

LANMESH Wireless



Solar Energy
Management Software

Improve Energy Efficiency

Software
Solution
Design
Consulting

Simplify Solar Energy Management
Everything You Need to Monitor and Control Solar PV Systems



LanMesh SolaCenter Energy Management Software

CONNECTING YOUR BUSINESS TO THE TECHNOLOGY RESOURCES YOU NEED

LanMesh Renewable Energy Software is a secure web based Smart Energy Management software collect data and control wind turbine or solar electrical component more easily.

- ✓ Flexible architecture
- ✓ Report chart, alarm, notification via SMS
- ✓ Support legacy or emerging network standard
- ✓ Modbus, RS485, IEEE802.11, and Ethernet
- ✓ Work with client software - Smart phone based application for industry automation

Modules:

Driver for external controlled and monitored device: Handle data received Custom or third-party components

Data processing: provide access to arbitrary data streams supplied external data module.

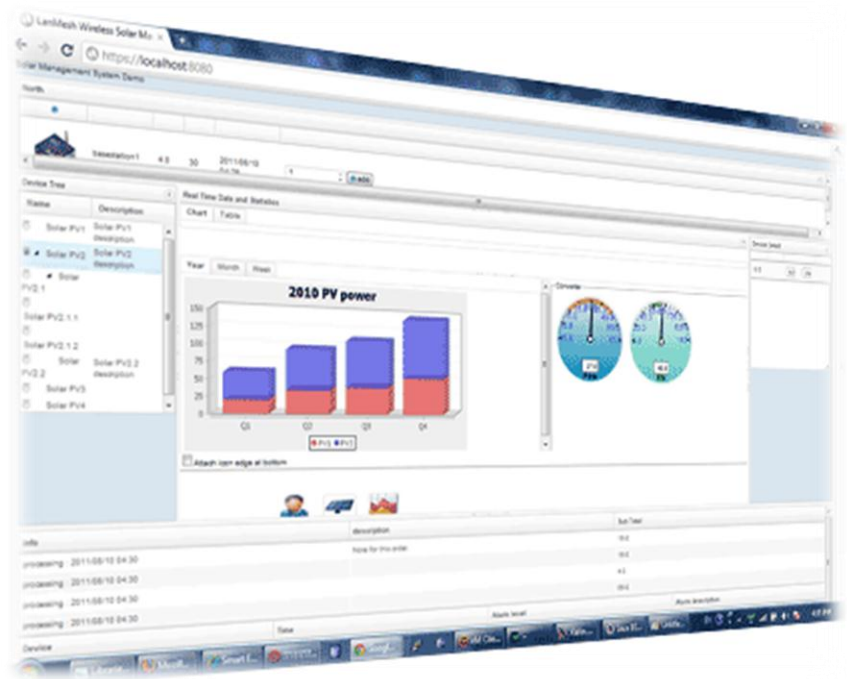
Publish and notification: web service that provides access to live data. This layer has multiplexing capabilities and can communicate to multiple instances of underlying servers running on multiple server computers.

Database: monitors live data and records it in a SQL database

Automated System

User Friendly Display
with Graphic and Tables

Communicate with
variance of Power
Inverters



LanMesh SolarCenter Data Acquisition

- Handle data received Custom or third-party components
- Associate date time stamp for each sample data
- Associate position information for each sample data
- Verify data and screen illegitimate data pass through

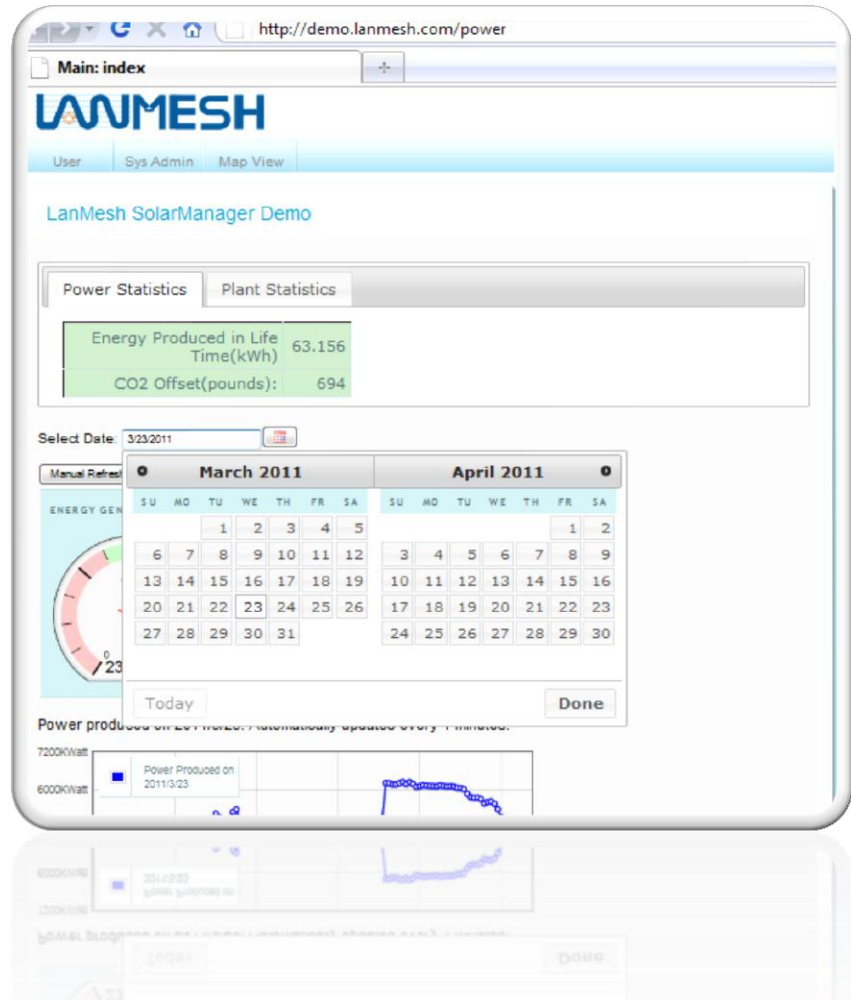
LanMesh SolarCenter Publish and notification

- Graphical web interface, real time data is updated as fast as 500 ms
- Automatically generate daily, weekly or monthly report
- Send alarm notification to the administrator via SMS or email
- Arbitrary set up trigger event
- Easy customize or upgrade client web interface
- provide stand-alone desktop management isolated from Internet to meet special needs and reduce the risk of external attack
- Energy benchmark reports
- Export data to PDF, spreadsheet, txt format
- Support open flash chart and easily switch among line, bar or pie chart
- Provide energy consumption trend chart

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SolarCenter Communication Interface

- Support legacy or emerging network standard DNP3, Modbus, RS485, IEEE802.11, Ethernet, ZigBee and other communication protocol or standard easily support by plug-in driver
- The wireless IP based terminal node are deployed multiple location adjacent to controlled device and upload data to LanMesh Wireless Energy Management Center where further analysis are processed.

LanMesh SolarCenter External Data Integration

- Support SMA power invert data format and other customized power invert format
- Weather station report and forecast integration
- GPS Time Clock and Location Information

LanMesh SolarCenter Account Management

- Group privilege
- Secure log in through SSL protocol
- Configurable user permission



Integrate Weather Stations

Real Time Collect Data

Enterprise Level Database to Store Operating History for Decades

Instant Alarm Notification for Easy Monitoring



LanMesh SolarCenter Demand Analysis

- Automatic Demand Response feature to automatically reduce electricity use during peak demand periods while without interrupting your end users' business
- Analyzing the user data usage trend and provide optimized algorithm to realize the automatic demand response.

LanMesh SolarCenter Database

- Support MySQL
- Support SQLite
- Support data stored in local disk while use SQL language

LanMesh SolarCenter Weather Module

- LanMesh Solar Management seamlessly integrate weather sensors into the system.
- Temperature sensors
- Irradiance sensors
- Wind speed and directions sensors
- Communicate with LanMesh Solar management RS232, RS485 or Ethernet interface.



Integrate Weather
Stations

Real Time Collect Data

Comply with CE Standard



Leverage the power of flexible architecture of Lanmesh industrial control solution, one tiny device contains web server functionality, data acquasization, remote device control, monitoring of third party device such as power inverter, weather stations, time clock, GPS location.

The benefits of this One Size Fits All Solutions is the delivery speed and quality of both hardware and software is foreseeable.

The LanMesh Gateway 2710 can be easily configured into a standalone web server, control hub or control box, by modifying configuration file.

LanMesh SolarCenter Demand Analysis

- The LanMesh Gateway 2710 provides a historical data collection which allows user to define the points that are to be sampled.
- The LanMesh Gateway 2710 stores data history locally up to one year.
- Connect to secure LanMesh web server through GPRS/UMTS/HSPA
- The LanMesh Gateway 2710 allows the user to specify recording of statistics in the sample records including time averages, summations, maximums and minimums.
- LanMesh Gateway 2710 provide sampling data rate as low as 500 ms.

Technical Specification of LanMesh Gateway

	LanMesh Gateway 2710	LanMesh Gateway 2720
Operating System	Embedded Ubuntu, kernel 2.6.25	Embedded Ubuntu, kernel 2.6.25
CPU	ARM9 200MHz	ARM9 200MHz
Memory	32M Bytes of SDRAM	128M Bytes of SDRAM 128MB NAND FLASH
4 channel 10-bit Analog-to-Digital Converter (ADC)	X	X
Ethernet	10/100baseTx Ethernet controller	10/100baseTx Ethernet controller
ZigBee		ZigBee interface, range up to 1 mile with external antenna
Wifi 802.11b/g		Extended module
GSM/GPRS		X
HSPA		Extended module
RS485	Optional	X
	1 I2C Port 1 SPI Por	
Discrete I/O		X
Protocol	TCP/IP	Modubus, DNP3, TCP/IP
UART port	2	2
USB	X	X
DEBUG Port	3 wire RS-232 serial debug port	3 wire RS-232 serial debug port
Satellite Transmitter		Optional
Operating temp.	0°C to +70°C (Standard) -40°C to +85°C (Optional)	0°C to +70°C (Standard) -40°C to +85°C (Optional)

Contact LanMesh Wireless Inc.

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