

Nucleus Spec Sheet

PHYSICAL	
Dimensions	5.25" x 3.15" x 1.37"
Expandable Flash Memory	Micro SD Card
	Up to 32 GB
SIM Card	Standard Size
Interfaces	Ethernet Over RJ45
	Serial Over Terminals
POWER	
Input	3-30 V DC
	Solar Panel Compatible
Power	3 W
External Battery Backup	Lithium 57 Wh
INPUTS/OUTPUTS	
Digital Inputs	10 Channels
	3-30 V DC
Digital Outputs	5 Channels
	0-24 V DC Open Collector
Analog Inputs	4 Channels
	4-20mA or 0-24 V DC
HARDWARE	
Processor	Intel Atom Dual-core @ 500 MHz
RAM	1 GB
Flash Memory (On Board)	4 GB
Operating Temperature	0°C to 70°C
WIRELESS	
Cellular	3G AT&T
WiFi	802.11 a/b/g/n
	Dual-band (2.4 and 5 GHz)
	Access Point or Client Modes
Bluetooth	v4.0
GPS	L1 Spec
SOFTWARE/FIRMWARE	
MQTT	v3.1.1
Inductive Automation	Ignition Ready
Cirrus Link Solutions	Sparkplug v1 MQTT Compatible
OPCU-UA	Server
	Client
MongoDB or MySQL DB	Expandable with SD card
Modbus	TCP and RTU



Nucleus is an industrial internet of things (IIoT) gateway with built-in external interfaces and I/O. Whether it be a 4-20 mA transmitter or pulling data from an OPC-UA server, your data can be exposed in real-time through the cloud or local interfaces.

Cloud Ready

Nucleus comes pre-configured to publish all on-board I/O, cellular info, GPS info, configured Modbus, and OPC-UA devices to the Tyrion Cloud and to a local WiFi connection. This makes Nucleus the only true drop-in remote monitoring device.

Ultimate Scalability

Even without existing power or network infrastructure, Nucleus stands on its own as a solar-powered PLC, HMI, and cellular gateway. Connect it and others to a cloud or central server to have access to unlimited data and control from one location!

Lean and Fast with MQTT

Nucleus leverages the MQTT protocol to transmit huge amounts of data with minimal packet sizes. This reduces data usage, and lowers packet latency.

Fully Customizable

Nucleus supports custom network and user interface configurations supporting public or private cloud, WAN and LAN networks. User-programmable with third-party application support, Nucleus can be whatever you make it!

