



IOT GREENHOUSE QUANTUM & AMBIENT AIR FLOW MONITORING SYSTEM



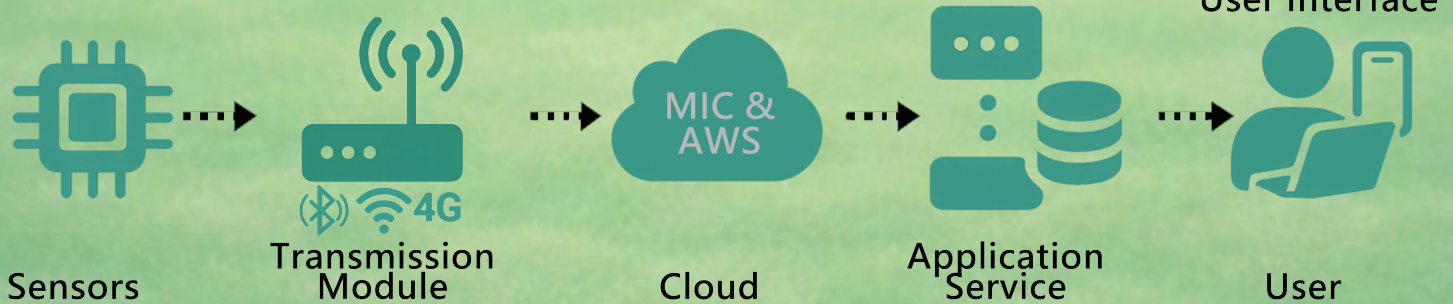
Quantum · CO₂ · Temp. RH. Pressure



Air flow

(IoT Devices) System Architecture

23.5°C
52% RH



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IoT GREENHOUSE QUANTUM & AMBIENT AIR FLOW MONITORING SYSTEM



Smart Handheld & Online Remote Monitoring Transmitter

Integrates key environmental parameters including quantum light (PPFD), wind speed, and CO₂ to monitor crop growth conditions in greenhouses and farms in real time.

With wireless transmission and cloud platform, farmers can remotely monitor environmental data and precisely control supplemental lighting and ventilation, improving yield, quality consistency, and supporting precision agriculture and sustainable management.



Quantum Light (PPFD) Application

Measures plant-usable light intensity (PAR 400–700 nm) to optimize supplemental lighting, shading, and planting density.

- Leafy vegetables: 200–400 $\mu\text{mol}/\text{m}^2/\text{s}$
- Fruiting crops: 600–1000 $\mu\text{mol}/\text{m}^2/\text{s}$
- Seedlings: 400–600 $\mu\text{mol}/\text{m}^2/\text{s}$

Wind Speed Application

Monitors greenhouse ventilation efficiency, improves temperature, humidity and CO₂ distribution, reduces disease risk, and enhances crop health and growth stability.



QUANTUM LIGHT MONITOR SPECIFICATION

Measured Parameters	Quantum Light (PPFD)
Application	Greenhouse / Indoor Farming / Smart Agriculture
PPFD Range	0 ~ 3,999 $\mu\text{mol}/\text{m}^2/\text{s}$
PPFD Accuracy	± 5 units or $\pm 5\%$, whichever is greater
Spectral Range	400 ± 10 nm ~ 700 ± 10 nm
Resolution	1
Output	Digital / Wireless Transmission
Display	Handheld Meter / Cloud Platform
Wireless	WiFi/4G
Power Supply	Rechargeable Battery (Handheld type) / DC Power(Transmitter)
Operating Temperature	0 ~ 50 °C
Operating Humidity	< 80% RH

AIR FLOW MONITOR SPECIFICATION

Measured Parameters	Wind Speed / Temperature / Humidity
Application	Greenhouse Ventilation / Livestock Houses / Smart Agriculture
Wind Speed Range	0.4 ~ 30 m/s
Wind Speed Accuracy	$\pm 3\%$ of Full Scale
Temperature Range	-15 ~ 50°C
Temperature Accuracy	$\pm 0.6^\circ\text{C}$
Humidity Range	5.0 ~ 95.0 %RH
Humidity Accuracy	$\pm 3\%$ RH (25°C, 30~95%RH)
Air Volume Measurement	Optional