



### Features

- PXA270, 520 MHz CPU, or compatible
- Windows CE.NET 5.0 Core
- ISaGRAF Ver.3 SoftLogic Inside (IEC 61131-3)
- Support Soft-GRAF 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

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

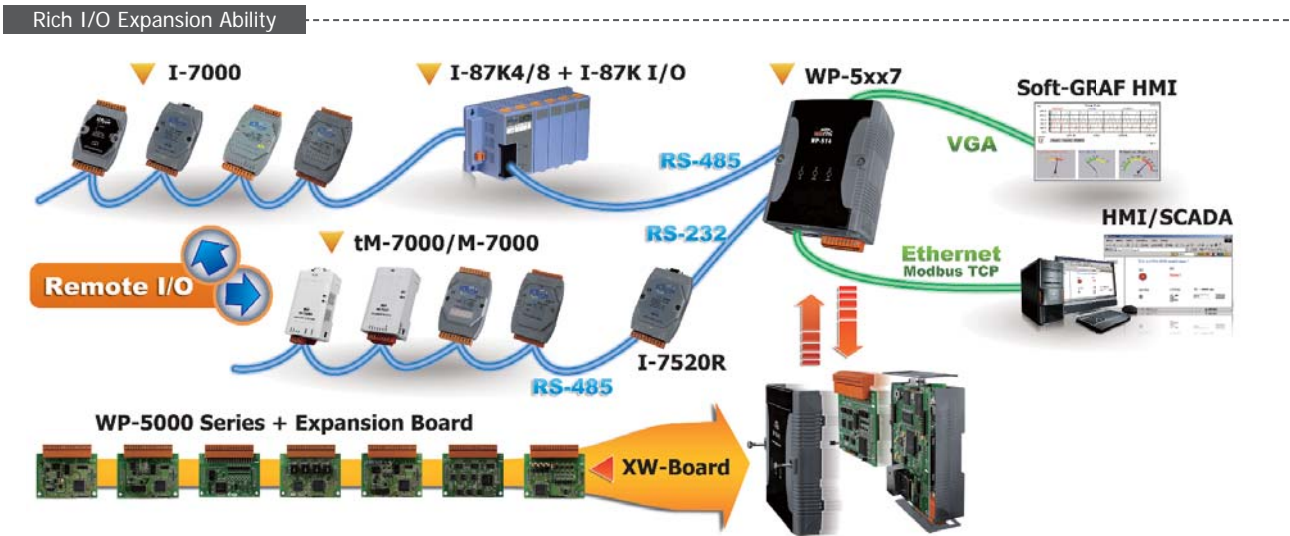
ISaGRAF is the most powerful SoftLogic package on the market. ISaGRAF is a PLC-like software and it supports IEC 61131-3 standard PLC programming languages ( LD, FBD, SFC, ST, IL, FC), and can run the application generated by the workbench on any ISaGRAF PACs.

The ISaGRAF workbench Ver. 3.x features:

- IEC 61131-3 Standard Open PLC Programming Languages (LD, FBD, SFC, ST, IL, FC) + Flow Chart (FC)
- On-Line Debug/Control/Monitor, Off-Line Simulation
- Simple Graphic HMI



### Applications

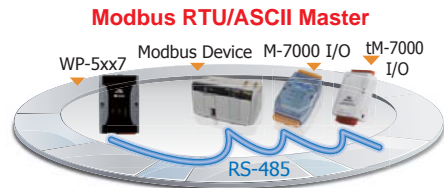


## Applications

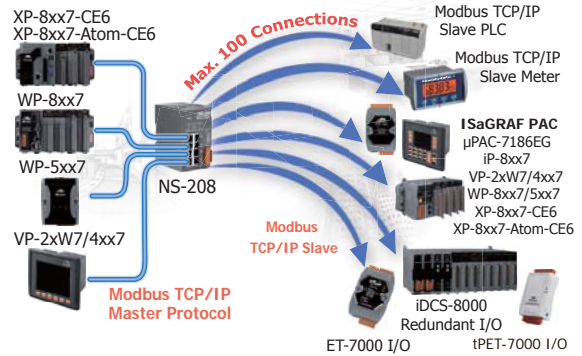
### Soft-GRAF Studio Colorful HMI



### Modbus Master Port

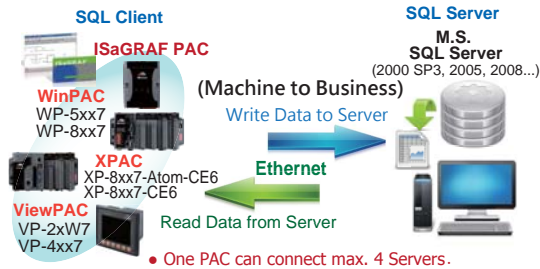


### Modbus TCP/IP Master

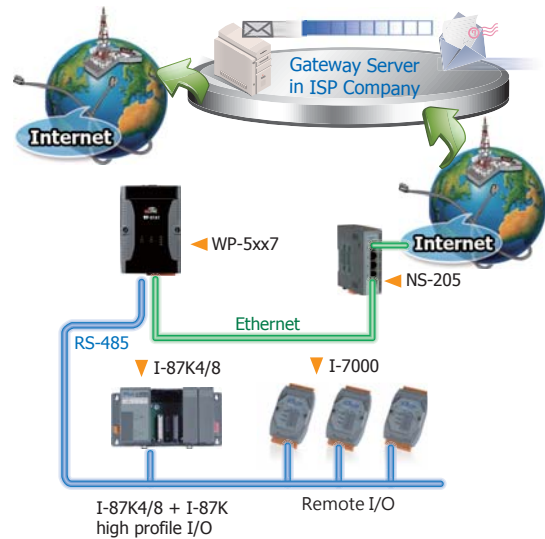


### Database Application

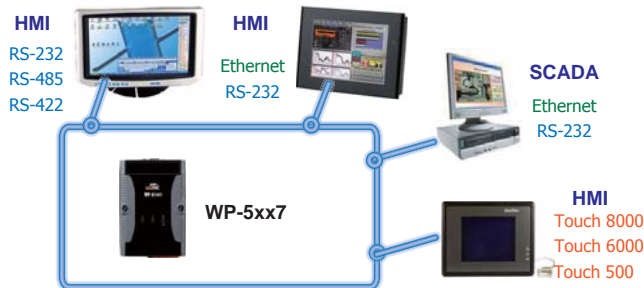
#### SQL Server Communication Application



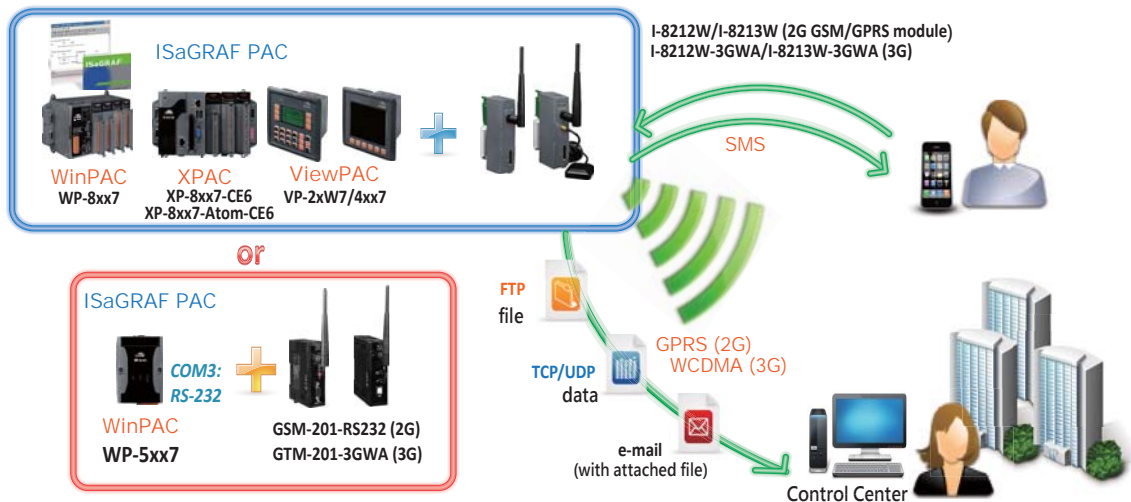
### Send Email with one Attached File



### Modbus Slave : RTU/TCP Slave



### 2G/3G Wireless Application



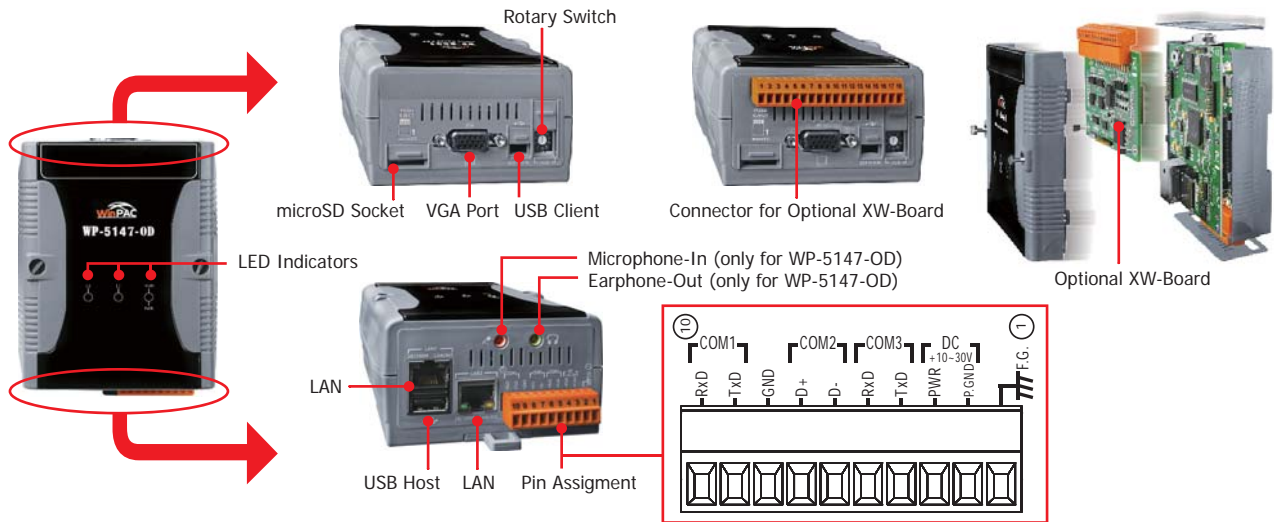
## Specifications

Models	WP-5147	WP-5147-OD
<b>System Software</b>		
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	
<b>Development Software</b>		
ISaGRAF Software	ISaGRAF Ver.3	IEC 61131-3 standard.
	Languages	LD, ST, FBD, SFC, IL & FC; Support Soft-GRAF HMI: XP-8xx7-CE6, XP-8xx7-Atom-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)	
<b>CPU Module</b>		
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 2 LEDs for user programmable	
Rotary Switch	Yes (0 ~ 9)	
<b>VGA &amp; Communication Ports</b>		
VGA	Yes 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 (RxD, TxD and GND); Non-isolated	
COM 2	RS-485 (Data+, Data-); 2500 VDC isolated	
COM 3	RS-232 (RxD, TxD and GND); Non-isolated	
<b>I/O Expansion</b>		
I/O Expansion Bus	Yes, to mount one optional XW-Board. No supporting XW5xx board (i.e. XW506, XW507, XW508, XW509, XW511i, XW514)	
<b>Mechanical</b>		
Dimensions (W x L x H)	91 mm x 132 mm x 52 mm	
Installation	DIN-Rail Mounting	
<b>Environmental</b>		
Operating Temperature	-25 ~ +75°C	
Storage Temperature	-30 ~ +80°C	
Ambient Relative Humidity	10 ~ 90% RH (non-condensing)	
<b>Power</b>		
Input Range	+10 ~ +30 VDC	
Isolation	1 kV	
Consumption	4.8 W	6 W

## Option Accessories

ISaGRAF Development Software		
ISaGRAF-256-E	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with One Application Book (English version) and one USB Dongle	
ISaGRAF-256-C	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with One Application Book (Chinese version) and one USB Dongle	
ISaGRAF-32-E	ISaGRAF Workbench Software Ver.3 (32 I/O Tags) with One Application Book (English version)	
ISaGRAF-32-C	ISaGRAF Workbench Software Ver.3 (32 I/O Tags) with One Application Book (Chinese version)	
Note: No upgrade service from ISaGRAF-32 to ISaGRAF-256. (Using ISaGRAF-32 can control more than 32 I/O tags. Please refer to ISaGRAF User's Manual Ch. 3.4)		
Accessories		
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 (some protocols need optional devices)	
NET ID	1~255, user-assigned by software
Modbus TCP/IP Master	Link to max. 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. Max. 10 ports
Modbus RTU Slave	Max. 5 Ports
Modbus TCP/IP Slave	Ethernet LAN1 & LAN2 support total up to 32 connections. When one Ethernet port is broken, the other one can still connect to PC/HMI.
Web HMI Protocol	Ethernet Ports for connecting PC running Internet Explorer
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 and RU-87Pn + I-87K High Profile I/O boards as Remote I/O. Max. 255 modules for one controller.
M-7000 Series Modbus I/O	Max. 10 RS-485 ports can support M-7000 I/O. Each port can connect 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 is broken, it will switch to LAN1 automatically to continuously work. (LAN1 & LAN2's IP are requested set in the same IP domain) (FAQ-042)
Send Email	Supports functions to send email with one attached file via Ethernet port.
Ebus	LAN2 to exchange data between ISaGRAF Ethernet PAC via Ethernet port.
UDP Server & UDP Client : Exchange Message & Auto-Report	LAN1 or LAN2 supports UDP Server and UDP Client protocol to send/receive message to/from PC/HMI or other devices.
TCP Client : Exchange Message & Auto-Report	LAN1 or LAN2 supports TCP Client protocol to send/receive message to/from PC/HMI or other devices which support TCP server protocol. Ex: automatically report data to InduSoft's RXTX driver, or to connect a location camera.
Soft-GRAF HMI	Support the Soft-GRAF HMI. User can use the Soft-GRAF Studio on the PC to design the HMI screen and then download it to the PAC to display the HMI on the PAC screen via the VGA port. (FAQ-146)
SQL Client	Support SQL Client function to write data to (or read data from) Microsoft SQL Server (2000 SP3, 2005, 2008).
User-Defined Protocol	COM1 ~ COM3 by Serial communication function blocks.
CAN/CANopen	COM1, COM3 can connect one I-7530 (converter: RS-232 to CAN) to support CAN/CANopen devices and sensors. One WP-5xx7 supports max.10 RS-232 ports to connect max. 10 I-7530. (FAQ-086)
FTP Client	Support FTP client to upload files in the PAC to a remote FTP server on PC. (FAQ-151) Soft-GRAF's g_Alarm & g_Logger1 HMI objects support FTP client, too. (FAQ-146)

\* Note: COM5 ~ COM12 are resided at the optional expansion XW-Board series if it is plugged inside the WP-5xx7.  
 \* ISaGRAF FAQ: <http://www.icpdas.com/faq/isagraf.htm>  
 \* Recommend to use NS-205/208 or RS-405/408 (Ring Switch) Industrial Ethernet Switch.

## 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)