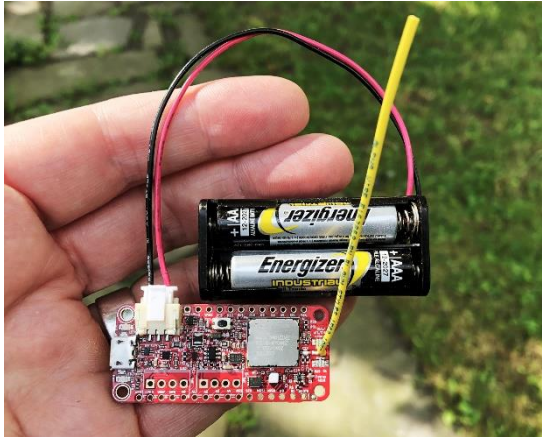




Catena 4618 Integrated IoT Node



The MCCI Catena® 4618 is a complete single-board IoT device for LoRaWAN® technology projects.

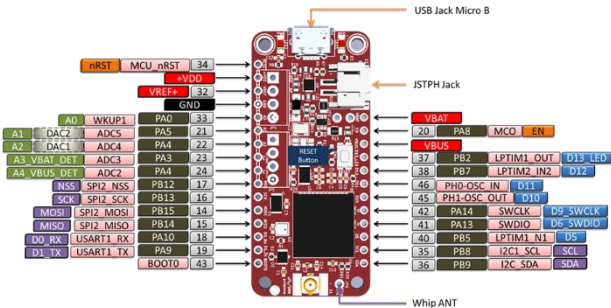
Based on the Murata [CMWX1ZZABZ-078](#), and designed to be compatible with the [Adafruit Feather](#) family of development boards and accessories, the Catena 4618 is a great platform for LoRaWAN investigation and deployment.

Rugged, lightweight and small, the 4618 needs no external components to measure and send temperature, humidity, and light, powered from USB or two AAA cells.

The board comes in two versions. The base version uses an SHT31 sensor. The precision version uses an SHT35 sensor, for extremely accurate temperature and humidity measurements.

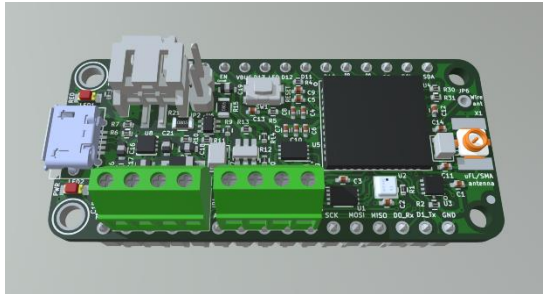
The Murata LoRaWAN module has the following features:

- STM32L082 CPU (Cortex M0+, 24 MHz, 192K flash, 20K RAM)
- Semtech SX1276 LoRa radio
- High quality RF engineering
- Certified for US and EU
- Compatible with IN866, AS923, AU915



The Catena 4618 design adds:

- Integrated sensors: Sensirion SHT31-DIS-F (IP66-rated rugged Temperature and Humidity) and Si-Labs Si1133 (light)
- 8K bytes FRAM for LoRaWAN provisioning info and frame counters
- 1M byte SPI Flash for bulk data storage, future FUOTA firmware storage, etc.
- Boost converter for powering from disposable batteries (such as 2x AAA cells) or from USB
- USB or SWD for download and debug
- Provisions for screw terminals for pulse, analog or digital I/O
- Dual high-side power switch isolates power for screw terminals from internal power.
- Support for whip, U.FL, or SMA antennas



The Catena 4618 is pin-compatible with the Catena 4612 family of boards. It's also compatible with the Adafruit Feather M0 family of boards (with some limitations because of functional differences between the STM32L082 CPU and the Atmel SAMD21 CPU used in the Feather M0).

MCCI provides a full Arduino board-support package and libraries to allow rapid prototyping and experimenting, including an open-source LoRaWAN stack. STM tools may also be used.

The Catena 4618 works well with and is tested with [The Things Network](#) (an open-source, user-owned IoT network based on LoRaWAN). It can be used with any LoRaWAN-compatible network (Actility, Helium, ChirpStack, machineQ, Senet, etc.) or with Sigfox.

Both hardware and software are open source and available on [GitHub](#).

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Specifications

CPU	STM32L082
Type	Cortex M0+
Arduino support	Yes
Flash/Program	192k
RAM	20k
Clock (min)	2 MHz
Clock (max)	32 MHz
Radio	Murata
Single board	Yes
Feather accessory compatible	Yes
Feather enclosure compatible	Yes
Battery type	Primary
Battery connector	JST-PA 2mm x 3 (center pin unused)
Operating Battery Voltage	3.6V..2.4V
Boost regulator	3.3V, software controlled
Sleep current	30 μ A
Temperature Sensor	SHT-31-DIS (4618) SHT-35-DIS (4618 M201)
Temperature Accuracy (worst case)	± 0.4 °C (-40..90 °C) (4618) ± 0.3 °C (-40..90 °C) (4618 M201)

Humidity Sensor	SHT-31-DIS (4618) SHT-35-DIS (4618 M201)
Humidity Accuracy	$\pm 2\%$ typ, $\pm 3.5\%$ max, 0..100% RH @ 25 °C (4618) $\pm 1.5\%$ typ, $\pm 3\%$ max, 0..100% RH @ 25 °C (4618 M201)
Operating humidity	0..100% (conformal coating option available for condensing environments)
PTFE membrane	yes
Light Sensor	Si 1133
Light Sensor Type	Illuminance
Light Units	W/m ²
Accuracy	Not specified
USB support	Full-speed device
U.FL	Standard
SMA	Optional
Soldered whip	Optional
Digital I/Os	19
Analog Inputs	5
Screw Terminals	2 (1x4) (optional)
Switchable Power	2
UARTs	1
FRAM	8k
SPI Flash	1 MB
Boot button	No

The Catena 4618 is a development board, suitable for incorporating into your own projects. It's also available as part of MCCI's pre-assembled indoor and outdoor environmental sensors.

Price and Availability

The Catena 4618 starts at \$49 qty 1, and varies based on options and quantity order. For more information, please contact MCCI at sales@mcci.com, Twitter [@MCCI](https://twitter.com/MCCI), <http://www.mcci.com>.