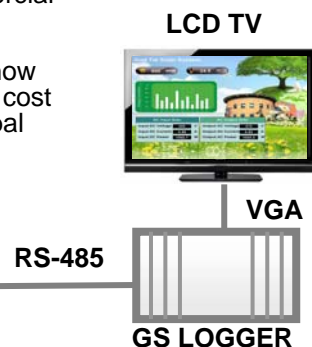
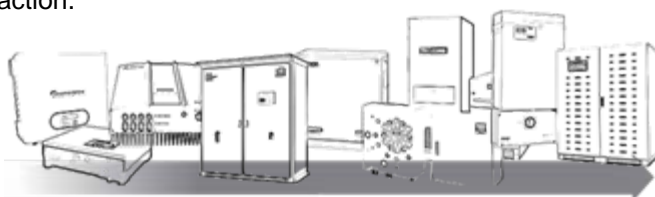
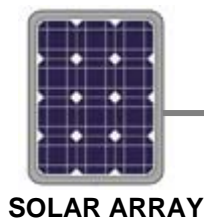


## GS LOGGER

### Commercial Solar SCADA, Support Multi-Brand Solar Inverters Energy Management and Demonstration Platform

As the increasing awareness in energy and global warming issue, there are rapidly growth in solar plant installations which also required for solar SCADA system to monitor, manage, and demonstrate in government organizations, schools, solar farms, or enterprises. For a utility scale solar plant, they may have more budget to customized design their SCADA system by a specialized company. But for a commercial solar plant, they may have very limited budget to establish their own SCADA system to fulfill their needs. GS LOGGER is a special designed for commercial solar usage SCADA system. System installers can set it up quickly with flexibility to apply different inverters, sensors, and digital meters. They also could provide customized display design for their customer and manage all their solar plants remotely. For commercial users like governments, schools, or enterprises, generating solar power is not the only purpose, but they also hope to demonstrate and educate to people. They can apply GS LOGGER to check the performance and status, and they can demonstrate it to people how the system works, how much energy they created and saved. GS LOGGER is the most cost effective way to achieve these purposes and make people aware the importance of global warming, and put it into real action.



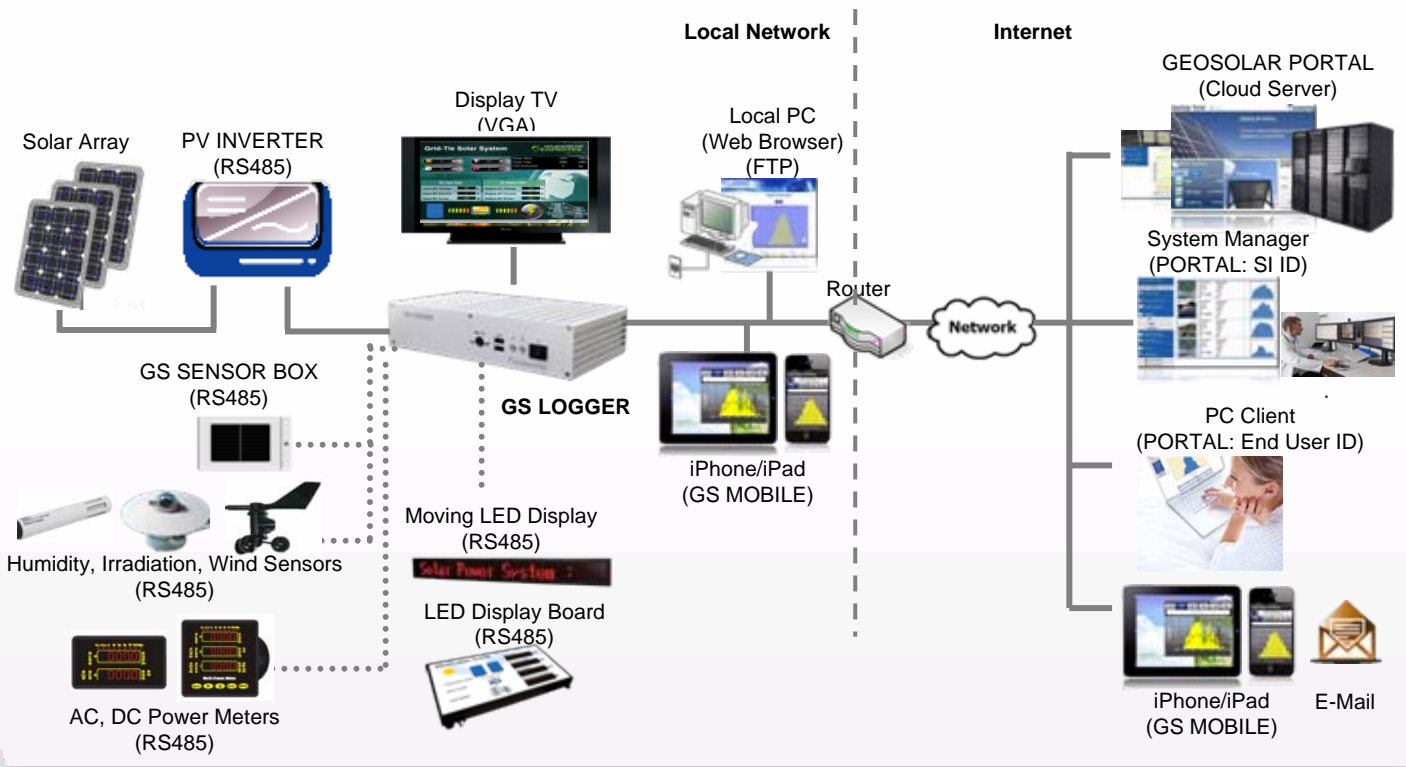
# All-in-One Solar SCADA System

## Real Time Status, Management, and Demonstration



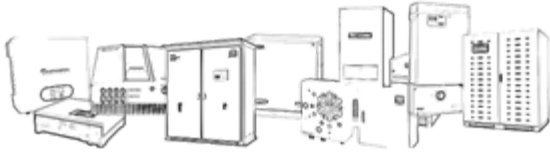
There are more and more people aware the global warming issue, and hope they can do something to save the earth. Unfortunately, the major difficulty is people or students hard to quantify how much energy they create if they apply the solar or other renewable energy system. Or how much energy they save if they do some effort in energy saving behavior and how to make sure they do in the right way. GS LOGGER is a platform that make all the data can be measurable and demonstrated on screen. By this way, people could understand more about their behavior and create more responsibility by themselves.

GS LOGGER is a complete and All-in-One solution for a PV and energy demonstration site. It supports major popular solar inverter in the world and provide future integration flexibility. For a system installer, they can setup the connected inverters and sensors according to the solar system installed. If customers need a customized display pages to present on a TV screen, system installer can provide the best customer-oriented service to help their customers design the display content. Once the GS LOGGER is connected to the internet, it could send data to GeoSolarPortal cloud server automatically that allowed system managers can manage multiple PV plants and provide the maintenance service to their customers on one platform. In some cases, customers may need a whether station measurement or power consumption measurement. GS LOGGER support temperature, humidity, irradiation, wind speed, and wind direction environment measurement. Also, it can add on a DC or AC power meter that allows to monitor not only the renewable energy generation but also power consumption in buildings or classrooms.



## Support Multiple Brand PV Inverters Supported Inverter Brands

- SMA
- POWER-ONE
- AE
- PVPowered
- KACO
- XANTREX
- ABB
- SATCON
- DELTA
- LTi (PV Master)
- PHOENIXTEC
- EATON
- SCHNEIDER
- KLNE
- MOTEC
- POWERCOM
- ABLEREX
- GEOPROTEK
- POWER GENERAL
- GS YUASA



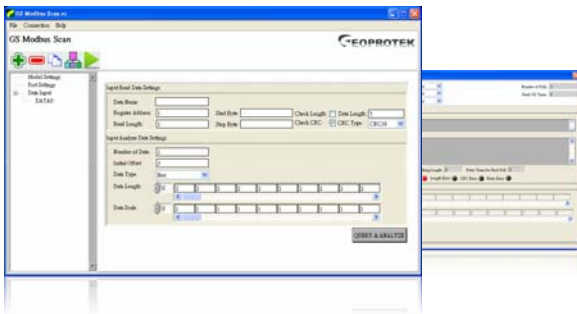
Different projects may apply different brand PV inverters, sometimes there may have more than two brand inverters in one site. In order to help system installer can apply GS LOGGER in these projects and monitor data from all string inverters. GS LOGGER supports multiple major brand PV inverters and it will extend to support more brand in the future. By this way, system installers can apply same platform for different solar plants. If customer want to expand more PV panels in the future, there is no limitation for inverter brand selection. System installer also could add monitoring inverter very quickly and easily.

## GS MODBUS SCAN

For inverter manufactures, agents, or system integrators who want their string inverter could be supported by GS LOGGER, GEOPROTEK developed a quick testing utility GS MODBUS SCAN for inverters that apply standard RS485 Modbus or Modbus TCP protocol. They can use the GS MODBUS SCAN to define inverter data address, length, start, stop byte, query sections, and data scales...etc. After testing by the utility, GS LOGGER can quickly integrate and support their modbus inverter in shortest time without sending inverter for testing.

## Data Read & Statistic Report Query Inverters, Sensors, Meters Data

Once system installers connect the PV inverters and sensors to GS LOGGER via RS485 signal wire, they can add the monitoring devices in the main software screen of GS LOGGER. To add an inverter, you can select the inverter brand name and model number according to the inverter you connected. Also, you can add sensors in the list for temperature, irradiation...etc measurement. Once you setup it up, GS LOGGER will automatically read data from inverters, sensors, and meters to show the real time information and generate statistic report periodically. By this way, system installer can add more than one type inverter and provide future extension flexibility for their customers.



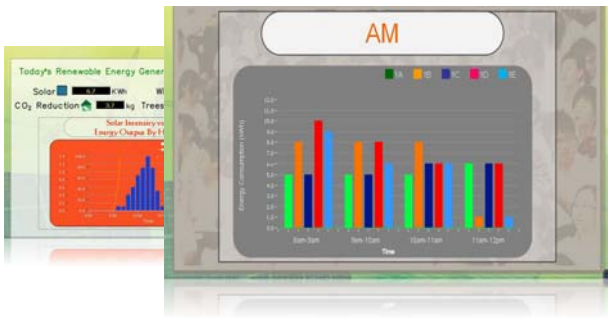
## Customer Oriented Display

### Change Background and Display Contents



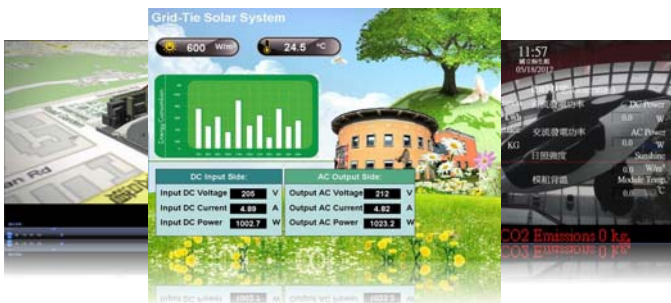
For most demonstration sites, they hope to output the solar yield information to a display TV. In different projects, they may have different background and different content items to show on it. GS LOGGER is allowed system installer to change background with .BMP, .JPG or .PNG file and move the data indicator to the position you want to show on the new background. Each data indicator can be selected the data source form specific inverter and data column, or you can select summary information (sum all inverter yield data). In order to match with your background, you can adjust indicator properties like font size, color, precision... etc on it.

### Statistic Data and Graph Display



In some cases, customers may not only want to show the real time information, but also the statistic data or graph. The data indicator is allowed to show the real time data or the statistic data from daily, weekly, monthly or yearly report. For example, you can define a data indicator to show the total yield of last month. Sometimes, graph is a more clear and understandable way for students and users. There are four graph types you can use for demonstration. You can use time graph to show daily yield graph vs irradiation and temperature. Or you can use yield comparison graph to compare multiple inverters yield performance or multiple power consumptions.

### Multi-Page Display Support



In some cases, only one display page can not satisfy customers requirements. They may need the first page to show the sum data, the second page show the first inverter data...and so on. Or the first page shows the solar yield graph and second page displays the wind yield graph. Even some customers need to slide show the photos or insert with a educational film. GS LOGGER is allowed to add up to 20 display pages, you can define each display page individually as standard, picture, or media type display. Each display page can setup the display time and itinerate times. By the way, you can add a scrolling text marquee in the button line of the screen, users can type the messages that they want for propaganda and insert with solar yield information.

## Environment Sensors

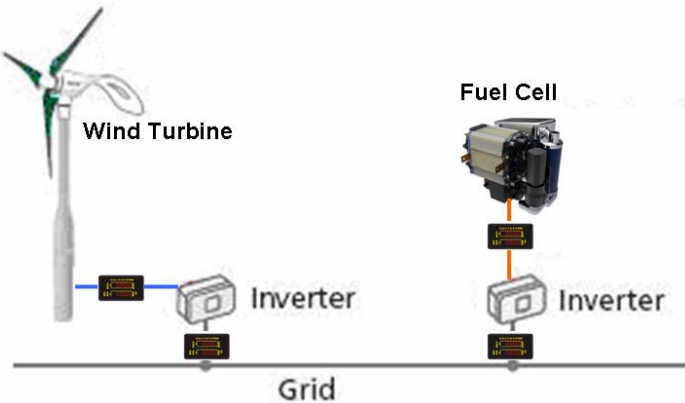
Irradiation, Temperature, Wind Speed...



A weather information is necessary if customers need to compare the yield graph with environment parameters. GS LOGGER now supports irradiation, module temperature, environment temperature, wind speed, wind direction, and humidity measurement. Sometimes, you may have more than one location to install these sensors, GS LOGGER is allowed to setup more than one set of these sensors and do the mapping to decide which sensor data correspond to which inverter information. These data will be recorded with inverter data and generate the statistic report.

## Power Meters

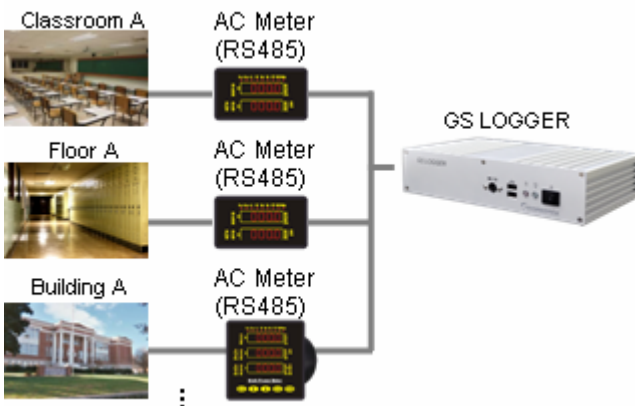
Yield Measurement (Solar, Wind, Fuel Cell...)



In some projects, there are not only solar power, but also wind power, fuel cell, or other renewable energy generators need to be monitored. Or there is no communication interface on the inverter. (Most inverters for stand alone system are without communication interface.) In these cases, we could apply DC or AC power meter on DC or AC side to measure the yield information of solar, wind, or other energy source. Then you can add an inverter in GS LOGGER and select different power meter type for measurement. By this way, there is no limitation for your monitoring devices and GS LOGGER can get the yield information from the power meters.

## Consumption Measurement

More and more schools or enterprises not only want to know the renewable yield information, but also want to get more information on power consumption of their units. By this way, they can understand and analyze their energy saving behavior and do some more adjust on it for improvement. The measurement units may a room, a floor, a building, or even an entire school. You can select AC power meter according to the electricity phase and wires and connect all the meters signal to GS LOGGER. GS LOGGER will monitor and record the power consumption information and generate statistic report and chart automatically to present on the demonstration TV.



## Remote Access

### Build In Web Server



GS LOGGER has a build in web server that allows users to review the data by their Web Browser. For this function, GS LOGGER needs to have a fixed IP address and connect to the internet. User can type the IP address in their web browser and review the daily, monthly, yearly, total data report on GS LOGGER. Once you select different data on it, the web server will query the data that saved in GS LOGGER and present it to the web page. You also can check the on line inverter status on the web page or to check the event for the inverters.

## Cloud Management

### Central Administration for Multiple PV systems



[www.GeoSolarPortal.com](http://www.GeoSolarPortal.com)

GS LOGGER is also a data gateway that can send data to GEOPROTEK portal server periodically. You can enable the portal setting in the GS LOGGER and type the destination server IP. 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 higher authority for system integrator or reseller to exam all station status, compare performance, and more advanced analysis functions.

## GS MOBILE

### Free App on iPhone or iPad



If you want to use your mobile device to check the PV system working status or yield. You can use your iPad or iPhone as a display panel to present the yield graph or yield production of your PV system. The App can download for free called "GS MOBILE" from App Store. It also allows you to customize your background and slides show presentation. As you connect the GS LOGGER to the 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 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.

## LED Display

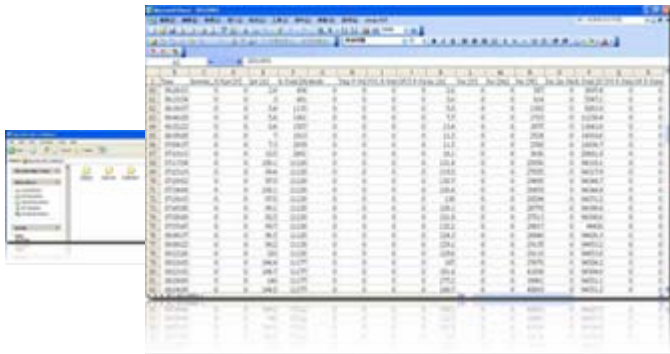
### Seven Segments, Moving LED



Even through demonstration by a display TV is a more cost effective way for customer and system installer, sometimes customer may look forward to a LED display board or a moving LED to present the yielding status and information of the PV plant more clearly. In this situation, GEOPROTEK could provide seven segments LED or Moving LED for system installer to design the display board for customer. GS LOGGER will connect with these LED with RS485 signal wires and update real time information on to the display board periodically. System installer can select which inverter and which data column he want to transmit to the specific LED, users also can type the desired play messages on the moving LED by themselves.

## Data Mining

### Download the Record Data



GS LOGGER has standard 2G (10G for SSD version) storage capacity to record the data from inverters, sensors and meters. It will append new data to the existing daily detail file and automatically update the Daily/Monthly/Yearly files individually. All the data will be saved in .CSV file format and can be downloaded via FTP client. System owners can download the data for backup and advanced analysis. Usually, a PV site with 1 inverters, the storage time of GS LOGGER CF version can save around 14 years. The more inverter connected, the faster the storage get to full. Once the storage full, it will delete the oldest data and continue to save new data. If you connect to GeoSolarPortal, you also can download data from cloud server.

## Not only a Tool, but an Action

### Diagnosis, History Graph, Email Report



GS LOGGER is a multi function all-in-one platform that includes a data logger, web logger and gateway function on it. The multiple brand inverter support make it more flexible for applying in different location and projects. The screen display function make system installer can provide a customer oriented service to satisfy their needs. The remote function make it can be easily management and diagnosis. There are more function like FTP remote push, email report, real time chart, and history graph...etc. It is a complete solution that make system installer and customer can achieve a win-win situation. **It provides not just a tool or platform, but a new concept for education, global warming awareness, and sustainable balance development that we can put things in real action now.**

# Specifications:

	GS LOGGER-CF	GS LOGGER-SSD
CPU	Intel Pinview-D Dual Core 1.8G	
Memory	DDR3 2GB	
Data Storage Space	2GB	10GB
Maximum number of GS INVERTER monitored	50	
Inverter Communication	RS-485	
Communication Range	1000m	
Remote Communication	2 x Ethernet (10/100 Base-TX RJ-45)	
Power Requirement	12V DC in with 100~240AC in, 60W AC-DC adapter	
Power Consumption	12~16W	
Operating Temperature	0 ~ +50 °C	
Cooling Method	Fanless Cooling Design	
Dimensions	260 x 148.4 x 58 mm	
Weight	3700g	
Certification	CE, FCC class B	
IO	1x VGA, 1 PS/2, 4x RS-232, 2x RS-485 (Isolation), USB ports (Ver2.0) x 5	
Support language	English/Chinese/German/Spanish/French/Italian	

Order Code:

GSL - CF - 50 - STD  
XX - X - XXX

(1) Storage Type

(2) Connected Inverter Number

(3) Inverter Brand

(1) Storage Type	CF	2G Storage Space
	SSD	10G Storage Space
(2) Connected Inverter Number	X	Connected Inverter No.
(3) Inverter Brand	SMA POW AE PVP KAC XAN ABB SAT DELTA LTI EAT PHO SCH MEI KLN MOT PCM ABL GS POW GSY	SMA POWERONE Advanced Energy PVPowered KACO XANTREX ABB SATCON DELTA LTI (PV Master) EATON PHOENIXTEC SCHNEIDER MEIDEN KLINE MOTECH POWERCOM ABLEREX GEOPROTEK POWER GENERAL GS YUASA

<Before you order, please confirm the inverter model number you plan to use and check the updated supported inverter model number with local service>