# Solar Data Systems

Solar solutions for monitoring, visualization, evaluation, troubleshooting & control

## Power Control Solutions

Solar Data Systems has teamed with iPLON to offer its monitoring systems, controllers, and total lifecycle management solutions for large-scale and utility solar projects. iPLON develops cloud-based computing systems for microgrid and power control solutions, all using the power of IoT Embedded Systems Engineering.

iPLON provides an efficient SCADA system (supervisory control and data acquisition) for on-site monitoring of solar plant performance. The SCADA system provides PV data monitoring and storage throughout the entire plant lifecycle.

iPLON®
The Infranet Company

## iPLON Solutions & Services

### iPLON "Grid of Things" Power Plant Controller

iGOT-PPC regulates and controls independent/hybrid PV-inverter networks, devices and equipment to meet Grid Code requirements.

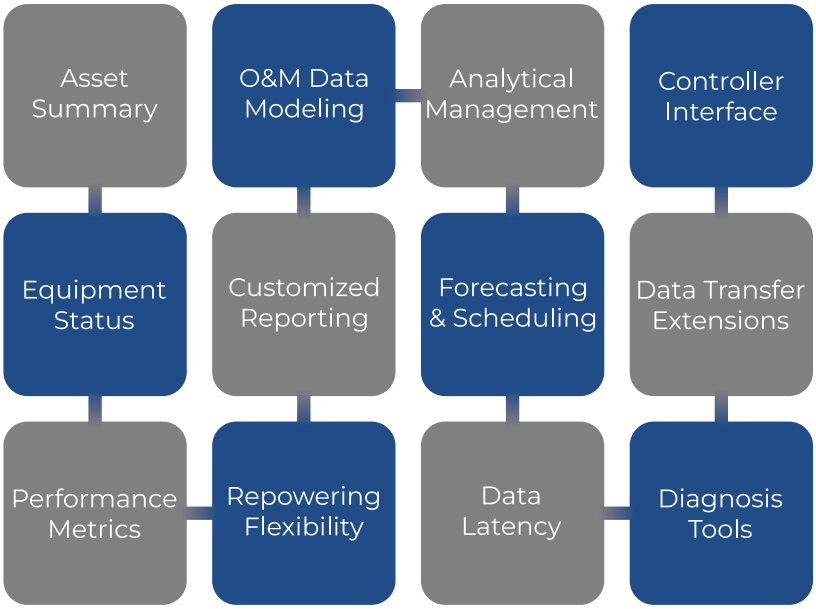
### IoT (iObservability) SCADA

- Advanced Data-Aggregation Tools
- Open- Source Platform
- Predictive & Prescriptive Analysis
- Quick Access to Historical Data
- End-to-End Encrypted Cyber Security
- Data storage and visualization with time-series analytics

### Individual Inverter-, Feeder- & Plant-Level Control

- Active Power (P) Control
- Reactive Power (Q) Control
- Power Factor (Cosø) Control
- Voltage Control Reactive Power Management
- Frequency Control Power Curtailment

### iObservability Cloud
Centralized Monitoring Platform

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Technical Specifications

# iGATE

- Ti Sitara AM3352 Cortex-A8 @ 600MHz, 256MB DDR3
- 720p Video
- 1 x microSD, 1 x CFAST
- 2 x LAN
- 1 x USB 2.0 Host
- 1 x RS232/422/485
- 1 x WLAN 802.11b/g/n (optional)
- 1 x antenna socket (optional)
- 1 x Console Port
- Low Power, fanless
- Debian GNU/Linux
- DIN RAIL mountable


Data loggers are at the heart of the PV plant monitoring scheme and their efficiency is central to the performance of the monitoring system. The iGATE data logger forms the core of iPLON's Solar Plant Monitoring System. The iGATE records data from inverters, energy meters and sensors, and stores it centrally. The iGATE transfers data directly to the remote/local servers via a communication interface.

The iGATE is a RISC-industrial embedded computer based on ARM Cortex-A8 with NEON SIMD co-processor. The great variety of interfaces like LAN, USB, and serial interface makes it simple to connect various industrial devices to the iGATE. Compact dimensions and DIN Rail mounting capability saves space and makes for flexible mounting, allowing it to be easily installed in environments with limited space. The internal micro SD slot protects the system software against accidentally removal, and the miniPCIe slot provides opportunities for wireless communication, and WLAN cards are available.

The iGATE is intended for OEM customers. Plant manufacturers and other control cabinet manufacturers can purchase critical components from Solar Data Systems, and implement them in their cabinets. All installation documentation is included.

## Electrical Data

| | |
|---|---|
| Input Voltage | 230V AC |
| System Voltage | 9-54 V DC |
| System Current | 0.2 A at 12 V DC, mx. 0.5 A at 12 V DC |
| Auxiliary Supply | 24V DC, 2.5 A |
| Power Consumption | Max. 6 W (excluding Inverter Manager) |

## Mechanical Data

| | |
|---|---|
| Protection Class | IP 20 |
| Mounting | DIN Rail |
| UL Listing | Pending |
| Standards | Standard EN 50298 |
| Dimensions | 115x73x25 mm; 115x85x25 mm with all connectors |
| Weight | 0.25 kg |

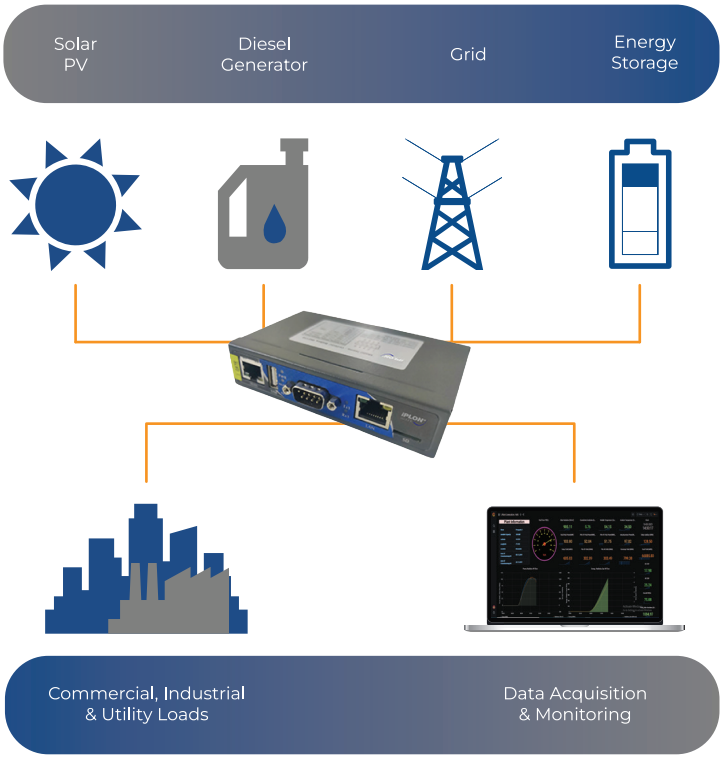
## Ambient Connections

| | |
|---|---|
| Operations Temperature | -20° to 65°C |
| Storage Temperature | -20° to 85°C |
| Relative Air Humidity | Up to 95%, non-condensing |

## RS485 Network

| | |
|---|---|
| Protocol | MODBUS / RTU |
| Data Rate | 9600 to 19200 Baud |
| Topology | LINE |
| Cabling | Twisted Pair |

Note: The iGATE has a 2.5 W min. power consumption, and does not require fans.
It can withstand harsh industrial conditions while within the Operations Temperature range.




## iOT Controller

- Project-Specific, Customizable & Scalable Platform
- Compatible with All Leading Inverter OEMs and Energy Meter OEMs
- Flexibility to Integrate New OEM drivers quickly
- All-in-One Platform for Power Control and Monitoring (Supply & Demand)
- Reference Energy Meter (DGMFM) with +/- 750 ms Sensing Rate
- +/-850ms Response Time for Inverter Command
- Solar DG & Zero-Evacuation 1-Second Log Visualization for Precise Diagnostics
- KPIs: Deemed Generation, Performance Ratio, CUF, Dashboard-Running Hours, Source Utilization & ROI
- Customizable Dashboards & Reports
- Customizable Fail-Safe Logic

**Collect and store data from inverters, meters, transformers and weather stations.**

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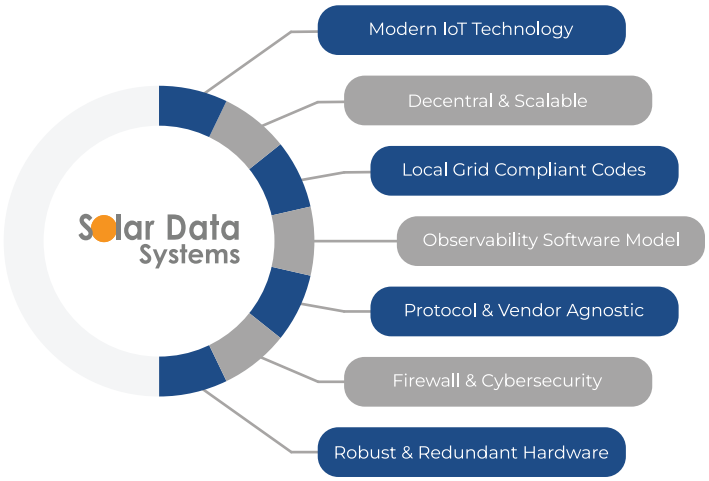
The iOT Controller is a reliable Facility Management Controller (FMC) with Intelligent IoT platform and observability stacks, which can integrate with inverters, energy meters, weather sensors and other communication devices. It offers monitoring and control, with data-porting options to any 3rd party server in a single platform with market-specified security and regulations.

FMC is powered by a robust embedded gateway, which can be programmed to provide control commands to the inverter (Open / Closed loop) to regulate voltage, frequency, active / reactive power and power factor. It's not limited to any OEM specification, and it can communicate with different protocols like Modbus TCP / IEC 61850 / Modbus / Sunspec / RS485.




## iPLON Solutions & Services

ABB · AVAADA · M+ SOLAR · ENERPARC · LARSEN & TOUBRO

SINENG · SUNGROW · TATA · TMEIC · WAAREE

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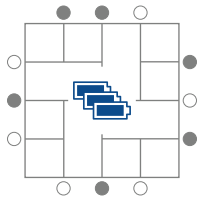
## Major Simulation Studies in Power system are:

- Power Flow Study
- Short-Circuit (Fault Analysis) Study
- Coordination (Protective Relays) Study
- Transient or Dynamic Stability Studies
- Harmonic or Power Quality Study
- Optimal Power Flow Study
- Models of Competitive Behavior / Financial Modelling (LCOE, IRR, ROI, Breakeven etc.)
- Power System Simulation Software:
  - ETAP, PSCAD, PSS/E, DIgSILENT Power Factory & Power World



## Power System Simulation Services

Our PSSS utilizes state-of-the-art modeling, engineering analysis, digital and real-time simulation and commissioning support.

This enables fast grid connection with flexible, safe, stable and reliable power plant operations, and performing generator control system parameter estimation under all conditions.

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The future's energy is renewable. Few technologies grow faster, and none contribute as much to the preservation of our environment. Ensure your renewable energy efficiency with Microgrid Power Control from iPLON and Solar Data Systems.

iPLON products help improve solar power systems across the field, automation and management levels, enabling optimal performance and yield. iPLON's microgrid power control solutions are used in conjunction with iFTs, iATs and iMTs for on-site monitoring, visualization and evaluation of PV systems.

The web portal receives live and efficient plant yield, current and voltage data from each inverter, and can be securely and remotely accessed from anywhere.

Altogether, iPLON products help plan and optimize scheduled maintenance, performance checks, and loss reduction.

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## Contact Solar Data Systems for all information on Integrated Microgrid Solutions for PV System Power Control with

iPLON®
The Infranet Company

Solar Data Systems

**Request A Custom Quote Today!**

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