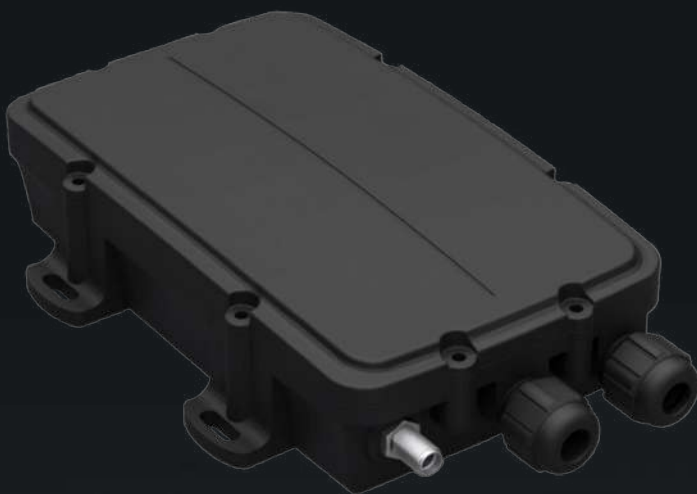


# Hawk

Cellular LTE-M / NB-IoT  
Satellite Version Also Planned

Status: *New Product Introduction*

The Hawk is a rugged and robust IoT data logger for a wide range of sensor and condition monitoring applications



## Plug-in I/O Interface

Plug-in cards define the 9 inputs/outputs, offering limitless options for interfacing to sensors such as SDI-12, I<sup>2</sup>C, 1-Wire, iButton, 4-20mA, RS-485, RS-232, Analog Inputs, Digital Inputs, Pulse Counting, Digital Outputs, Switched Power, and more



## GPS Location

On-board GPS for location plus optional \*cell tower positioning (\*planned)



## Task Management

Powerful task management allows you to schedule tasks or run tasks based on sensor thresholds and events



## Rechargeable LiPo Battery

Large 3500mAh rechargeable LiPo battery pack to support full-season deployments



## Multiple Power Options

Charge and operate the Hawk with 6-28V DC, including support for solar panels. The Hawk can also supply power to external sensors.



## Ultra-Rugged

Ultra-rugged and waterproof IP68 and IK08-rated housing with GORE® vent ensures device can withstand impact, fine dust, and brief submersion

# Connectivity

LTE-M / NB-IoT	Nordic nRF9160 Modem operates on all major global LTE-M and NB-IoT bands  Supported LTE bands:  LTE-M (Cat-M1): B1, B2, B3, B4, B5, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B66 NB-IoT (Cat-NB1/NB2): B1, B2, B3, B4, B5, B8, B12, B13, B17, B19, B20, B25, B26, B28, B66
SIM Size & Access	Internal Micro 3FF SIM

# Location

Module	Nordic nRF9160 internal GPS
Constellation	GPS
Tracking Sensitivity	-155dBm
*Location Accuracy	~3m CEP, 50%, GOS, Open sky
GNSS Assistance	GPS predicted ephemeris data for greater sensitivity and position accuracy
Low Noise Amplifier	GPS signals are boosted by a unique low-noise amplifier (LNA) allowing operation in low signal
Cell Tower Location	Optional cell tower positioning (planned)

# Power

Rechargeable Battery	3500mAh LiPo rechargeable battery
Input Voltage	6-28V DC (max) For continuous operation at high temperatures and high output load currents we recommend an input voltage of 12V or higher
Self-Resetting Fuse	Built-in self-resetting fuse makes installation simple and safe
Solar Power	Designed to optionally use an external 12V solar panel, 5W or higher
Maximum Power Requirement	4W excluding external sensor power draw

# Mechanics / Design

Dimensions	183 x 119 x 39 mm (7.20 x 4.68 x 1.54)
Weight	TBD
Housing	Non-branded housing for optional white-labeling
IP/IK Rating	Ultra-rugged and waterproof IP68 and IK07-rated housing ensures the Hawk can withstand impact, fine dust, and brief submersion
Installation	Multiple installation options for securing the device with screws, bolts, cable ties, rivets, and more. Includes 2 cable glands to allow for waterproof cable entry to the housing.
Operating Temperature	-20°C to +60°C (connected to external power)  At < -10°C and > +45°C the internal backup battery will not be charged as a safety precaution due to the dangers associated with charging batteries at extreme temperatures.

## Mechanics / Design *(continued)*

Cellular Antenna	Internal or External
GPS Antenna	Internal
3-Axis Accelerometer	3-Axis Accelerometer to detect tampering (planned)
Diagnostic LEDs and Button	2 Diagnostic LEDs and Push Button for testing and operational status
Flash Memory	Store months of records if device is out of cellular coverage
On-Board Temperature	The device reports internal temperature and prevents the internal battery from charging in extreme temperatures.  Internal temperature provides an indication of ambient temperature but may not always be precise.

## Interfaces

Digital Inputs	1 x Digital Input with configurable pull up/pull down 0-40V DC input range On/Off thresholds: On >2V, Off <1V Can be used for pulse counting (max 40Hz)
Plugin Board	The versatile and flexible Hawk architecture caters for plug-in cards that define the 9 inputs/outputs, offering limitless options for interfacing to sensors. See the current card list below or contact us to discuss your requirements.

## Smarts

Auto-APN	Auto-APN allows the device to analyze the SIM card and select the correct APN details from a list that is pre-loaded in the device's firmware
Battery Life and Voltage Monitoring	LiPo battery and external voltage readings for "Battery Low" and "Power Loss" alerts
Task Management	Powerful task management allows you to schedule tasks or run tasks based on sensor thresholds and events

## Device Management

Flexible Configuration	Configure sensor and position update rates
Device Management Platform	Manage, monitor, configure, debug, update, and restart devices remotely from our cloud-based device management system
Configuration App	Configurable with DMLink provisioning tool

## Integration

Third-Party Integration	TCP Direct or HTTPS Webhook
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## Security

Data Security	Military-level AES-256 Encryption from device to Device Management Platform to protect the integrity and confidentiality of telematics data. Data forwarded to third-party systems is sent via HTTPS for end-to-end security.
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## Warranty

Manufacturer's Warranty	Two-year manufacturer's warranty. Exclusions apply.
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## Certifications

Please visit <a href="https://support.digitalmatter.com">support.digitalmatter.com</a> for a full list of compliance specifications and documentation for your region	<b>LTE-M / NB-IoT</b> - FCC, CE, ACMA
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## I/O Card Options

The Hawk's sensor interfaces and protocol are managed by "I/O Cards" - a range of plug-in Input/Output cards standardized for common applications. See the current card list below or contact us to discuss your requirements.

### AgTech1

Digital Inputs	1 x Digital Input with configurable pull up/pull down 0-40V DC input range On/Off thresholds: On >2V, Off <1V Can be used for pulse counting (max 40Hz)
Digital Outputs	1 x switched ground
I <sup>2</sup> C	Yes
SDI-12	Yes
Switched Power Out	3.3V switched power for sensors
Switched Sensor Power	5V or 12V selectable power for sensors
1-Wire® or iButton®	Yes
4-20mA	1 x 4-20mA input

### AgTech2

Analogue Inputs	4 x Analogue Input (0-30V range)
Digital Outputs	1 x switched ground
SDI-12	Yes
Switched Power Out	3.3V switched power for sensors
Switched Sensor Power	5V or 12V selectable power for sensors
1-Wire®	Yes

## I/O Card Options *(continued)*

### RS-1

Analogue Input	1 x Analogue Input (0-30V range)
Digital Inputs	1 x Digital Input with configurable pull up/pull down 0-40V DC input range On/Off thresholds: On >2V, Off <1V Can be used for pulse counting (max 40Hz)
Digital Outputs	1 x switched ground
RS485	Yes
Switched Power Out	3.3V switched power for sensors
Switched Sensor Power	5V or 12V selectable power for sensors
1-Wire® or iButton®	Yes
4-20mA	1 x 4-20mA input

\* Positioning accuracy specifications are provided by the GNSS supplier and reflect ideal conditions. Device configuration, installation, environmental conditions, augmentation services, and many other factors may lead to variations in positioning accuracy.

### New Product Introduction

All new product statements contained herein that are not statements of historical fact, including statements that use the words “to become,” “will,” “designed to” or other similar words or expressions, that describe Digital Matter’s hardware, software or its management’s future plans, including hardware features, components, housing and stock availabilities, are “forward-looking statements.”

Such forward-looking statements involve known and unknown risks, uncertainties and other factors. Please use caution when making purchase decisions at this stage.