

Solar Energy Aggregator Solution

Solar Energy Visualization, Analysis and Reporting Solution

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Mobile App





AMR Modem

Local Display

Solar Energy Aggregator Solution

The SANDS Solar Aggregator represents a comprehensive solution aimed at simplifying the gathering and presentation of essential solar energy data. It effectively collects meter data from several photovoltaic (PV) sources within a specific geographical area, offering a holistic perspective on solar energy production. This aggregated data is easily accessible and can be viewed through a local nodal display or remotely via a user-friendly mobile application, enabling streamlined monitoring and management of solar energy resources.

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Architecture



AMR Modem for Solar Energy Aggregator Solution

AMR Modem: A dedicated AMR Modem collects real-time data from each solar PV system spread across a designated geographical area. It captures instantaneous parameters, billing details, load survey data, tamper occurrences, and transaction events and sends it to the cloud server via GPRS

Centralized Display: A central display unit retrieves data from the cloud and presents real-time data summaries from multiple solar PV systems. Users can easily monitor and analyze energy production patterns through this interface.

Mobile Application: A mobile app and web interface allow users to remotely access and monitor real-time data of their solor energy system.

Key Features of AMR Modem



Seamless Integration: Compliant with the IEC-62056-21 DLMS standard for seamless integration with electronic energy meters.



Data Variety: Capture a range of data types, including instantaneous parameters, billing information, load survey data, tamper data, and transaction events.



Configurability: Dynamically configure data push intervals based on your monitoring needs.



Storage: Internal storage maintains data continuity and functionality even without a GPRS network, by storing the data and sending it to the cloud once the network is restored.



Specification

Operating GSM band	Dual Band GSM 900/1800MHz
Power Output	(2W) @ 900 MHz , (1W) @ 1800 MHz
Power Supply Input	Range of 50 V AC P-P to 540V AC P-P, 50 Hz
Ambient Temperature	0°C to 60°C
Internet protocol Compatibility	IPv4 & IPv6
Humidity	95% RH (non-condensing)
Antenna	6dbi magnetic base antenna
interfaces	RS-232/RS485 or optical interface to energy meter
Baud rate	115,200 bauds
SIM Card	SIM Card Slot is provided on the motherboard and accessible by opening/sliding the dedicated SIM card slot cover.
GSM data features supported by Modem	TCP, UDP, HTTP, FTP
SIM interface	1.8V/3V Interface
Optical port connector cable	Supplied with power cable, antenna with co-axial cable of suitable length and RS 232 connecting cable.
Surge Withstand/ Capacity	6KV
Sealing arrangement of modem	Top and base cover are sealed to prevent tampering
Memory	4MB non-volatile Data memory (Expandable to 8MB)
RTC	Modem time could be synchronized with Server time

Power Supply

Firmware Upgrade

Inbuilt 3 Phase/Single Phase Power supply

Through POTA

Product Certifications

EMI & EMC	
Electro static discharge (ESD)	As per IEC61000-4-2
Electrical Fast Transient Burst immunity test	As per IEC61000-4-4
Data transmission	GPRS Class B Multi slot class 12 or class B Multi slot class 10 Packet channel support : PBCCH Coding Schemes: CS1 to CS4 compliant with SMG32 (Release 97)
Surge	As per IEC61000-4-5
Conducted Emission	As per CISPR 22
Radiated emission	As per CISPR 22
Radiated susceptibility	As per IEC61000-4-3
Mechanical	
Protection rating	IP 55

Environmental	
Operating temperature	-10°C to +60°C
Storage temperature	-10°C to +70°C
Relative Humidity	Upto 95% Non condensing

Benefits of the Implementing Solar Aggregator System

Real-time Insights: Gain instant visibility into the power generated by your solar panels in kilowatt-hours (kWh).

Customized Dashboard: Enjoy a user-friendly interface with a tailored dashboard for intuitive and efficient monitoring.

Alerts on Deviation: Receive timely alerts in case of deviations, allowing for prompt corrective actions.

Offline Data Push: Even without a General Packet Radio Service (GPRS) network, SANDS ensures seamless data continuity and functionality.

- Historical Tracking: Record and analyze the total power generated over specific periods, aiding in performance evaluation.
- Automatic Reporting: Simplify record-keeping with automated reports, ensuring you stay informed without manual effort.
- **DISCOM Compliance:** Align with the guidelines prescribed by the Distribution Companies (DISCOM), ensuring regulatory adherence.

Local Display

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Home Screen

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Daily Profile

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Instantaneous Profile





Home Screen

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Bill Profile



Instantaneous Profile

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Daily Profile

Prices are subject to actual requirements, contact sales for pricing