOUVER, ADHESIVE PROTECTIVE VENT FILTER, VENTILATION or OUTDOOR ROOF

Power Supply

Main Source	External 12-32VDC or 15W to 50W Solar Panel Interface
Backup Source	Internal 4000mAh Li-ON Battery with Battery Management System
Sensor Supply	5V, 12, 24VDC (selectable via internal jumper) 100mA max.

Sensory (IO Card)

Rs-485	2 channels, MODBUS-RTU
Analog In	2 channels of 4-20mA , 12 bit, 3-way isolated, 24V sensor power loop (max.25mA per channel) or single ended with 20-ohm impedance.
Digital Input	2 channel opto-isolated, can be configured as contact input or pulse input. (100Hz)
Digital Output	2 channels , NC-C-NO

Uplink

Main Connection (Default)	4G CAT-1 GSM modem (LTE EG91-EX)
Secondary Connection	MikroE Socket
Uplink protocol	MQTT, MQTTS, RESTful HTTP or RESTful HTTPS

Firmware Development Toolchain

For members who sign up for our SDK, we provide default C-Code architecture with relevant libraries coded in STM32Cube IDE. (Firmware customization service provided by member)



MYIOTA IOT SENSOR HUB - MIKROE CLICK Board Add-On

This version of MIYOTA Sensor Hub has the option to add one MikroE Click Board from MikroElektronika. As of 20th Nov.2022 , MikroElektronika has 1293 types of boards covering 12 sectors.

CLICK BOARDS™ CATEGORIES



Wireless Connectivity



Display and LED



Storage



Interface



HMI



Audio and Voice



Sensors



Miscellaneous



Motor Control



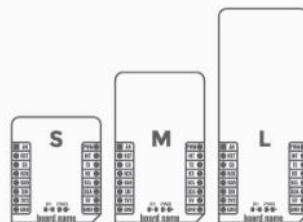
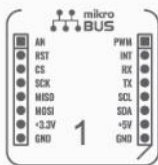
Clock and Timing



Mixed Signal



Power Management



Uniform connection interface mikroBUS™

To enable hundreds of Click boards™ to be connected to the microcontroller or microprocessor we have invented socket standard - mikroBUS. This uniform connection interface is allowing you to connect any Click board to a main board instantly. The standard specifies the physical layout of the mikroBUS™ pinout, the communication and power supply pins located on the main board as well as the matching pinout on the Click board itself.

Standardized size and shape

Click boards™ are a modular prototyping add-on board standard which revolutionizes the way users add new functionalities to development boards. They come in different flavors, however the standard specifies the size and shape of the add-on boards as well as the silkscreen used. Majority of Click boards™ are made to address one functionality and feature - one part per board, this allows you fast and easy evaluation of technology or comparison of parts at any time.

No soldering, no wires. Focus on what really matters

By sharing the same standardized pinout, mikroBUS (host) and Click boards (peripheral) are enabling you to evaluate, prototype and develop ideas in minutes without losing additional time on the hardware setup. This plug and play concept allows you not to worry about hardware and just focus on what matters, your idea!

More information

<https://www.mikroe.com/click>

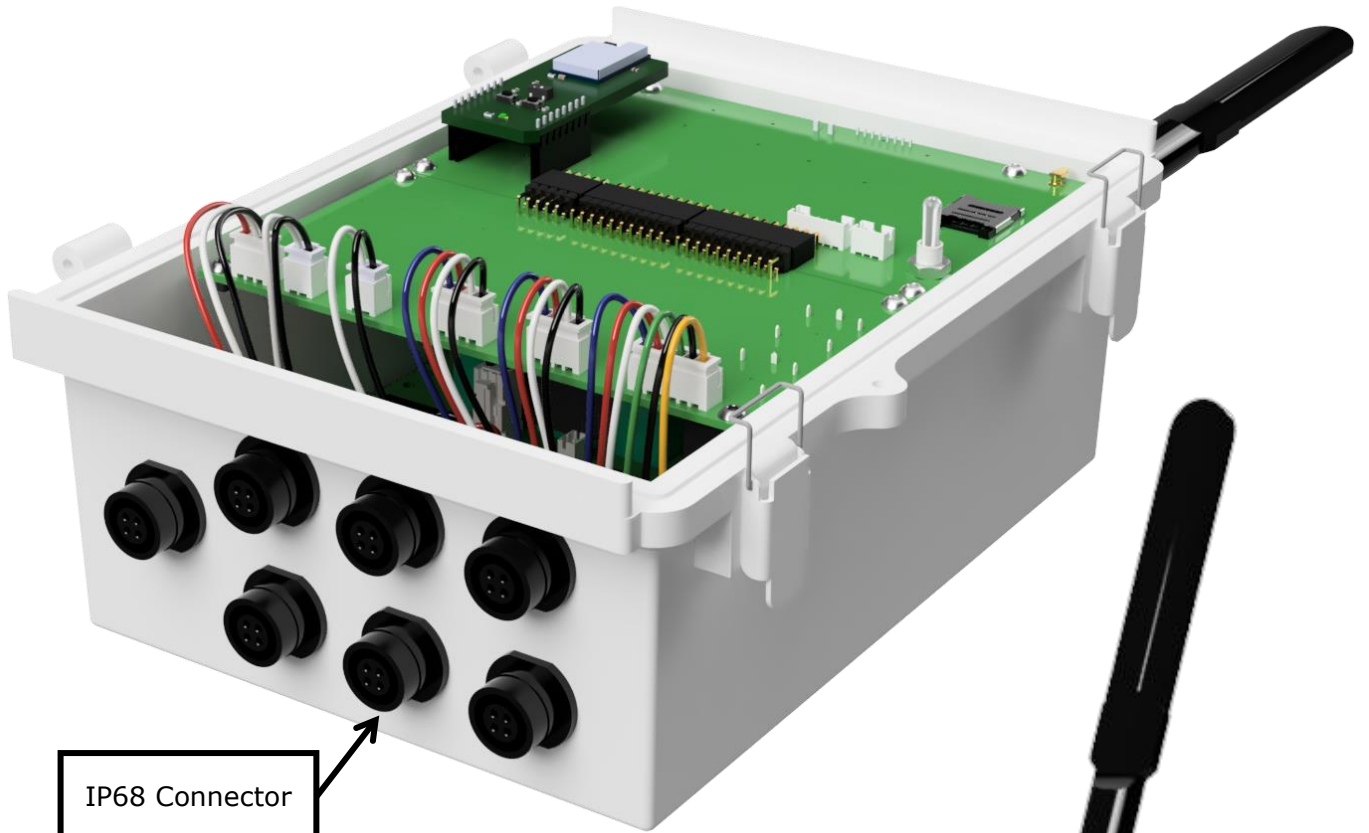
<https://www.mikroe.com/click-boards>

Important Note

Firmware needs to be edited to interface to the attached Click Board. Default firmware does not interface to any click board.

MYIOTA IOT SENSOR HUB

Images

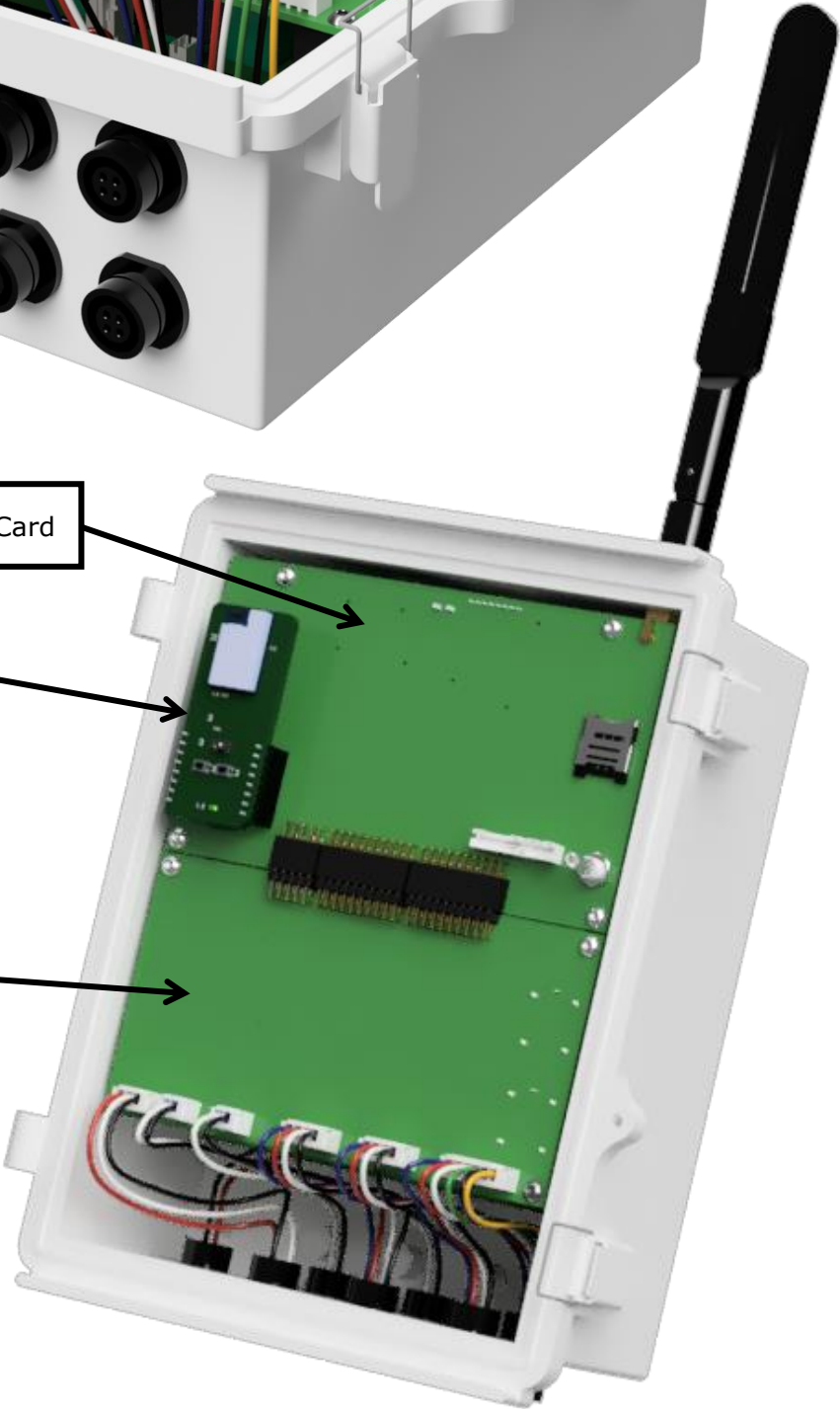


IP68 Connector

Controller Card

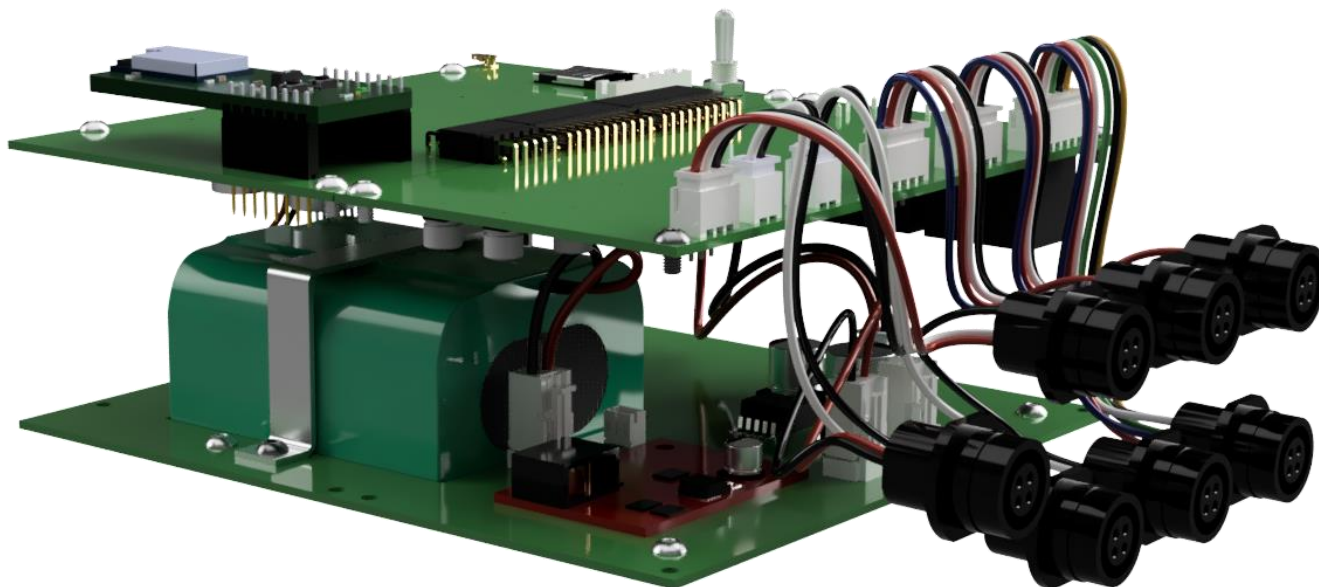
MikroE Click Card

IO Card

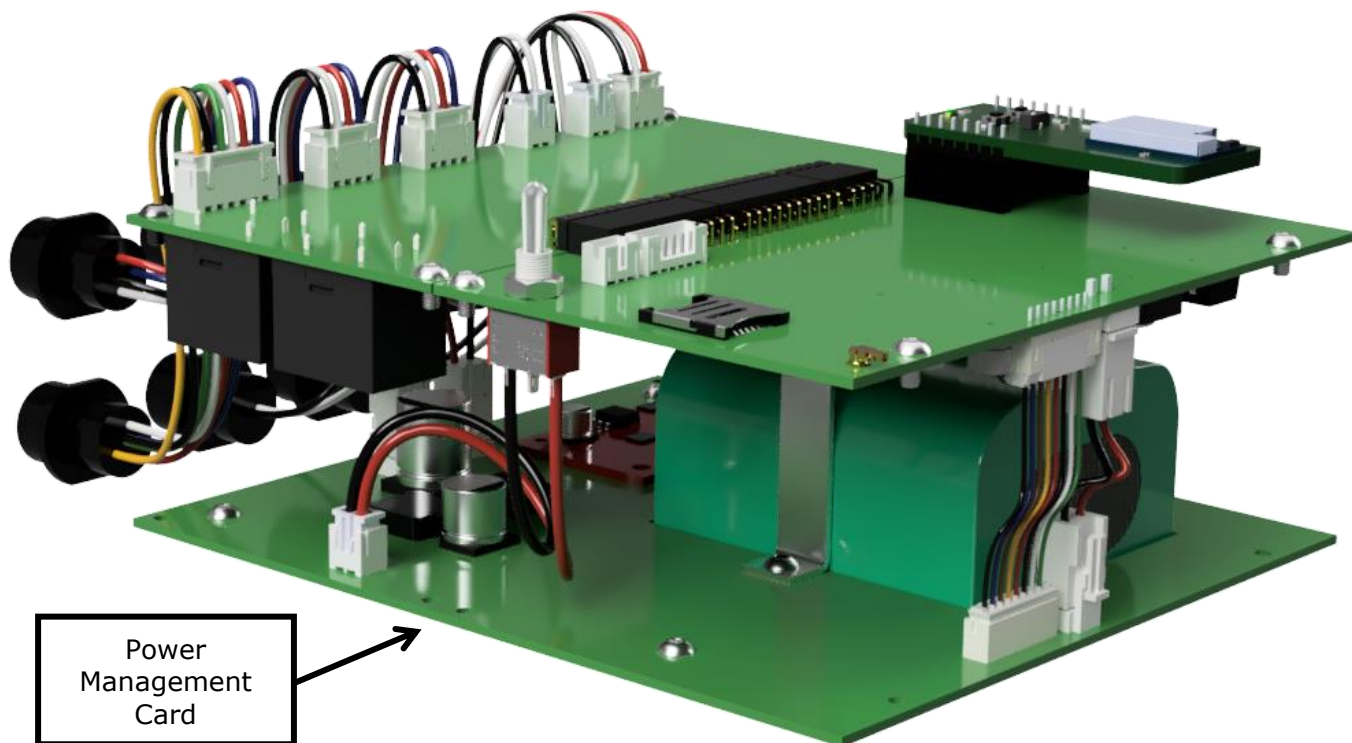


MYIOTA IOT SENSOR HUB

Images



Internal view showing Li-On battery with Solar Charger



Power
Management
Card

Internal view showing Power Relay's on IO Card