



ModuSense

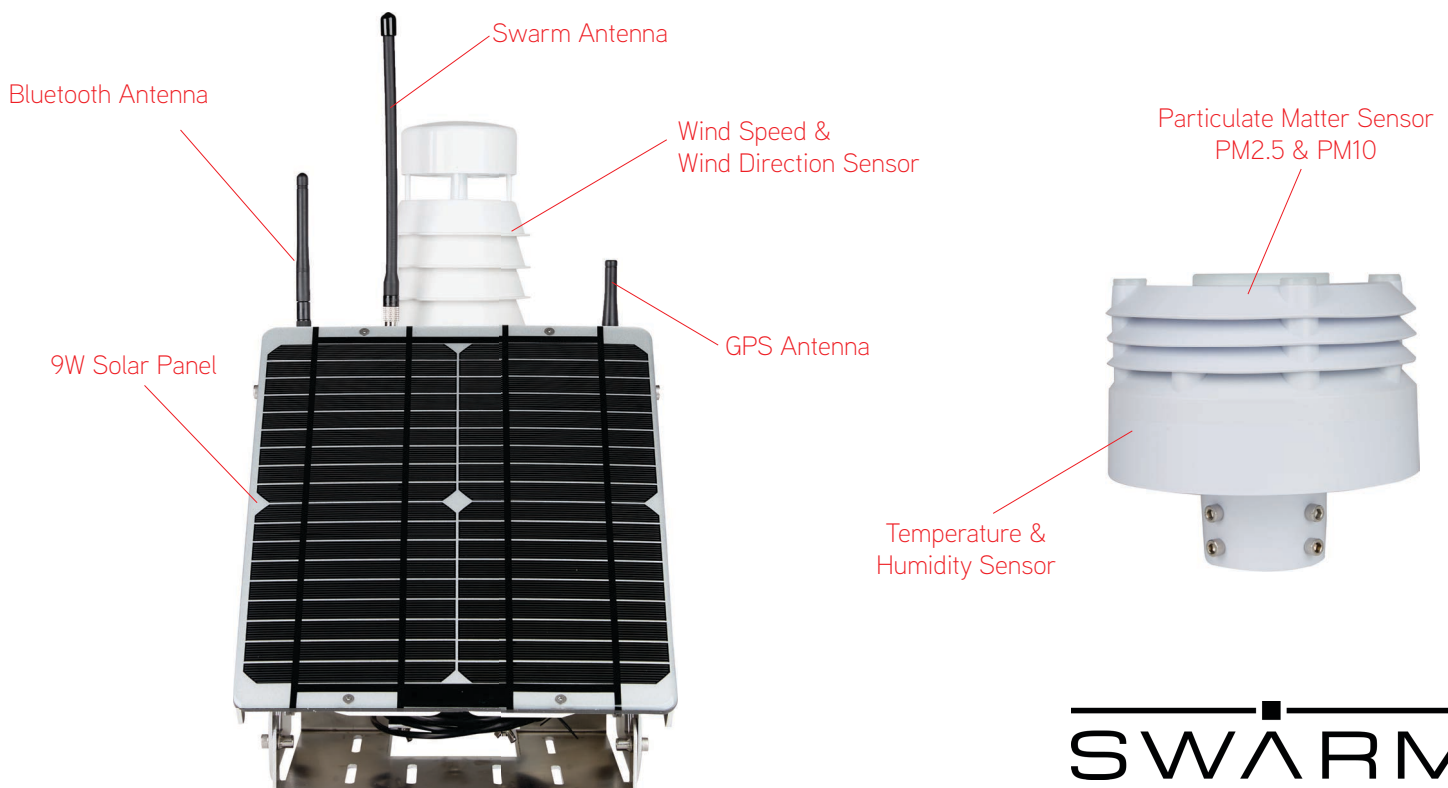
IIoT Air Quality Station

The ModuSense IIoT Air Quality Station is a ready-to-deploy cellular or satellite-connected environmental monitoring solution with a focus on air quality. It comes pre-configured with the required industrial-grade sensors as well as low-cost communications options providing global connectivity and reliability.

Leveraging the latest in cellular communications technology, the LTE version of the Weather Station supports long-range and lower power LTE CAT-M1 data connections, designed specifically for IoT devices.

To make things easy, the Cellular and Swarm Satellite fees are included in the annual Data Platform subscription cost. Options ranging from simple OEM Data Broker message routing through to full dashboard and analytics. Using the IIoT Gateway could not be easier, simply deploy the unit and data will flow.

Swarm provides affordable satellite connectivity for IoT applications, particularly in remote regions that lack reliable access to the Internet.



SWARM
Certified Product



IIoT Air Quality Station Specifications

MODELS		BDL-AQ-L2-1.x.x	BDL-AQ-S2-1.x.x
Model Reference		IIoT Weather Station LTE (CAT-M1)	IIoT Weather Station Satellite (Swarm)
Cellular Communications		Global LTE-M (CAT-M1/NB1) U-BLOX SARA-R410M-02B Bands: 1*, 2, 3, 4, 5, 8, 12, 13, 18, 19, 20, 25, 26*, 28 (* roaming bands)	n/a
Satellite Communications		n/a	SWARM TILE01 137-138MHz Downlink / 148-150MHz Uplink
Model Reference		IIoT Weather Station Satellite (Swarm)	
Satellite Communications		SWARM TILE01 with 2-way 137-138MHz Downlink / 148-150MHz Uplink	
Processors & Memory		Arm® Cortex®-M4 NOR Memory IC 32Mb, SPI - Quad I/O	
Included Sensors		GPS, Power, Temperature, Humidity, Wind Speed & Direction, PM2.5, PM10	
GPS Module		Sierra Wireless XM1210, TCXO. GPS+Glonass, GPS+BeiDou, GPS+Galileo. Signal used for both position information and accurate time sync for data records.	
Charge Circuit & Battery		Tracking onboard battery voltage, along with the status output of onboard solar charging circuit in order to give a clear indication of how well the internal battery is charging.	
Temperature & Humidity Particulate PM2.5/PM10		Resolution: Temperature: 0.01°C, Humidity: 1%, Particulate: 1 ug/m ³ Accuracy: Temperature: 0.3°C, Humidity: 3%, Particulate: 10 ug/m ³	
Wind Speed & Direction		Resolution: Speed: 0.01 m/s, Direction: 0.1 deg, Max Speed: 60 m/s Ultrasonic Sensor Accuracy: Speed: 0.5 m/s, Direction: 3 deg	
Bluetooth Host		U-BLOX NINA B3, v5.0 (Bluetooth low energy) nRF52840	
Power Supply		Built-in 6000mAh Li-polymer Battery Charging Voltage: 4.2V, Rated Voltage: 3.7V, UVLO at 3.4V	
Solar Panel		Epoxy encapsulated Monocrystalline, 9W Nominal output	
DC Input & Charging		18~30VDC, 2A Max Current, MPPT Charger (19.4Vmp), Optional 12v DC Battery Input	
CONNECTORS			
Antenna - Cellular		Female SMA, Multiband Whip Antenna	n/a
Antenna - Satellite		n/a	Female SMA, Swarm Antenna
Antenna - GPS		Female SMA, GPS/GNSS Whip Antenna	
Antenna - Bluetooth		Female SMA, Bluetooth Whip Antenna	
DC Input		IP68 Circular Connector Socket, paired with solar panel cable	
PHYSICAL DESCRIPTION			
Assembly at 45° (L x W x H)		448x260x210mm (without antenna), 545x260x210mm (with antenna)	
Particulate Sensor (Dia. x H)		175mm x 160mm, Requires 50mm hollow pipe for installation	
Weight (full assembly + antenna)		4.6kg excluding packaging	
ENVIRONMENTAL			
Operating / Storage Temperature		-20°C to 60°C / -20°C to 85°C	