AiTHER SYSTEMS

Leading the small-scale energy storage revolution

Model #	Cabinets	kWh	Ah	Hours @ 7.5kW
iQM185	1	185	3600	24
iQM370	2	370	7200	48
iQM550	3	550	10800	72
iQMxxx	4+	735+	14400+	96+

iQM Microgrid System

The iQM microgrid system provides advanced energy storage that's scalable to support a dynamic load in a compact footprint.

- NFPA 855 compliant
- UL 1973 Battery Module Level
- UL 9540 Entire System Level
- GR-487 compliant
- 15-year limited warranty

Battery Management System

Energy Management System

Smart Meter

Edge Controller

Power Support System

Energy Storage Features

- Asset resiliency
- Peak shaving
- Load shifting
- Demand response
- Grid sell back
- Rate tariff optimization
- Utility grid tie
- Generator tie (cam locks)
- Renewable energy tie
- Safe battery chemistry
- Environmentally friendly
- Long lasting

Battery Management System

- Manages and protects the battery from damage
- Monitors charge/discharge rate and temperature to the cell level
- Local read/write and data collection from the BMS
- Communication and reporting back to the Edge Controller

Battery Specifications	
Dimensions (H×W×D)	6" × 7" × 38"
Rated Capacity	100Ah
Rated Voltage	51.2V
Max Charge Current	50A
Max Discharge Current	50A
Max Charge / Discharge Rate	0.5C
Average Charge Voltage	56.8
Discharge Cut-Off Voltage	43.2V
Working Temp Charge	0°C ~ 55°C
Working Temp Discharge	-18°C ~ 55°C
Integrated Heater Pad	If required
Battery Weight	88 LBS
Cycle Life Characteristics	≥ 5000

Cabinet Specifications	
Battery Cabinet (H×W×D)	83" × 30" × 47"
Approx. Weight w/ Batteries	3700 LBS

Safe Battery Chemistry

- **Stable cathode material:** The cathode material used in Lithium Iron Phosphate (LiFePO4) batteries is more stable than other types of cathode materials used in lithium-ion batteries, such as nickel manganese cobalt (NMC) or nickel cobalt aluminum (NCA). These materials release oxygen when heated, which can cause thermal runaway and combustion. On the other hand, LiFePO4 does not release oxygen when heated, which makes it more resistant to thermal runaway and combustion.
- **Non-flammable electrolyte:** LiFePO4 batteries use a non-flammable electrolyte that does not catch fire even if the battery is punctured or damaged. The electrolyte is a mixture of lithium salts and a solvent that is less volatile and less flammable than the organic electrolytes used in other types of lithium-ion batteries.
- **Low toxicity:** LiFePO4 batteries are non-toxic and environmentally friendly because they do not contain any caustic materials or dangerous odors. When disposed of properly, they do not pose any negative health or environmental hazards.

- **Built-in protection circuit:** The Protection Circuit Module (PCM) or Battery Management System (BMS) is an essential component that monitors and controls the voltage, current, and temperature of the LiFePO4 battery. It ensures that the battery operates within safe limits and prevents overcharge, over-discharge, short-circuit, and physical damage. The PCM or BMS also balances the voltage of each cell in the battery pack, which helps prolong the battery life and prevent cell damage.
- **Robust cell design:** LiFePO4 cells have a robust design that makes them more resistant to physical damage, such as impact or puncture. The cells are enclosed in a hard metal casing that protects them from external forces and prevents them from leaking or catching fire. Aither LiFePO4 batteries also have a built-in pressure relief valve that releases gas in case of an internal overpressure, preventing the battery from exploding.

Energy Management System

Every Microgrid System is accompanied with access to the EMS (Energy Management System). EMS offers features such as:

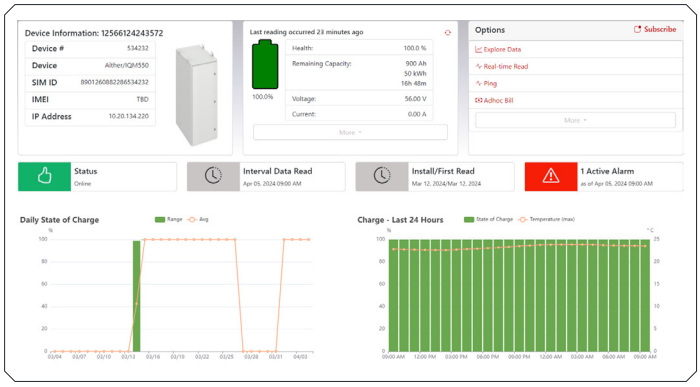
- Automated monitoring & data collection system
- Data presentation & analysis tool
- Alarming & notification engine
- Equipment maintenance tool
- Wide area supervisory control platform
- Time-of-use scheduling
- Energy deployment planning tool
- Financial reconciliation tool
- Fleet management system
- Energy cost analysis tool

Smart Meter

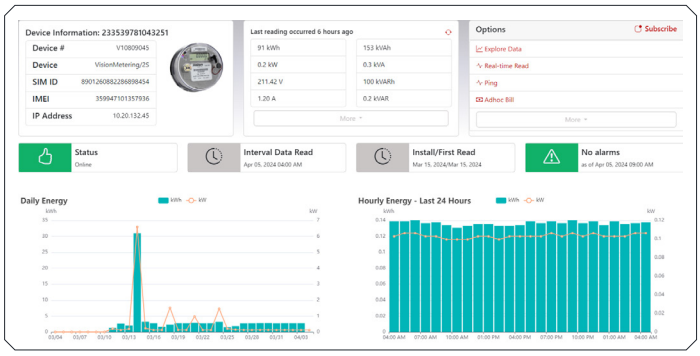
Smart metering allows you to produce, track, and forecast your energy needs with ease.

- Real Time Read and Control
- Historical Power Data
- Power Usage
- Remote Connectivity for E-Stop

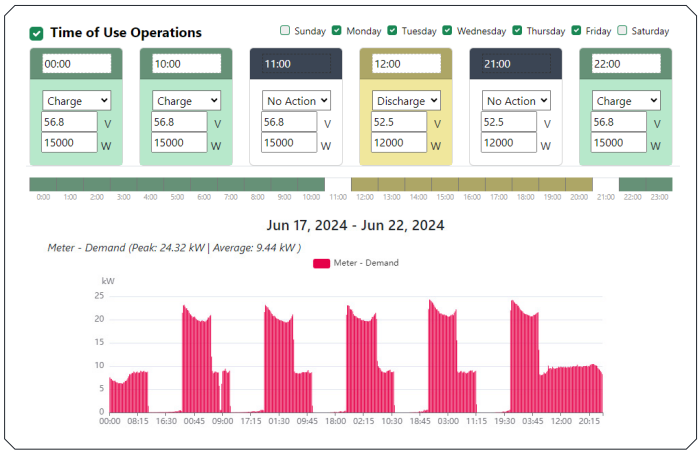
Battery Monitoring & Reporting



Utility Monitoring & Reporting



Peak Shaving / Time-of-Use (Utility)



Edge Controller

The Edge Controller is a Supervisory Control and Data Acquisition (SCADA) device that communicates with controllers, sensors, or devices within the Microgrid System and serves as a single point of communication with remote monitoring and management systems.

- **Remote access:** Provides remote access to logged and instant (real-time) data.
- **Remote configuration management:** Provides remote systems to configure itself and any connected controllers that allow configuration over local communication channels.
- **Log data:** Reads data from connected controllers or other devices and log this data to a local database.
- **Record and report alarms:** Records alarms generated by connected equipment or inferred from measurements.
- **Execute control commands:** Allows remote monitoring systems to initiate control commands on itself and locally connected equipment.
- **Control strategies:** Stores and executes control strategies and algorithms across connected devices by issuing control commands to the devices in response to locally acquired data and remote commands.
- **Manage cellular communications:** Communicates remotely via a cellular modem and ensures consistent and stable communication to the extent possible.
- **Ethernet switch:** Serves as an ethernet switch and creates a local area network with interconnectivity within a larger wide area network to allow local devices to communicate via wired TCP/IP connections and remote requests to be routed to the appropriate device.

Power Support System

Supported Configurations:

- ✓ 15kW power rectifier / inverter (can parallel up to 12x units)
- ✓ 48VDC output to batteries (rectifier)
- ✓ 240VAC output to load (inverter)
- ✓ 19.5kW solar input
- ✓ 240VAC Grid Tie + Gen Tie w/ Grid AC pass through

Certifications:

- NEC 690.4B & NEC 705.4/6
- Grid Sell Back — UL1741-2010/2018
- IEEE1547a 2003/2014
- FCC 15 Class B
- UL1741SB

Power Support System Specifications	
Power Encloser (H×W×D)	57" × 24.5" × 17"
Approx. Weight Empty	215 LBS
Mounting Type	Wall mounted / Pole mounted
Nominal AC Voltage	120/240, 120/208
Operating Temperature	-25°C – 55°C
Grid Frequency	50 / 60Hz
Max Continuous Power	15,000W
Max AC Output Current	62.5A
Max Grid Pass through	200A
Transfer Time	5ms
Nominal DC Voltage	48V
Operating Voltage Range	43 – 63V
Max Charge/Discharge	275A
Charging Efficiency	96.0%
Noise	<30 dB
Idle Consumption	90W