EnergyLink360

Energy Seamless Integration & Precise Data Monitoring

- System Integrated , Data Monitoring
- Data Log & Report
- IoT and Cloud Solution

Energy Web Data Report

Energy Link 360 is a web-based software solution designed to seamlessly integrate with digital meters utilizing the Modbus or BACnet protocol over RTU and TCP/IP. It facilitates the exchange of IoT data through MQTT Protocol. This module efficiently retrieves event logs and trend logs at one-minute intervals, presenting the data in customizable table or chart formats. Users can export the data as Excel or PDF files and have the flexibility to tailor report generation based on their preferred time periods.

Key feature

- User-friendly web interface supports popular web browsers.
- Energy usage summary by day or month.
- Real-time 24Hr. or historical graph reports for Active Power (kW), Energy (kWh), Volt, Current, Peak Demand, Power Factor (PF), Water, Heat, and GAS
- Uses MySQL database and SQLite3 with SQL standard commands
- Runs on Windows 10, 11, and Ubuntu Linux and can be accessed via a web browser.
- User login with group permissions (Admin, User, and Operate).
- Customizable meter groups and retail billing or energy cost reports with unlimited design group data types in table format.
- Long-term data storage for more than 5 years (depending on hard disk space) up to 1024 devices, recommended HDD 2 TB.
- Supports E-MAP ,GUI 2D,3D import images in JPEG or PNG format or Google maps API.
- Supports up to 2048 devices or 64 loops connected, including digital meters and water meters using Modbus or MQTT protocol.
- Supports display or edit text label, time stamp, value, position and maps legend.
- Billing reports support normal type, TOD, TOU, or customizable billing for end users.
- Supports billing calculations on a fixed rate, step rate, and free rate, including tax rate, and user-customized rate (Tariff Management)
- Support Unicode language (including Thai).
- Support HTML5.
- Trend data type supports bar chart, line, pie chart, etc. Customizable by users to search or display real-time data by date and time range.
- Alarm notifications, Line, E-mail, action trigger and event logs (Offline, Other).
- Reports data logs daily, Time stamp, monthly, yearly, and export formats as csv, Excel , HTML , and PDF.



DIGITAL METER & SYSTEM INTEGRATE IOT



BASHBOARD



GRAPH & REPORT



RECORD DATA EVERY 1 MINUTE

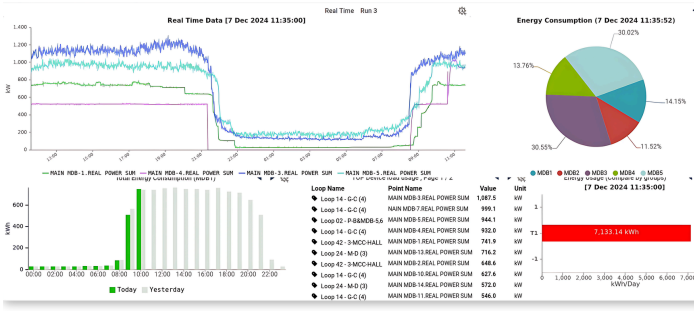


BILLING CUSTOMIZE



WEB BASE, HTML

SOFTWARE FEATURE SUMMARY



	Lite	Standard	Interprise
Core Base Software	✓	✓	✓
Support Device (Max)	128	512	2048
Hardware Installed			
- PC Embedded	✓		
- PC Workstation	✓	✓	
- Server Type		✓	✓

Option (interface with BAS system)

- Supports Interface Protocol, Modbus TCP Server/BACnet/ OPC,JSON/ send IoT devices from MQTT,HTTP,Token
- Command output to digital meter to on/off load when detecting, peak demand or other conditions.
- Web dashboard and real-time monitoring, energy per hour. or per-month reports, facility consumption is shown in a pie chart for each system compared in percent mode or value, show another BAS point such as average temperature or humidity.
- Web dashboard supports three modes of display (real-time, daily, monthly) and quickly export data in HTML, PDF, and CSV format.
- Interface to BAS and read specific data for records data log and merge reports with digital meters.
- E-mail schedule report and Line Message Alert.

Option (Integrate 3rd part API)

Energy Link 360 offers software integration capabilities for third-party applications using the RESP API protocol, SAP, facilitating seamless connections with SCADA systems and security infrastructure such as CCTV or Access Control systems. This feature enables bidirectional data transmission, allowing for efficient data exchange.

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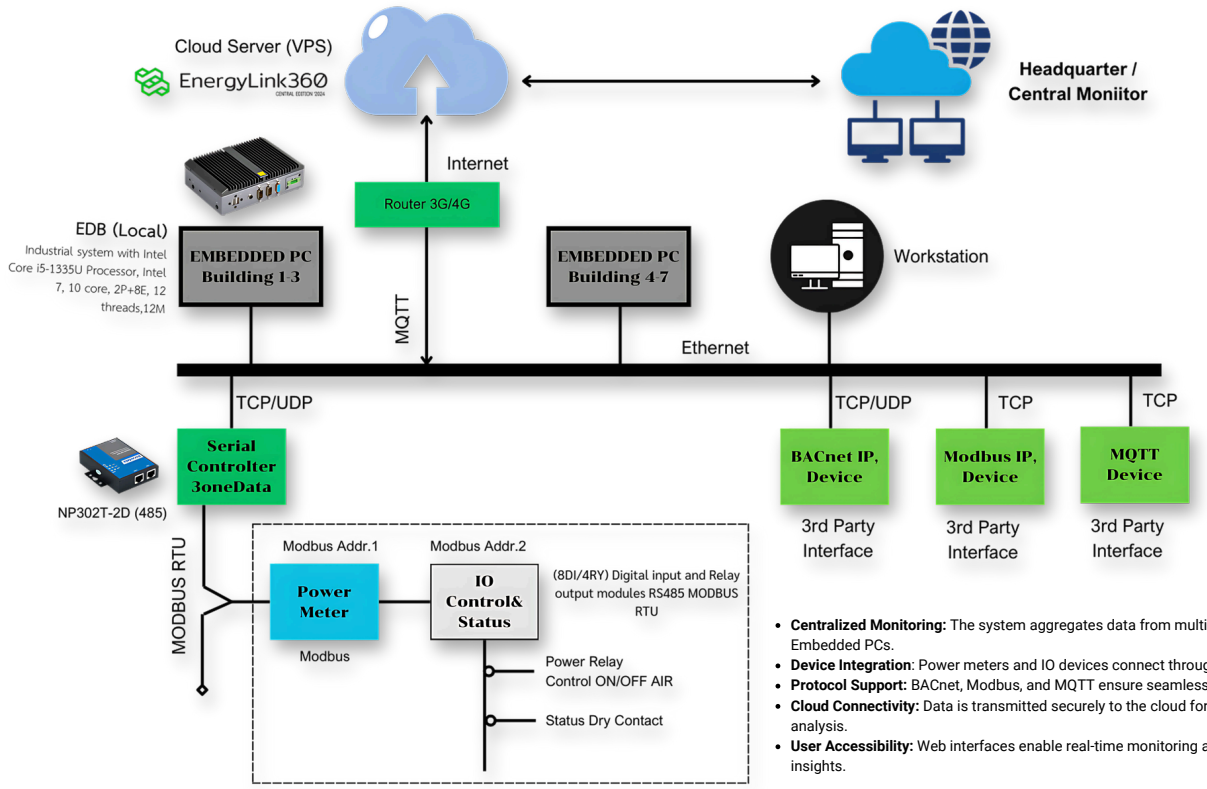
Historical and Record data, Allow users to access past bill records based on the date and time of billing. Exporting Bill Reports, Support exporting bills in popular formats like Excel and PDF. Provide automated report sending via email. Allow users to schedule daily email reports. Include generated bill reports as attachments in the preferred format (PDF or Excel).

Hardware and OS minimum requirement

Package	Hardware	Operating System	Minimum Requirement				Application
	PC Embeded / Single board PC		RAM	STORAGE	CPU	Device Support	
Lite	- Raspberry Pi4	Ubuntu mate for RP4	4 GB	64GB	depend HW	32	IoT and Specific , cloud solution
	- Beaglebone black	Debian11	512 MB	8GB	depend HW	16	IoT and Specific , cloud solution
	- PC Embeded	Ubuntu 22.04	4 GB	64GB	Intel Celeron or better	128	IoT , Industrial , Other , cloud solution
Standard	PC Workstation	Debain /Ubuntu 22.04	8 GB	1TB	Intel i3,i5,i7 or better	512	Office , Building , Shopping Mall ,
		Win7,10,11 , 2016 server					Data center ,and Other
Enterprise	Server	Debain / Ubuntu 22.04	16 GB	2TB	Intel® Xeon®	2048	Building , Shopping Mall , Industrial
		Window server 2019, 2022					Data center ,and Other

Note.
Energy Link 360 Lite package can be installed on small single-board computers such as Raspberry Pi and Beaglebone. However, this option is only available for special applications and is not part of our standard offering. If you wish to use this option, please contact admin-sale@spautobuilding.com and provide details of your specific application requirements.
For more information see also https://www.energylink360.com:

EnergyLink360 System Architecture (Example) : Connecting Devices to the Cloud



- **Centralized Monitoring:** The system aggregates data from multiple buildings via Embedded PCs.
- **Device Integration**: Power meters and IO devices connect through Serial Controllers.
- **Protocol Support:** BACnet, Modbus, and MQTT ensure seamless communication.
- **Cloud Connectivity:** Data is transmitted securely to the cloud for storage and analysis.
- **User Accessibility:** Web interfaces enable real-time monitoring and actionable insights.