


**WP-5147**
**WP-5147-OD**

## Features

- PXA270, 520 MHz CPU, or compatible
- Windows CE .NET 5.0 Core
- Embedded ISaGRAF Ver.3 SoftLogic (IEC 61131-3)
- Support eLogger HMI
- Hard Real-Time Capability
- 64-bit Hardware Serial Number for Software Protection
- Microphone-In and Earphone-out
- I/O Expansion Bus
- VGA Port Output
- Dual 10/100M Ethernet Ports
- 3 Serial Ports (RS-232/485)
- Operating Temperature: -25 ~ +75°C

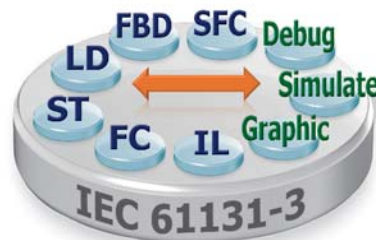


## Introduction

The **ISaGRAF WinPAC-5000 Series (WP-5147 / WP-5147-OD)** is equipped with a PXA270 CPU (520 MHz) running a Windows CE .NET 5.0 operating system, a variety of Input/Output ports (VGA, USB, Ethernet, RS-232/485) and an I/O expansion bus for one XW-Board. The benefits of running Windows CE 5.0 on a WinPAC device include hard real-time capability, small core size, fast boot speed, interrupt handling at a deeper level and achievable deterministic control. WinPAC devices are also capable of running ISaGRAF and PC-based control software, such as Visual Basic .NET, Visual C#, etc., providing all of the best features of both traditional PLCs and Windows capable PCs.

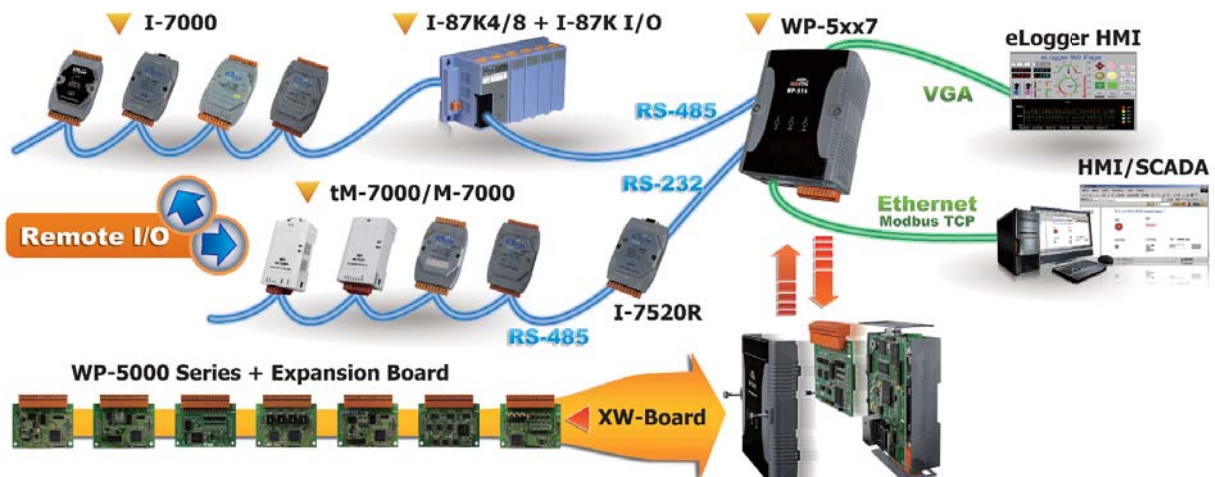
The features of the ISaGRAF workbench Ver. 3.x include:

- IEC 61131-3 Standard Open PLC Programming Languages (LD, FBD, SFC, ST, IL) + Flow Chart (FC)
- Auto-scan I/O
- Online Debugging/Control/Monitoring, Offline Simulation
- Simple Graphic HMI
- Support eLogger HMI



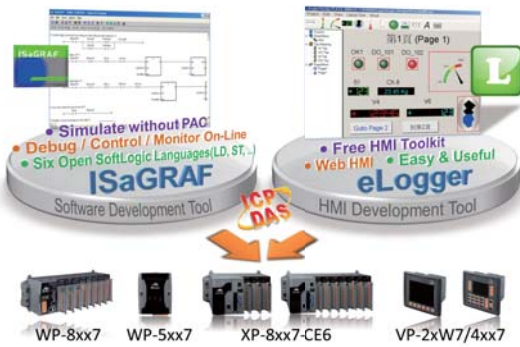
## Applications

Rich I/O Expansion Ability



## Applications

### eLogger HMI

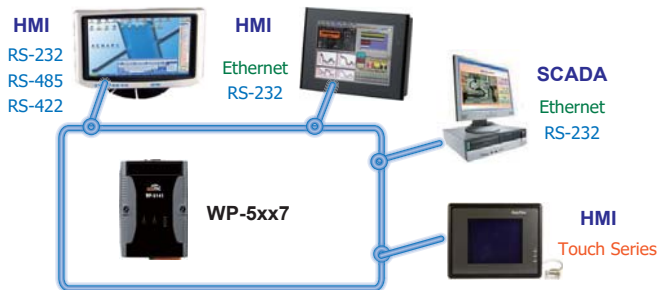


### Schedule Control

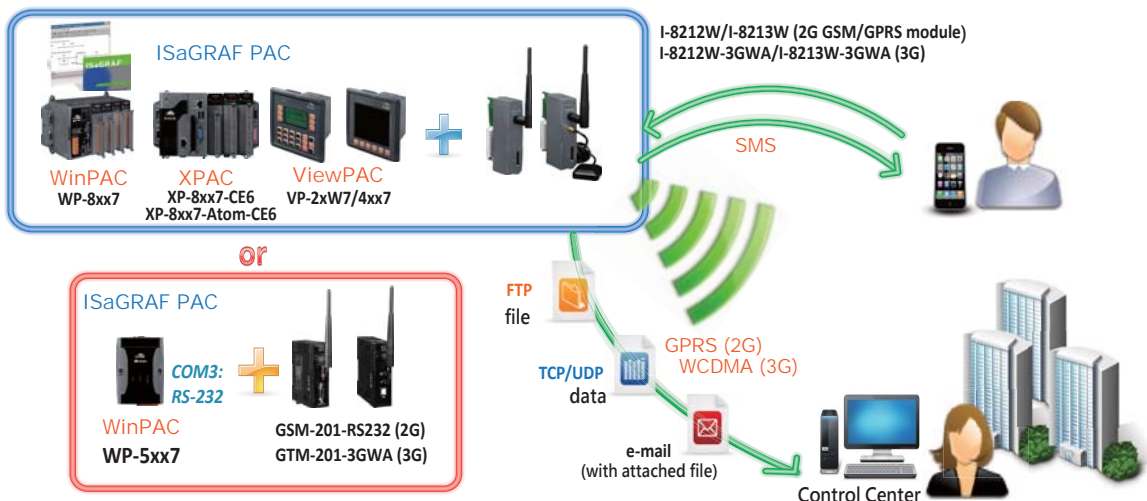
#### Schedule Control



### Modbus Slave : RTU/TCP Slave

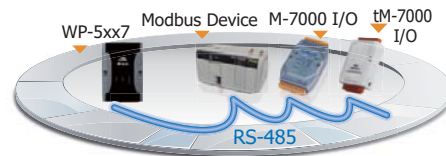


### 2G/3G Wireless Application

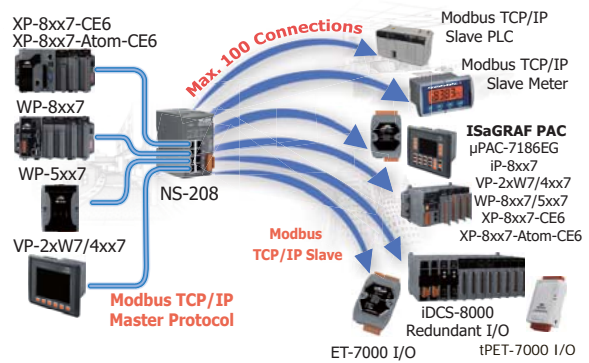


### Modbus Master Port

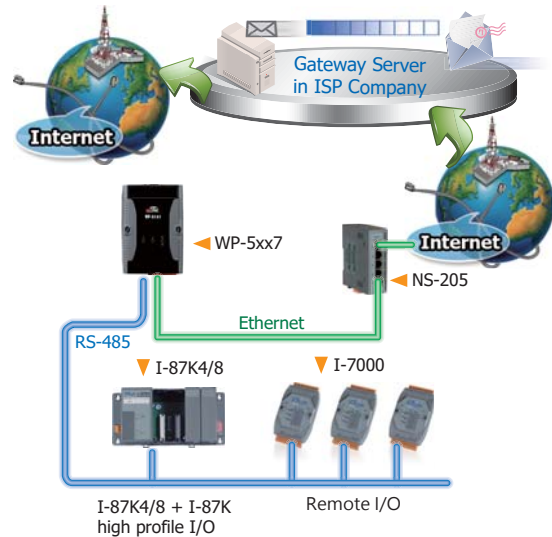
#### Modbus RTU/ASCII Master



#### Modbus TCP/IP Master



### Send Email with one Attached File



## Specifications

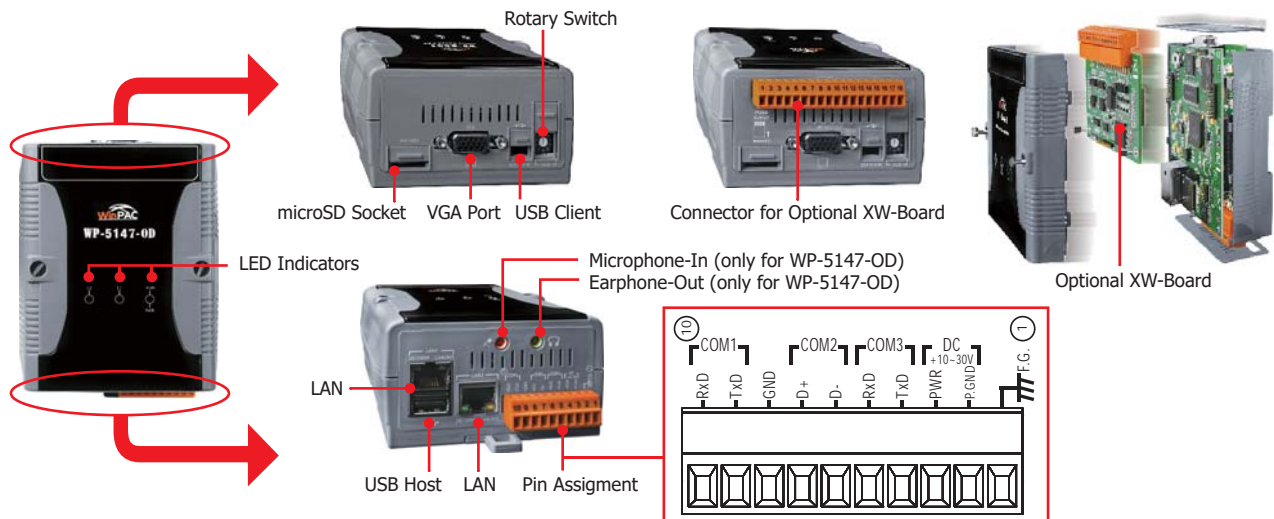
| Models                        |                | WP-5147  | WP-5147-OD                     |
|-------------------------------|----------------|--|--------------------------------|
| System Software               |                |  |                                |
| OS                            |                | Windows CE 5.0 Core  |                                |
| .Net Compact Framework        |                | 3.5  |                                |
| Embedded Service              |                | FTP server, Web server   |                                |
| Multilanguage Support         |                | English, German, French, Spanish, Russian, Italian, Korean, Simplified Chinese, Traditional Chinese                |                                |
| Development Software          |                |  |                                |
| ISaGRAF Software              | ISaGRAF Ver.3  | IEC 61131-3 standard.  |                                |
|                               | Languages      | LD, ST, FBD, SFC, IL & FC;<br>Support eLogger HMI: XP-8xx7-CE6, WP-8xx7/5xx7 and VP-2xW7/4xx7 PAC                  |                                |
|                               | Max. Code Size | 1 MB   |                                |
|                               | Scan Time      | 3 ~ 15 ms for normal program; 15 ~ 50 ms for complex or large program  |                                |
| Non-ISaGRAF                   |                | Options: MS eVC++ 4.0 or VS.NET 2005/2008 (VB.NET, C#.NET)   |                                |
| CPU Module                    |                |  |                                |
| CPU                           |                | PXA270, 520 MHz  |                                |
| SDRAM                         |                | 128 MB   |                                |
| Flash                         |                | 64 MB  |                                |
| EEPROM                        |                | 16 KB  |                                |
| Expansion Flash Memory        |                | microSD socket with one microSD card (support up to 32 GB)   |                                |
| Battery Backup SRAM           |                | Require one XW608, 512 KB (for retain variables)   |                                |
| RTC (Real Time Clock)         |                | Provide second, minute, hour, date, day of week, month, year   |                                |
| 64-bit Hardware Serial Number |                | Yes, for Software Copy Protection  |                                |
| Dual Watchdog Timers          |                | Yes  |                                |
| LED Indicators                |                | 1 LED for Power and Running<br>2 LEDs for user programmable  |                                |
| Rotary Switch                 |                | Yes (0 ~ 9)  |                                |
| VGA & Communication Ports     |                |  |                                |
| VGA                           |                | Yes<br>640 × 480 / 800 × 600   |                                |
| Ethernet                      |                | RJ-45 x 2, 10/100 Base-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)                                       |                                |
| USB 1.1 (client)              |                | 1  |                                |
| USB 1.1 (host)                |                | 1  |                                |
| Audio                         |                | -  | Microphone-In and Earphone-Out |
| COM 1                         |                | RS-232 (Rx/D, Tx/D and GND); Non-isolated  |                                |
| COM 2                         |                | RS-485 (Data+, Data-); 2500 VDC isolated   |                                |
| COM 3                         |                | RS-232 (Rx/D, Tx/D and GND); Non-isolated  |                                |
| I/O Expansion                 |                |  |                                |
| I/O Expansion Bus             |                | Yes, to mount one optional XW-Board.<br>No supporting XW5xx board (i.e. XW506, XW507, XW508, XW509, XW511i, XW514) |                                |
| Mechanical                    |                |  |                                |
| Dimensions (W x L x H)        |                | 91 mm x 132 mm x 52 mm   |                                |
| Installation                  |                | DIN-Rail Mounting  |                                |
| Environmental                 |                |  |                                |
| Operating Temperature         |                | -25 ~ +75°C  |                                |
| Storage Temperature           |                | -30 ~ +80°C  |                                |
| Ambient Relative Humidity     |                | 10 ~ 90% RH (non-condensing)   |                                |
| Power                         |                |  |                                |
| Input Range                   |                | +10 ~ +30 VDC  |                                |
| Isolation                     |                | 1 kV   |                                |
| Consumption                   |                | 4.8 W  | 6 W                            |

## Software and Accessories

|   |   |
|---|---|
| <b>ISaGRAF Development Software</b>   |   |
| ISaGRAF-256   | ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with One USB Dongle           |
| ISaGRAF-32  | ISaGRAF Workbench Software Ver.3 (32 I/O Tags)                                |
| <b>Note:</b> No upgrade service from ISaGRAF-32 to ISaGRAF-256 is available. (ISaGRAF-32 can be used to control more than 32 I/O tags. Please refer to Ch. 3.4 of the ISaGRAF User Manual.) |   |
| <b>Accessories</b>  |   |
| DP-660  | 24 VDC/2.5 A, 60 W and 5 VDC/0.5 A, 2.5 W Power Supply with DIN-Rail Mounting |
| XW-Board  | Add-on I/O Expansion Board  |
| TPM-4100/TP-4100  | 10.4" (800 x 600) resistive touch panel monitor with RS-232 or USB interface  |



## Appearance



## ISaGRAF Specifications

| Protocols (Note that certain protocols require optional devices)   |  |
|--|--|
| NET ID   | 1~255, user-assigned by software   |
| Modbus TCP/IP Master   | Link to a max. of 100 devices that support Standard Modbus TCP/IP Slave protocol. Support one or more tGW-700 series gateway (Modbus TCP to Modbus RTU/ASCII) to expand many Modbus RTU/ASCII Master ports to connect many Modbus RTU/ASCII Slave devices. |
| Modbus RTU/ASCII Master  | Support Multi-port. A max. of 10 ports.  |
| Modbus RTU Slave   | A max. of 5 ports  |
| Modbus TCP/IP Slave  | Two Ethernet ports, LAN1 & LAN2, support total up to 32 connections. If one of the Ethernet port malfunctions, the other one can still be used to connect to the PC/HMI.   |
| Web HMI Protocol   | Ethernet Ports for connecting a PC running Internet Explorer.  |
| User-defined Protocol  | Custom protocols can be applied at COM1~COM3 using Serial communication function blocks.   |
| I-7000 & I-87K RS-485 Remote I/O   | COM2 supports I-7000 I/O modules, I-87K base + I-87K Serial I/O boards, or RU-87Pn + I-87K High Profile I/O boards as remote I/O. A max. of 255 I-7000/87K remote I/O modules can connect to one PAC. (*)  |
| M-7000 Series Modbus I/O   | A max. of 10 RS-485 ports can support M-7000 I/O. Each port can connect to up to 32 M-7000 Modules.  |
| Modbus TCP/IP I/O  | LAN2 supports ICP DAS Ethernet I/O: I-8KE4-MTCP and I-8KE8-MTCP. If LAN2 malfunctions, it will automatically switch to LAN1 to continuously work. (The IP address for LAN1 and LAN2 should be set in the same IP domain)(FAQ-042)                          |
| Send Email   | Provide functions to send email with a single attached file via the Ethernet port.   |
| Ebus   | LAN2 can be used to exchange data between ICP DAS ISaGRAF Ethernet PACs via the Ethernet port.   |
| UDP Server & UDP Client : Exchange Message & Auto-report   | LAN1 or LAN2 support UDP Server and UDP Client protocols allowing messages to be sent/received to/from a PC/HMI or other device. For example, data can be automatically reported to the InduSoft's RXTX driver.  |
| TCP Client : Exchange Message & Auto-report  | LAN1 or LAN2 supports the TCP Client protocol allowing messages to be sent/received to/from a PC/HMI or other device that supports the TCP server protocol. Ex: automatically report data to InduSoft's RXTX driver, or to connect a location camera.      |
| SQL Client   | Support for the SQL Client function that allows data to be written (or read from) a Microsoft SQL Server (2000 SP3, 2005, 2008).   |
| CAN/CANopen  | COM1, COM3 can connect to one I-7530 (converter: RS-232 to CAN) to support CAN/CANopen devices and sensors. One WP-5xx7 supports a max. of 10 RS-232 ports to connect a max. of 10 I-7530. (FAQ-086)   |
| FTP Client   | Enable the FTP Client to upload files from the PAC to a remote FTP server on a PC. (FAQ-151)   |
| eLogger HMI  | Provide support for the eLogger HMI. The user can design the HMI screen using the eLogger on the PC and then download it to the PAC to display the HMI on the PAC. (FAQ-115)   |
| * ISaGRAF FAQ: <a href="http://www.icpdas.com">www.icpdas.com</a> > Support > FAQ > ISaGRAF Soft-Logic PAC |  |
| * ICP DAS recommends using NS-205/208 or RS-405/408 (Ring Switch) Industrial Ethernet Switches.            |  |

## Ordering Information

|                  |   |
|------------------|---|
| WP-5147-EN CR    | ISaGRAF based WinPAC-5000 (English Version of OS) (RoHS)                        |
| WP-5147-OD-EN CR | ISaGRAF based WinPAC-5000 with Audio (English Version of OS) (RoHS)             |
| WP-5147-TC CR    | ISaGRAF based WinPAC-5000 (Traditional Chinese Version of OS) (RoHS)            |
| WP-5147-OD-TC CR | ISaGRAF based WinPAC-5000 with Audio (Traditional Chinese Version of OS) (RoHS) |
| WP-5147-SC CR    | ISaGRAF based WinPAC-5000 (Simplified Chinese Version of OS) (RoHS)             |
| WP-5147-OD-SC CR | ISaGRAF based WinPAC-5000 with Audio (Simplified Chinese Version of OS) (RoHS)  |