EcoStruxure™ Machine SCADA Expert

Lite SCADA software for Harmony GTU/iPC including data management

EcoStruxure Machine SCADA Expert

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EcoStruxure™ Machine SCADA Expert

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EcoStruxure™ Machine SCADA Expert
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EcoStruxure Machine SCADA Expert enables you to use the key features of Microsoft operating systems and build a full-featured SCADA or HMI project for your industrial automation business.

For applications ranging from complex machine control and monitoring to plant supervision and SCADA, EcoStruxure Machine SCADA Expert with Harmony iPC/GTU Open Box bundle makes industrial operations smooth and stress-free.

EcoStruxure Machine SCADA Expert is designed in a modern, ribbon-based Windows interface to provide an integrated and user-friendly development environment.

EcoStruxure Machine SCADA Expert supports capabilities like scripting, animation, E-mail, recipes, security, tags database, multi-touch, alarms, trends, scalability, multi-language, FDA traceability, PDF export, and so on.

Saves time
- Quick and easy installation on Harmony iPCs
- Fully tested and validated bundle means that testing and commissioning days can be saved
- Build applications with ready-to-use PackML and OEE templates
- Generate reports compliant with CFR21 automatically
- Minimize migration time from FactoryTalk™ to EcoStruxure Machine SCADA Expert by automatically converting FactoryTalk ME/SE applications to EcoStruxure Machine SCADA Expert (graphical interface, communication interface, tags, etc.) using the Import Wizard
- Information at a Glance using Business Intelligence Dashboard Template
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Cost-effective
- Track and analyze the performance of your data with embedded EcoStruxure Machine SCADA Expert historian and OEE templates
- Single point of contact for hardware/software/operating system integration and support
- Access SCADA level software with all its benefits and receive alarms by e-mail
- Easy maintenance of machine with long-term hardware supply and availability
- Buy EcoStruxure Machine SCADA Expert as per your requirement with size-based license pricing

Good connectivity and data management
- Realize the power of the IoT with EcoStruxure Machine SCADA Expert’s extensive IT and OT driver library and data management capabilities (connection between ERP, MES, third-party historians, and the plant floor)
- Supports over 250 native communication drivers for PLCs, temperature controllers, motion controllers, bar code/RFID readers, and many more devices
- Native OPC interface, including OPC UA, OPC DA, OPC XML, and OPC .NET to communicate with OPC servers
- With EcoStruxure Machine SCADA Expert Mobile access, you can use your tablet or smart phone to connect remotely

Open architecture and easy-to-configure database interface
HMI Configuration software

Applications

Touchscreen Configuration software with UI design and gestures

Compatible products

<table>
<thead>
<tr>
<th>Type</th>
<th>Harmony STO Color</th>
<th>Harmony ST6</th>
<th>Harmony GTU Premium Box</th>
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<tr>
<td>Maximum number of targets</td>
<td>Proprietary for Harmony STO Color</td>
<td>Harmony ST6 and Harmony GTU Operating System for Harmony IPCs</td>
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<tr>
<td>Operating system on terminals</td>
<td>Proprietary for Harmony STO Color</td>
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</table>

Functions

- Reading/writing of PLC variables
- Display of variables
- Data processing
- Sharing of variables between HMI applications
- Saving of variables to external database

Internationalization

- 16 languages supported by 26 type of fonts
- Multi-language (depending on the OS)

Development of graphic applications

- Native library of graphic objects
- Curves and alarms
- Script

Communication between HMI application and PLCs

- Via I/O drivers: Schneider Electric or third-party protocols (Mitsubishi, OMRON, Rockwell Automation, Siemens)

Uploading of applications

- Yes

Recipe management

- Yes, up to 256 recipes, 600,000 ingredients in total

Report and barcode printing

- Yes

Screen capture

- Yes, for Harmony IPCs in PNG format

Access security

- Password protected

Interface languages

- Screens in 9 languages: English, French, German, Italian, Portuguese, Spanish, Traditional Chinese, Simplified Chinese, Korean and documentation in electronic format available in 4 languages: English, French, German, Italian

OS compatibility

- Windows 7, Windows 8, Windows 8.1, Windows 10 (32-bit/64-bit)

Software type

- EcoStruxure™ Operator Terminal Expert

<table>
<thead>
<tr>
<th>Pages</th>
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<tr>
<td>For more information, please refer to DIA5ED2400703EN catalog.</td>
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</table>

(1) Magelis XBT and Harmony GTU/GTU terminals behave transparently on restoration of power.
(2) Depending on the compatible product. 
Presentation

EcoStruxure Machine SCADA Expert is a powerful software suite for developing HMI, SCADA, and OEE/Dashboard projects that can be deployed anywhere. EcoStruxure Machine SCADA Expert bundled with Harmony iPCs/Harmony GTU Open Boxes provides smart SCADA solutions. This software supports English, German, French, Chinese, and Japanese languages.

The EcoStruxure Machine SCADA Expert software project includes project tags database to manage data, configurable drivers to communicate, animated human-machine interface (HMI) screens, overall equipment effectiveness (OEE) dashboards, and optional modules (alarms, events, trends, recipes, complete database interface, security system, etc.).

The project developed can either be run locally on your development workstation or downloaded and run on a remote computer. The project runtime server processes I/O data from connected devices according to your project parameters and then responds to, displays, and/or saves the data.

EcoStruxure Machine SCADA Expert supports numerous features for creating and managing projects for various industrial automation businesses, allowing you to:
- Monitor machines, run VB scripts, generate reports (PDF, XML, HTML, etc.), receive alarm notifications, and follow trends without having to pay for a full SCADA
- Monitor applications remotely through a Web client or tablet and receive alarms via e-mail
- Save time by generating 21CFR part 11 projects with traceability and e-signature
- Improve efficiency with built-in OEE dashboard
- Store production data in local databases (SQL)
- Protect information with database and overall redundancy
- Make use of the Windows environment with EcoStruxure Machine SCADA Expert compatibility
- Thin client function where screen monitoring from Web browser is based on HTML5/dedicated viewer
- Provide necessary tools that allows the user to create a dashboard based on the queries created

EcoStruxure Machine SCADA Expert components

The EcoStruxure Machine SCADA Expert suite comprises several individual components that can be installed on various platforms to perform different functions. The architecture of the finished EcoStruxure Machine SCADA Expert project depends upon the components installed, where they have been installed, and how they are connected to each other. The following table lists the available components.

<table>
<thead>
<tr>
<th>Component</th>
<th>Features</th>
<th>Platforms</th>
</tr>
</thead>
</table>
| EcoStruxure Machine SCADA Expert | Project development environment  
- Tag integration  
- Remote management of project runtimes  
- Project runtime  
- Agent to allow remote management  
- Project thin client | Windows  
Windows Server  
Windows Embedded Standard |
| Mobile Access Runtime     | Enables the project runtime to serve HTML5-enhanced project screens to tablets and smart phones | Internet Information Services (IIS) for Windows  
Any CGI-enabled web server (e.g. Apache) |
| Secure Viewer             | Project thin client, as a standalone program | Windows  
Windows Server  
Windows Embedded Standard |
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**Presentation**

**Configuration**

The complete EcoStruxure Machine SCADA Expert includes both the project development and the project runtime environments. EcoStruxure Machine SCADA Expert incorporates a modern, ribbon-based Windows interface to provide an integrated and user-friendly development environment.

The project development environment allows you to design, develop, troubleshoot, deploy, and maintain EcoStruxure Machine SCADA Expert projects. The user interface for the EcoStruxure Machine SCADA Expert development environment includes:

1. **Project Explorer**: Organizes all the screens, worksheets, and other items that comprise your project and presents them in an expandable tree-view.
2. **Screen/Worksheet Editor**: Uses the powerful object-oriented screen editor to create and edit a variety of screens and worksheets for the projects.
3. **Database Spy**: Debugging window that allows you to monitor and force values to project tags, execute and test functions, and execute and test math expressions.
4. **Output (LogWin)**: Displays additional information about the project.

The project runtime environment runs the project, communicates with external databases and devices, and serves project screens to thin clients.

**Key features**

**FDA traceability**

With built-in FDA traceability and e-signature features, projects that fully comply with U.S. Food and Drug Administration regulations (21 CFR Part 11) can be created. These features are often used in food and pharmaceutical applications, but they can also be used in any application where traceability is required.

- **Security system**: The security system for the whole application can be enabled or disabled with the “Enable Security System” check-box.
- **Electronic signature (E-Sign)**: The objects and animations enable you to perform a task during runtime and enforce an electronic signature (E-Sign) to execute the task.
### Key features (continued)

#### Standards

Supports common industry standards for developing projects that are compatible with any format. TCP/IP, ActiveX/.NET, OPC (client and server), ODBC/ADO, COM/DCOM, OLE, DDE, XML, SOAP, and HTML are all supported.

#### Drivers

The EcoStruxure Machine SCADA Expert includes over 250 built-in communication drivers for most PLCs, temperature controllers, motion controllers, barcode/RFID readers, and other devices. These drivers enable the integration of multiple devices and systems from the plant floor to the ERP/Cloud in a seamless manner. Also, the Schneider Electric driver toolkits provide the flexibility to build your own drivers.

#### Mobile access thin clients

With this feature, you can remotely view project screens on several different types of thin client. The HTML5-enabled Mobile Access also allows you to access projects from almost any other computer or mobile device. A high level of security can be achieved on plant-floor stations using the standalone Secure Viewer.

#### OLE for Process Control (OPC)

As an alternative to the built-in drivers for direct communication with PLCs, several different versions of OLE for Process Control (OPC) can also be used to manage your devices. This software includes support for OPC DA (server or client), OPC HDA (server), OPC UA (server or client), OPC .NET (client), and OPC XML/DA (client).

#### Companion products (1)

EcoStruxure Secure Connect Advisor provides a secure connection between remote display units on the work site (via SiteManager Embedded) and computers or smart devices in the office (via LinkManager) over a secure central server (GateManager). With EcoStruxure Secure Connect Advisor, maintenance personnel can access Schneider Electric software and update it remotely and securely via the HMI, PLC, and other connected devices as if they were on site. Troubleshooting and repair can also be performed remotely upon request.

### References

EcoStruxure Machine SCADA Expert is compatible with Harmony iPCs and Harmony GTU Open Boxes. The software licensing and activation process is managed by e-mail as follows:

1. On purchase of the product, the EcoStruxure Machine SCADA Expert activation key is provided in paper format.
2. After installing the project development or runtime software, a unique site code will be generated.
3. Send an e-mail with the activation key and site code to SiteKeyLicense.Support@schneider-electric.com requesting the site key, which will be sent in an e-mail.
4. Input the site key on your computer or target device to activate the EcoStruxure Machine SCADA Expert.

EcoStruxure Machine SCADA Expert supports the following execution modes:

- **Evaluation mode** enables you to use all the engineering and runtime features of the product. When EcoStruxure Machine SCADA Expert is installed on the computer for the first time, the product runs for forty hours in Evaluation mode and then automatically converts to Demo mode.
- **Demo mode** enables you to download projects to remote stations and run them for testing or demonstration. You can execute runtime tasks and use debugging tools, which will shut down automatically after running continuously for two hours.
- **Licensed for Engineering only mode** enables all development options for an unlimited time. You can execute runtime tasks and use debugging tools continuously for 72 hours. This license can be used for development and testing only.
- **Licensed for Runtime only mode** enables all runtime tasks and debugging tools for an unlimited time, but cannot create or modify screens/worksheets.
- **Licensed for Engineering + Runtime mode** enables all development options, runtime tasks, and debugging tools for an unlimited time.

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(1) For more information, please refer to “EcoStruxure Secure Connect Advisor catalog” DIA5ED2190101EN
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### EcoStruxure Machine SCADA Expert references

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(1) For EcoStruxure Machine SCADA Expert V8.1.
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