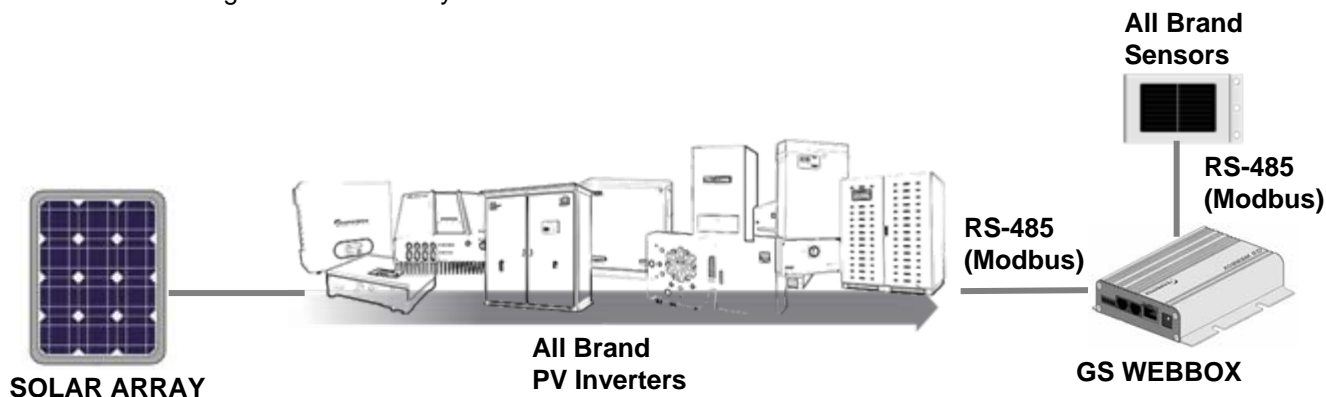




GS WEBBOX

Supports All Brand Modbus PV Inverter and Sensor

As different system integrators or distributors may use different brand PV inverter, GEOPROTEK developed a new revolutionary tool for the PV inverter that supports RS485 Modbus communication protocol. GS WEBBOX is allowed to establish a new model in the setup page and predefine the modbus data address of your PV Inverter. If you apply other irradiation or temperature sensors instead of using GS SENSOR BOX, you also can define the modbus data address of sensors by yourself. With the User-Define ability, it much increases the flexibility to satisfy the various requirements from different area. The GS WEBBOX make the remote monitoring much more easily and flexible.

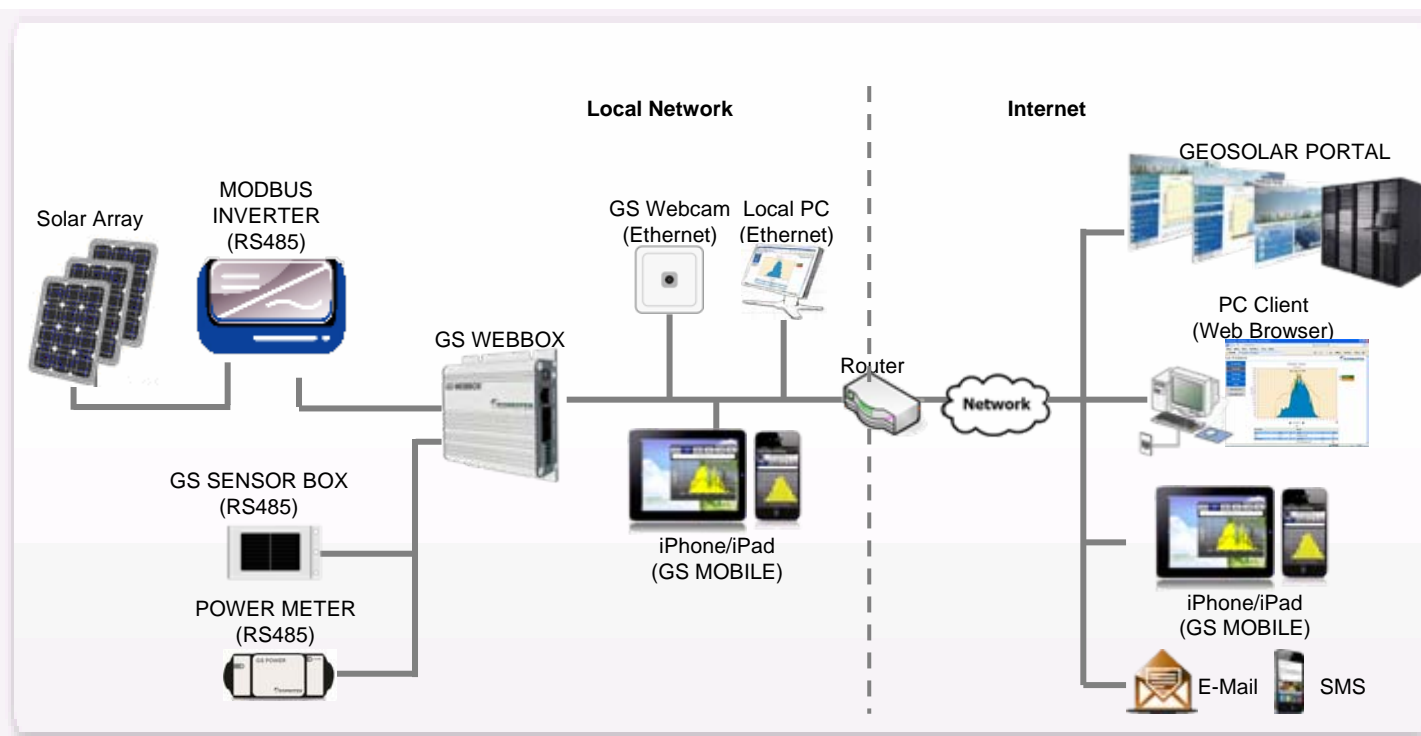


A Revolutionary Intelligence

On-Line Monitoring, Diagnosis, and Presentation



GS WEBBOX connect to PV Inverters via RS485 interface. The RS485 applied an isolated RS485 hardware to reduce noise and make the signal more stable. The sensor port on GS WEBBOX is used for communicating with for irradiation, temperature and consumption power measurement. Once it has been installed, it will collect the inverter and sensor data automatically and records current measurement values, yield data and events them into the SD card by .CSV file. In the local network, you can access the GS WEBBOX by web browser in your PC or use your iPhone, iPad to query the data and present it. Once you connect it to the internet, it will periodically send data to the GeoSolarPortal. System owners or system integrators can login with their account to view the on line data and advanced static graph function. The build in web server allow you to access the data via internet anywhere and anytime. You can view the data via web browser on PC remotely. Or view it via mobile device (iPhone or iPad) with GS MOBILE App through 3G connection. GS WEBBOX also build in optional GSM/GPRS module allow you send the data to GeoSolarPortal in the place where the internet is not accessible. As the PV plant is not function properly, the module will send the alarm SMS and e-mail to the system managers.



A Web Logger

User Defined PV Inverter Modbus Data Address

In order to maximize the flexibility, GS WEBBOX allow engineers to build up customized new models in the setting page. Engineers can select the corresponding data definition to existing data column, define the data address, length, switch high byte/low byte and also the start/stop characters. Also, engineers can define the event data bit address to existing event bit and define the corresponding alarm messages. By this way, system integrator or distributors can define their own model name for their existing PV inverter usage. GS WEBBOX save engineers development time and make the products more complete and flexible.

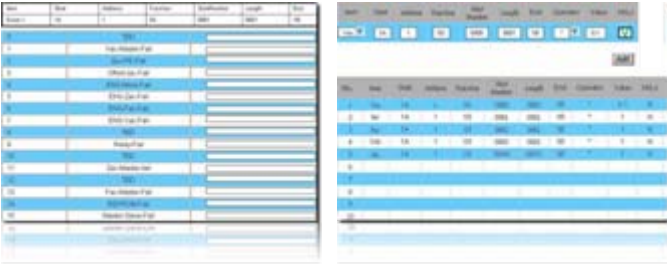
Visualization Yield Information

With the build-in web server, you can review the data report on GS WEBBOX by your web browser. As the GS WEBBOX will record data every 5 min (adjustable) as inverter in working, the web page will load data from the log files. The detail view shows the daily power curve graph with irradiation or temperature. The daily view shows the yield graph for 24 hours in one day. Also, it provide monthly, yearly and total graph for analyze the yield productivity. You can select different date to review and download the graph data to a .CSV file directly. You also can select individual inverter to review the Daily/Monthly/Yearly/Total report for comparing the yield efficiency.

Sensor and Power Meter Support

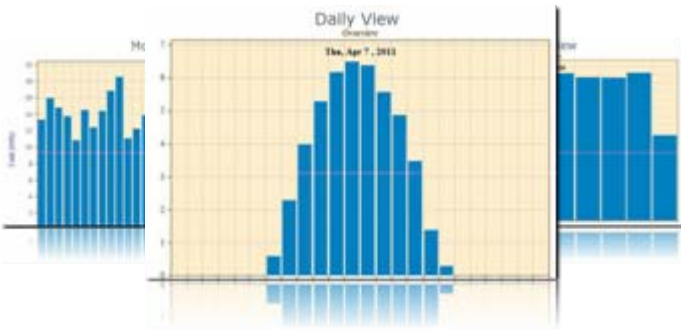
Irradiation ,Temperature, and Power Consumption Measurement

There is a sensor connection port that allow to connect additional irradiation, temperature, or consumption power meter. You can apply GS SENSOR BOX and GS POWER for the environment measurement. If customers have their own sensors or consumption meter, engineers can establish a new sensor model. In the sensor model setting, engineers can define the corresponding sensor data to the modbus data address. By this way, it can make the GS WEBBOX communicate with other brand sensors. All the data can be mapping into each inverter, show on the graph and also be recorded in .CSV file



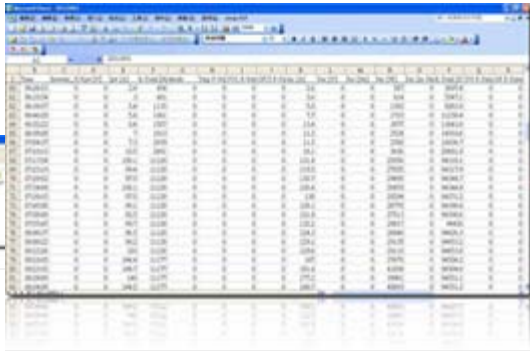
ID	Name	Address	Length	Unit
1	Grid Voltage (V)	0000	2	V
2	Grid Current (A)	0004	2	A
3	Grid Power (W)	0008	2	W
4	Grid Energy (kWh)	0012	2	kWh
5	Grid Frequency (Hz)	0016	2	Hz
6	Grid Power Factor	0020	2	
7	Grid Voltage (V)	0024	2	V
8	Grid Current (A)	0028	2	A
9	Grid Power (W)	0032	2	W
10	Grid Energy (kWh)	0036	2	kWh
11	Grid Frequency (Hz)	0040	2	Hz
12	Grid Power Factor	0044	2	
13	Grid Voltage (V)	0048	2	V
14	Grid Current (A)	0052	2	A
15	Grid Power (W)	0056	2	W
16	Grid Energy (kWh)	0060	2	kWh
17	Grid Frequency (Hz)	0064	2	Hz
18	Grid Power Factor	0068	2	

ID	Name	Address	Length	Unit
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16	Grid Energy (kWh)	0060	2	kWh
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18	Grid Power Factor	0068	2	



A Data Logger

Recording the Inverter and Sensor Data



GS WEBBOX has 2G/4G storage capacity to record the data from inverters and sensors. It will append new data to the existing daily detail file and automatically update the Daily/Monthly/Yearly files individually. For a PV site with 3 inverters, the estimated storage time of GS WEBBOX can up to 39 years. GS WEBBOX will also save the events once the alarm happened and buffer 7 days data for sending to GeoSolarPortal server. All the data will save in .CSV file format and can be downloaded via FTP client. System owners can download the data for backup and advanced analysis.

A Data Gateway

Central Administration for Multiple PV systems



www.GeoSolarPortal.com

GS WEBBOX is also a data gateway that can send data to GEOPROTEK portal server automatically. After registration, you can login with your ID and password on the GeoSolarPortal. GeoSolarPortal provides system owner to review the graph and report data. It also provides more advanced function that you can check the station status, compare the system or inverter performance for your plant. For system integrators or resellers, they can login with their account to exam all PV plants they had been installed at one time and to make sure all plants working in best status.



Data Presentation

Free App for Mobile Device and Tablet PC

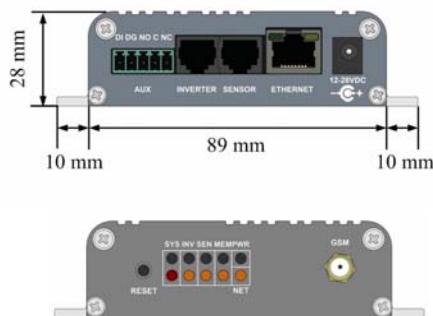
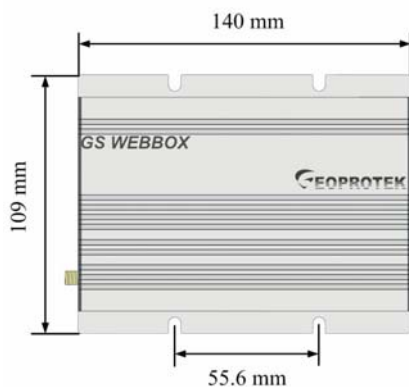


In a local network or the internet is available, you can use your iPad or iPhone as a display panel to present the yield graph or yield production of your PV system. You can download GS MOBILE from App Store and link your tablet PC or mobile to the GS WEBBOX directly. It also allows you to customize your background and slides show presentation. If you connect the GS WEBBOX to the GeoSolarPortal via internet, you also can link to the GeoSolarPortal and login with your ID and password to exam multiple PV systems working status. GS MOBILE can review Daily/ Monthly/ Yearly/ Total yield data report and check the inverter working status. It also supports on-line web camera that allow you to check the real time camera images on site.

Specifications:

	GS WEBBOX
Inverter Communication	RS-485 (Modbus)
Communication Interface	Ethernet / GPRS (Optional)
Internet Connection Method	Fix IP, DHCP, PPPOE, GPRS
User Interface	Web Browser with Java Script
Maximum number of GS INVERTER monitored	50
SD Card Data Storage	2G/4G
Power Requirement	12VDC with Power Adaptor
Power Consumption	0.8A
Operating Temperature	-20°C ~ +40 °C
Dimensions	109 x 140 x 28 mm
Weight	500g
Data Logger	Energy Values, History Values, Events
Data Access Method	<ul style="list-style-type: none"> •Directly access via Web Browser (Fix IP) •Access via GEOSOLAR PORTAL (Fix or Dynamic IP) <ul style="list-style-type: none"> •iPhone or iPad with GS MOBILE APP •FTP download (.CSV file)
Alarm Method	Email / SMS (Optional)
IO	1digital input, 1digital output
Warranty	5 Years

Dimension:



Order Code:

GSW - 2G - N - STD
XX - X - XXX

(1) Memory Capacity

(2) GPRS/SMS Module

(3) Inverter Brand

(1) Memory Capacity	2G	2G Memory
	4G	4G Memory
(2) GPRS/ SMS Module	N	Standard (Without GPRS/SMS Module)
	S	With GPRS/SMS Module
(3) Inverter Brand	STD	STANDARD MODBUS INVERTER
	XXX	Please confirm the specific order code with GEOPROTEK

