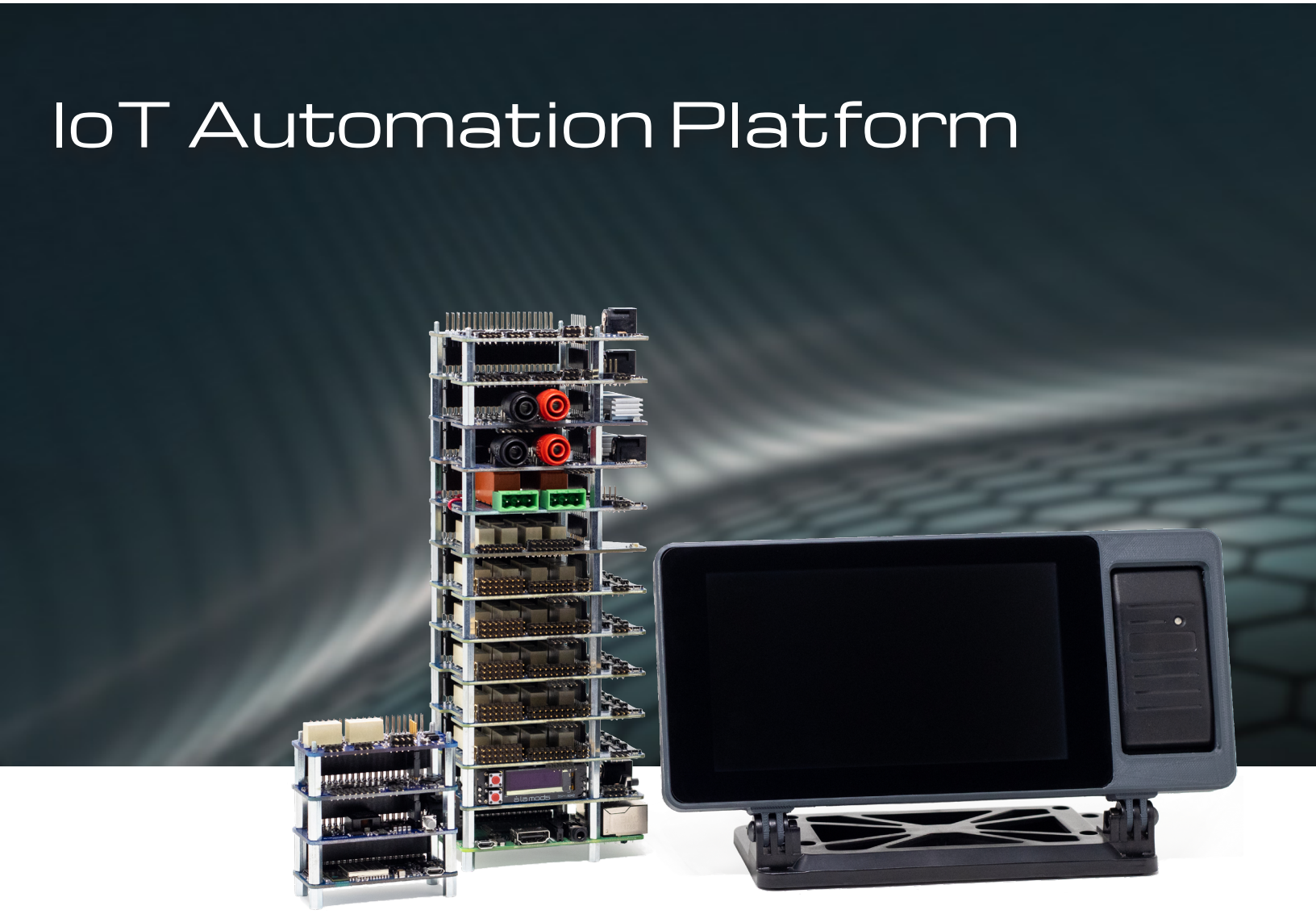
IoT Automation Platform



The Rapid Development of Automation

The à la mods IoT Automation Platform expands upon the extensive ecosystem of the Raspberry Pi, adding greater hardware capability. With a myriad of stackable add-on modules the ability to sense and control the real-world explodes with possibility.

The à la mods software framework coupled with the add-on modules makes creating custom automation apps effortless.

à la mods IoT Automation Platform is used for all types of automation including; Informational, Test, Home and Control.

Benefits

Rapid Customization

Seamless Network & Data Center Integration

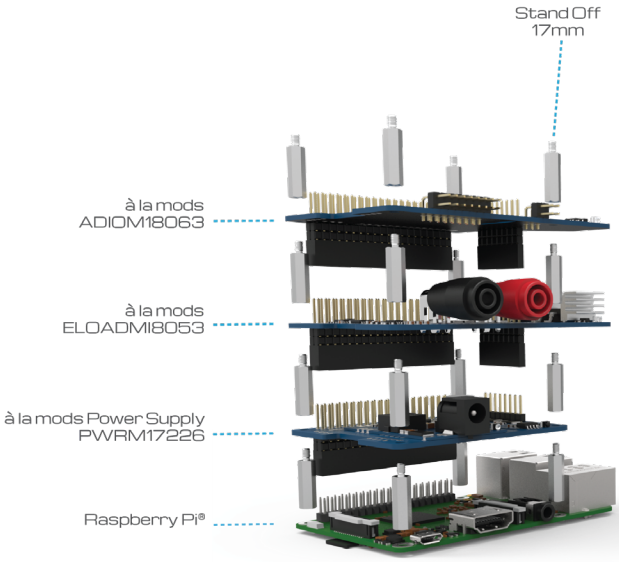
Lower Cost of Ownership

à la mods Stackable Advantage

The à la mods “M” series modules support up to 15 modules hosted by one Raspberry Pi® or equivalent SBC. It achieves individual control and data transfer via the GPIO bus by using signal lines to provide individual module addressing. This addressing allows the SPI interfaces to be shared among all modules.

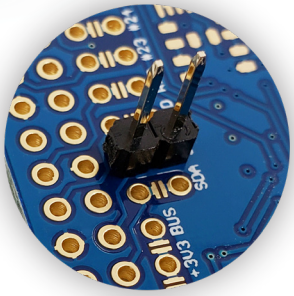
These modules are intended for the Industrial Internet of Things providing multi-functional control or measurement capability. Stack a mix of different types of modules and/or several of the same type to scale I/O.

The à la mods “Z” series modules are designed for use with the Raspberry Pi® Zero SBC providing a more compact and economical solution for remote sensing, control or home automation type applications.



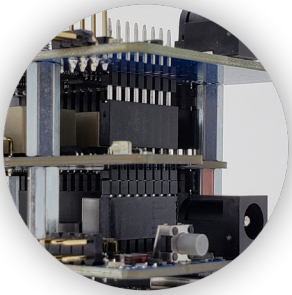
Moddable Design

All à la mods modules provide configuration options using a dual jumper option system. A simple solder bridge or dual pin header can be used for quick setup.



Auxiliary Power BUS

All à la mods modules provide access to a stacked auxiliary power bus that originates with the PWRM17225 and PWRZ19128 modules. This bus includes the 5V system supply, an additional 3.3V supply and direct connection to the external power source.



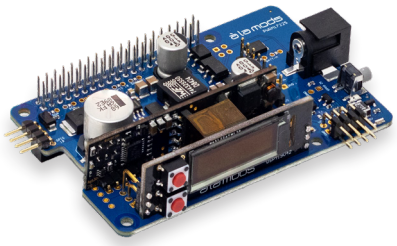
Addressable

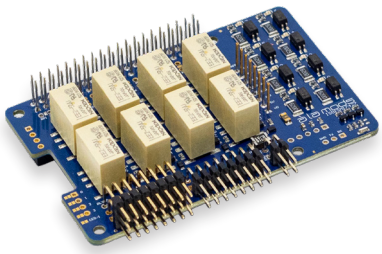
The “M” series modules employ a stack addressing mechanism that is achieved via a simple solder bridge jumper identifying each module with a unique address among 15 possible combinations.

ORDER INFORMATION

M Series Modules

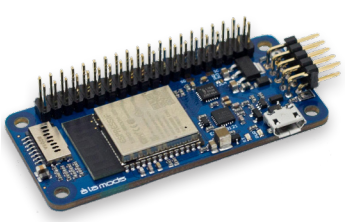
Part Number	Description	APB	Smart	Stack	Comm
PWRM17225-20W	20W Power Supply	X			
PWRM17225-20W-M	20W Power Supply w/ Power Monitoring	X			I²C
PWRM17225-20W-M-E12	20W Power Supply w/ 12V PoE Output	X			I²C
PWRM17225-20W-M-E24	20W Power Supply w/ 24V PoE Output	X			I²C
ISOIOM17427-4	8 Port Isolated I/O Module	X	X	X	I²C
ISOIOM17427-8	4 Port Isolated I/O Module	X	X	X	SPI
SERM17428	Multi-interface RS-232/TTL/USB/RS485 Serial Module	X			SPI
ADIOM18063-30	8 Port Differential Analog +/- 30V Input w/ Dual DAC Output	X	X	X	UART
ADIOM18063-15	8 Port Differential Analog +/- 15V Input w/ Dual DAC Output	X	X	X	SPI
THERM18451-8	8 Port K-Type Thermocouple Interface Module	X	X	X	SPI
THERM18451-4	4 Port K-Type Thermocouple Interface Module	X	X	X	SPI
FANCM19082	Triple Port 2/4 Wire Fan Controller w/ Thermal Inputs	X	X	X	SPI
NFETM19145	Triple Port NFET Low Side Switch Controller w/ Thermal Inputs	X	X	X	SPI
RADIOM19304-1	Single XBEE Radio Interface Module	X			UART

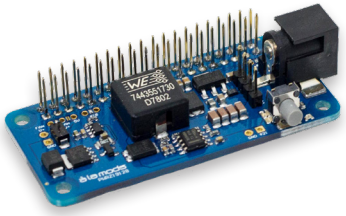


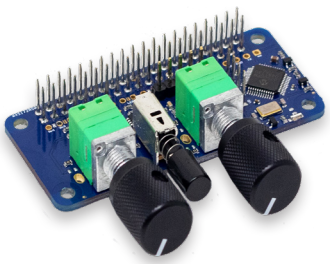


Z Series Modules

Part Number	Description	APB	Smart	Comm
ISOIOZ19112	Dual Isolated I/O Ports	X		GPIO
EMBDZ19121	Embedded Z ESP32 Host Controller	X	X	ALL
PWRZ19128-20W	20W Power Supply	X		
RBTOZ19261	Robot Controller w/ Dual Motor Controller w/ Servo and I²C Ports	X	X	SPI
RADIOZ19305	XBEE Radio Interface Module	X		UART
CTRLZ19331-P	Dual Potentiometer Input Controller	X	X	SPI
CTRLZ19331-E	Dual Encoder Input Controller	X	X	SPI
RS485Z19342	Serial RS485 Slave/Host Controller w/ PoRS485	X	X	ALL
CREADZ19355	Wiegand Protocol Card Reader Controller	X	X	SPI
PWR1Z19373-10W	10W Power Supply	X		
THERZ19381	Dual K-Type Thermocouple Module	X		SPI
MIKROZ19382	MikroBus Interface Module	X		Serial
ADIOZ19402-30	4 Port Differential Analog +/- 30V Input w/ DAC Output	X	X	SPI
ADIOZ19402-15	4 Port Differential Analog +/- 15V Input w/ DAC Output	X	X	SPI
CANBZ19421	CAN Bus Interface Module	X	X	SPI



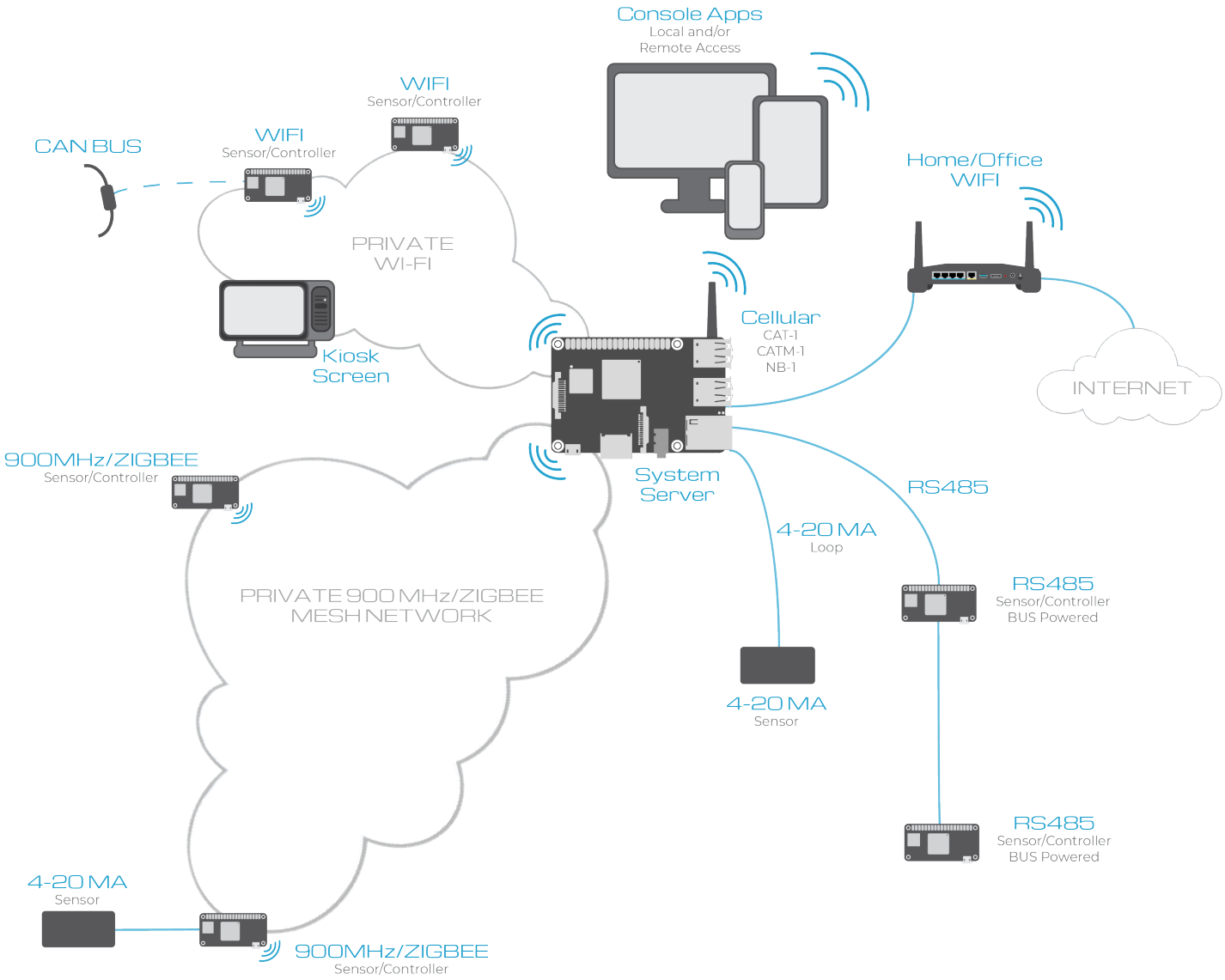




*See website for list of updated products: www.alamods.com/products.html

NETWORKING SOLUTIONS

à la mods provides a myriad of networking solutions, connection sensors and controls that work in almost any environment. Various wireless and wired technologies can be combined to meet any network need.



Supported Networking Technologies

Wireless

802.11 b/g/n wireless LAN
Bluetooth 4.1
Bluetooth Low Energy (BLE)
900 (MH_2) MESH
Zigbee
Cellular: CAT-1, CAT-M1, NB1

Wired

Ethernet
Serial: RS-232, TTL, USB, I2C and SPI
RS 485
CAN BUS
LIN BUS
4-20ma

SOFTWARE

Software Platform

Customize the stack functionality and create an interactive application UI rapidly using the existing à la mods software framework. It is built on top of the Node.js® and JavaScript environment which provides a flexible platform for developing networked systems and web-app user interfaces.

A simple à la mods API module is provided to access any stacked module.

SD Images enabled to start any project with the Raspberry Pi® and à la mods.

Software Technology

à la mods uses Node JS and Javascript primarily, but the same functionality can be created using a Python environment. Both technology platforms have access to all the Raspberry Pi functionality and the GPIO to access all of the à la mods additional capability.

Both software technologies have a world-wide eco-system of add-on modules and extensive community of support.

Resources

à la mods provides a host of software resources available online including;

-SD card images (Node JS Javascript Development Environment Ready to Go)
-Hardware Access Library
-Web App Template
-Documentation of each hardware module
-CAD Models of Various Stacking Case Components.

For a more complete list visit our website at: http://www.alamods.com/resources.html

ENGINEERING SERVICES

Custom Hardware Interfaces

made systems can design, develop and manufacture custom modules to interface to almost any system. We have engineering expertise in analog design, communication protocols, sensors, motor controls, LED lighting, power management and rechargeable batteries.

Custom Software & Firmware

made systems can design and develop various software systems including UI/UX design, backend server/database systems, information automation and test equipment control. made systems also designs and develops embedded control system firmware that drives the hardware modules.

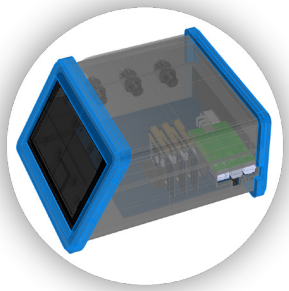
3D CAD Modeling & Custom Electronic Case Design

made systems can create 3D CAD models to quickly visualize a design. These models can be rendered using sophisticated material rendering software for stunning realistic images. These models can be turned into 3D printed prototypes then taken to production depending upon the specific needs.

Systems

Test System Automation
Kiosk Driven Test Equipment Setup & Control
Functional Test Fixture Design & Manufacture

Information Automation
Kiosk Driven Data Presentation Display



Controls
Industrial Equipment Control

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