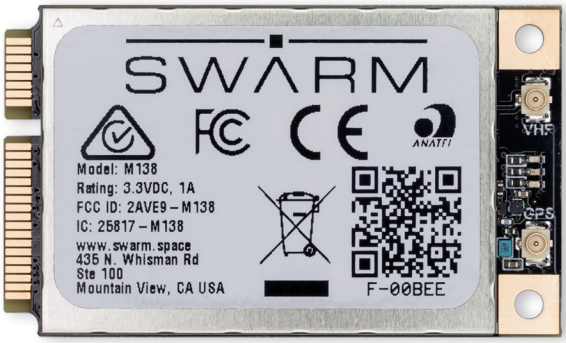
PRODUCT OVERVIEW

Swarm M138 Modem



1.2 in
30 mm

KEY FEATURES

- Remote 2-way data transfer from anywhere on Earth via the Swarm constellation
- mPCIe connection provides simple integration with a PCB
- Compact, lightweight, and low-power
- Wide input voltage (3.0 V to 5.0 V)

The Swarm M138 Modem transmits and receives satellite data to and from Swarm's space network and is designed to be embedded into a third-party product. It is suitable for a variety of low-bandwidth, latency-tolerant use cases: from tracking vehicles, ships, and packages to relaying sensor data for agriculture, energy, and industrial IoT applications.

SMALL SIZE & SIMPLE INTEGRATION

The M138 is a miniaturized module that is designed to be embedded into any new or existing PCB design. The M138's standard mPCIe form factor makes for easy integration and replacement. It communicates via a standard serial UART or a developer-provided PC interface with a USB-to-serial converter.

EASY TO RETRIEVE DATA

Swarm backend systems can support delivery of customer data via a REST API or Webhook to/from the Swarm cloud or user email, text message, AWS, or Slack.

LOW POWER

The Swarm Modem supports a number of low-power modes which can can be triggered for wake-up via built-in timer, external GPIO, or via serial command.

CONTACT

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COMPONENTS	GPS, VHF radio with integrated T/R switch, U.FL connector for GPS and VHF antennas, ARM Cortex-M4 processor, indicator LEDs, 3.3 V serial UART interface, 3.3 V GPIO
SENSORS	Onboard GPS (lat/lon/alt), CPU Temperature
DIMENSIONS	51.0 mm x 30.0 mm x 5.3 mm
MASS	9.6 g
POWER	**Sleep mode (3.3 V):** 80 µA (max) **Receive mode (3.3 V):** 26 mA (typ), 40 mA (max) **Transmit mode (3.3 V):** 850 mA (typ), 1000 mA (max)
ENVIRONMENT	Operational: -40 C to +85 C Storage: -40 C to +85 C
COMMAND INTERFACE	3.3 V Serial UART
BIT RATE	1 kbps
FREQUENCY	137-138 MHz (downlink) 148-150 MHz (uplink)

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