

GBiot® FH0

GBiot-FH0 cost-effectively provides a high accuracy of measurement close to the continuous monitoring (official method) implemented by the MoE and local governments in Japan

Sensing System for Ambient Air Quality Monitoring



Power Requirements	100/200VAC (for overseas use) 12VDC (for solar operation)
Power Consumption	approx. 5W (10W at peak)
Data Communication	Wi-Fi (LPWA as an option)
Measurement Range /SO ₂	0 ~ 1000ppb
Measurement Range /CO	0 ~ 20 ppm
Measurement Range /O ₃	0 ~ 500 ppb
Measurement Range /PM	0 ~ 500 ug/m ³
Measurement Range /NO ₂	0 ~ 250 ppb
Weather Sensor	Temp. Hum. Press. WD. WS. Rainfall Solar Radiation UV int.
Sensor Life	1 ~ 5 years (depend on sensors and frequency of use)



Product Web Site



Video Introduction

※ Specifications of device and service are subject to change without notice



GREEN BLUE

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Comparison in PM2.5

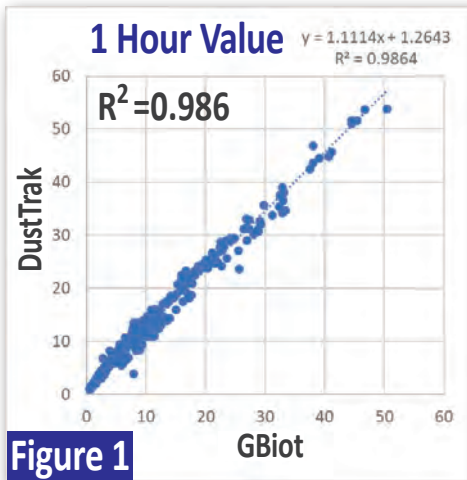


Figure 1

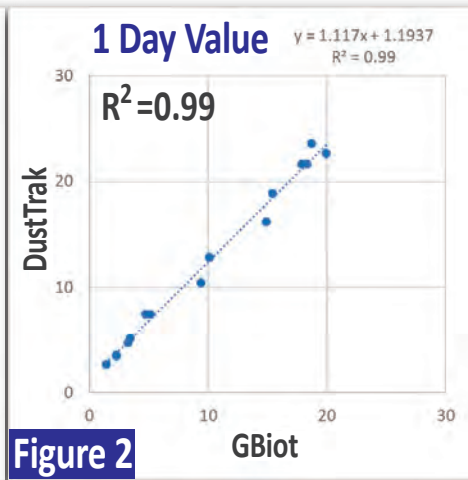


Figure 2

Comparison results between GBiot and a light scattering dust analyzer with the same measuring principle are shown below.

As can be seen from the scatter plots and regression equations, GBiot and DustTrak showed a high correlation of $R^2 = 0.98$ or higher.

※ DustTrak is a type of light scattering dust analyzer

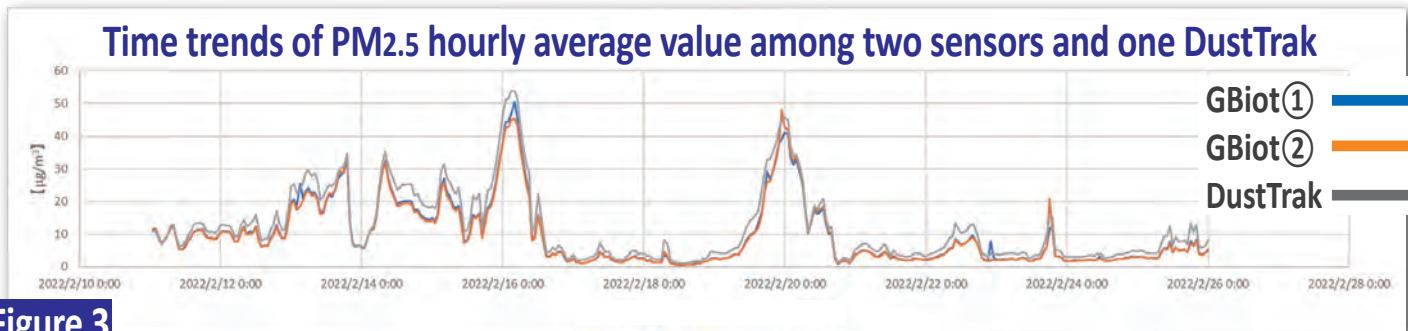


Figure 3

Comparison in O3

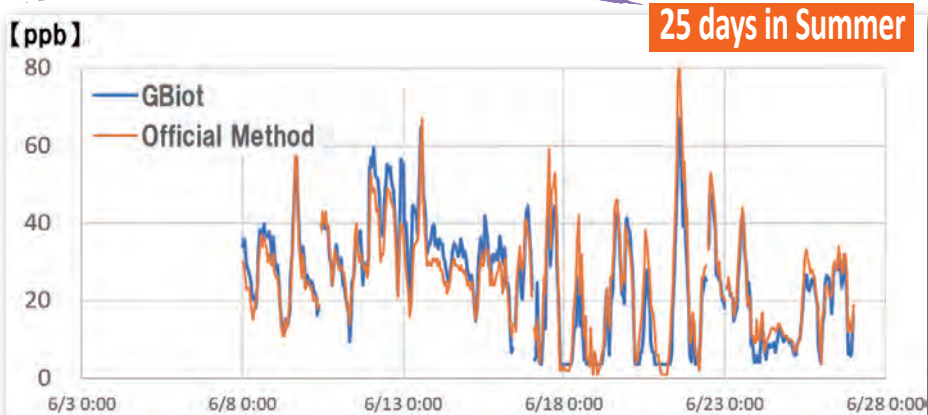


Figure 4

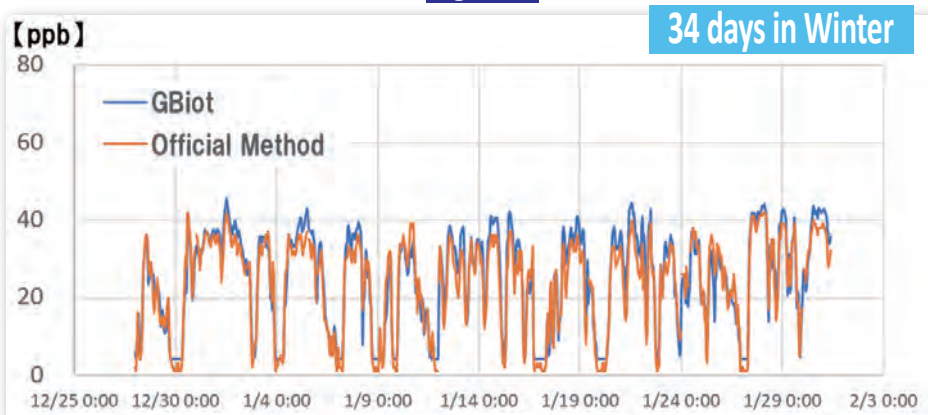


Figure 5

Comparison tests between GBiot and the official method for O3 were conducted this winter and summer at Green Blue's Tokyo office and surrounding monitoring stations.

As shown in the scatter plots and regression equations, the comparison between GBiot and the official method showed a high correlation of $R^2 = 0.9031$.

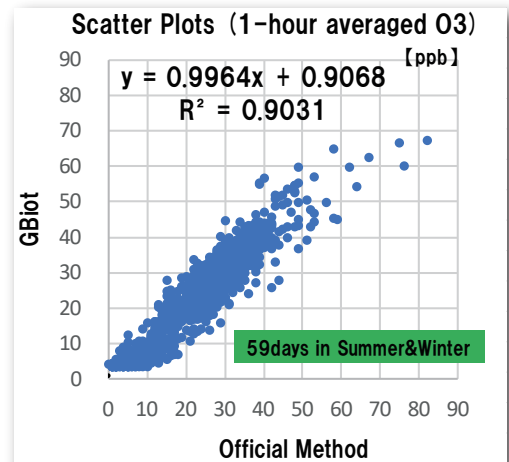


Figure 6

Installation and Maintenance



- Remote data check is possible at any point where online communication environment is organized.
- With GBiot's software, data can be easily graphed and downloaded.
- Video manuals are available to support the installation and maintenance of GBiot.



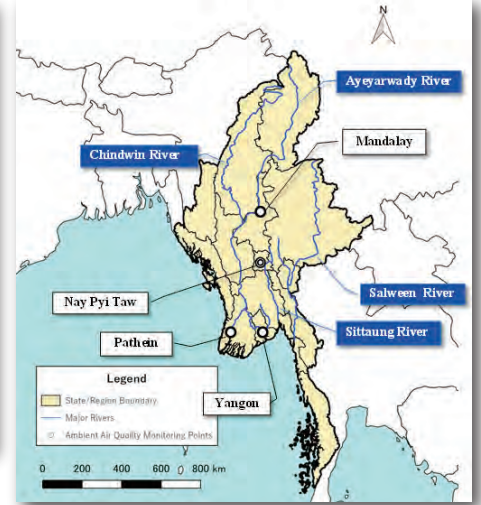
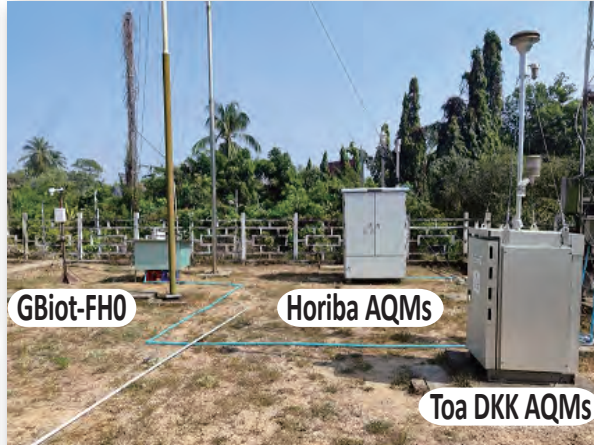
Considerations

Classification	Things to be considered in system construction and operation
Installation Site	<ul style="list-style-type: none"> • Representative point in the area, avoiding the influence of specific sources, air currents, and direct sunlight • Ensuring stability of equipment (e.g., fixation by anchors)
Power Supply	<ul style="list-style-type: none"> • Securing a stable AC power supply (including measures against lightning strikes)
Data Communication	<ul style="list-style-type: none"> • Ensuring a stable communication environment (e.g., Wi-Fi)
Security	<ul style="list-style-type: none"> • Prevention against theft of equipment and data
Maintenance	<ul style="list-style-type: none"> • Securing regular maintenance personnel and spare parts (frequency of work: once per 6 months to 1 year) • Emergency maintenance personnel and parts availability (irregular)
Calibration	<ul style="list-style-type: none"> • Calibration should be performed by running the GBiot in parallel with the reference instrument of the official method

Achievements

Observation of air pollution by GBiot in Myanmar

- Air pollutants such as PM_{2.5} and NO₂ have been observed by GBiot in 4 cities in Myanmar by a certain agency.
- Among them, in Yangon City, GBiot and two sets of official methods are being operated in parallel.

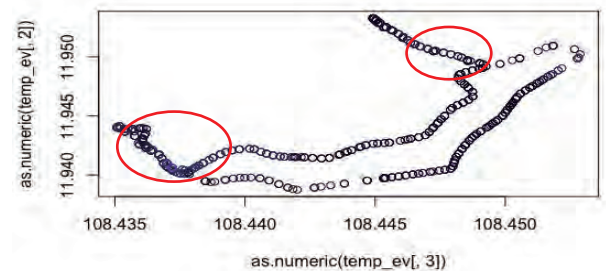


Parallel operation with GBiot and two types of AQMs in Yangon

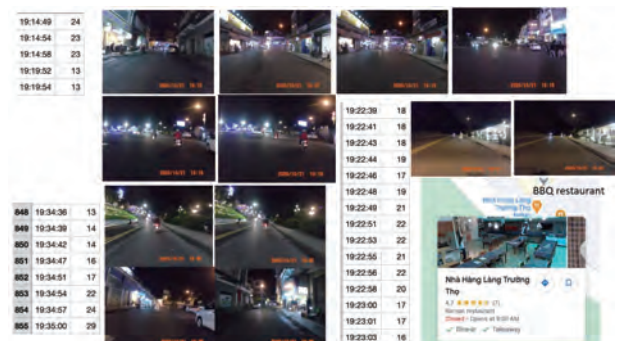
Practice for data collection and visualization of air pollution in Vietnam

- With the local counterparts, Green Blue collected data of air pollution and video around a lake in Vietnam using three monitoring stations and two motorcycles from September to November 2020. Based on data analysis and visualization, the situation of air pollution around the lake was grasped.

Note: Based on demonstration experiments of NICT xData platform



There is a correlation of "dinner time", "crowd", and "smoke" with PM_{2.5}



All the sensorboxes for air pollution used in the demonstration experiment are made by Green Blue