



ModuSense

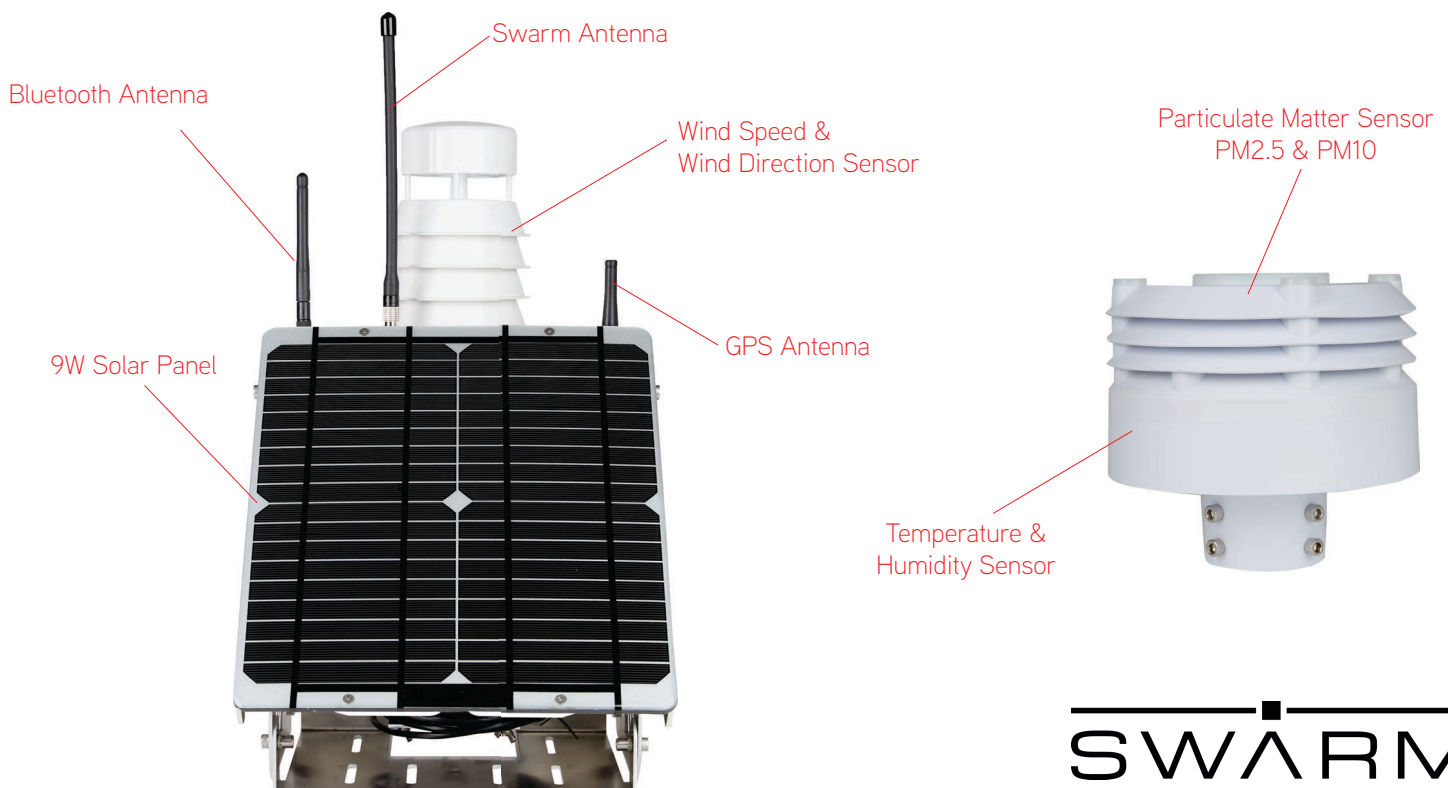
IIoT Air Quality Station

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



IloT Air Quality Station Specifications

MODELS	BDL-AQ-L2-1.x.x	BDL-AQ-S2-1.x.x
Model Reference	IloT Weather Station LTE (CAT-M1)	IloT 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	IloT 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	
<i>GPS Module</i>	Sierra Wireless XM1210, TCXO. GPS+Glonass, GPS+BeiDou, GPS+Galileo. Signal used for both position information and accurate time sync for data records.	
<i>Charge Circuit & Battery</i>	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.	
<i>Temperature & Humidity Particulate PM2.5/PM10</i>	Resolution: Temperature: 0.01°C, Humidity: 1%, Particulate: 1 ug/m ³ Accuracy: Temperature: 0.3°C, Humidity: 3%, Particulate: 10 ug/m ³	
<i>Wind Speed & Direction</i>	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	