



### Features

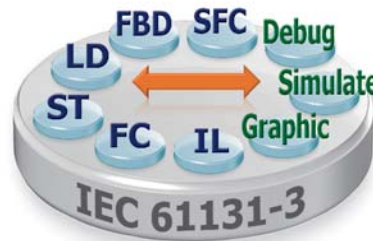
- PXA270, 520 MHz CPU, or compatible
- Windows CE .NET 5.0 Core
- Embedded ISaGRAF Ver.3 SoftLogic (IEC 61131-3)
- Support Soft-GRAF HMI
- Hard Real-Time Capability
- 64-bit Hardware Serial Number for Software Protection
- Microphone-In and Earphone-out
- I/O Expansion Bus
- VGA Port Output
- Dual 10/100M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

### Introduction

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.

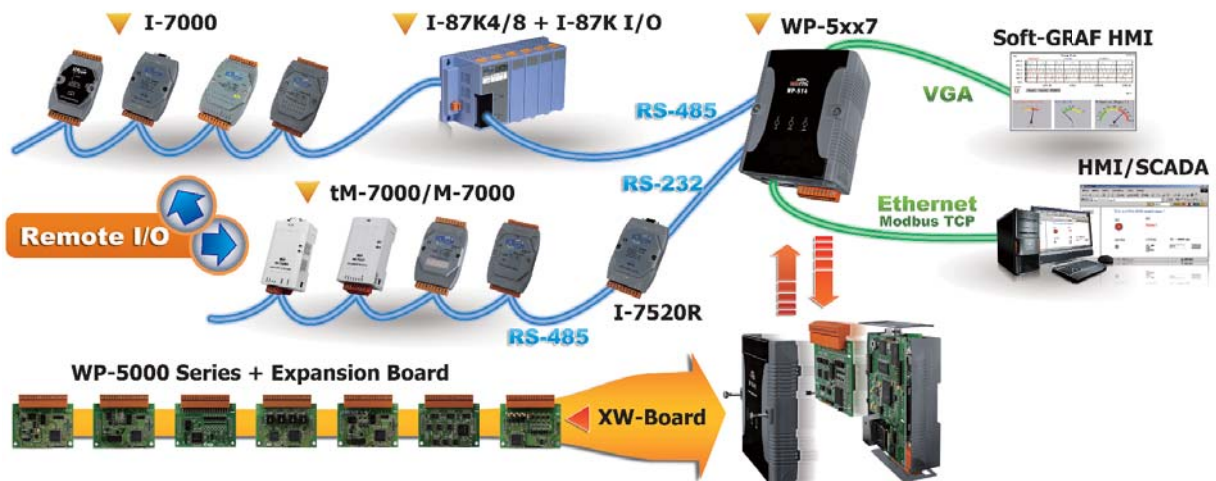
The features of the ISaGRAF workbench Ver. 3.x include:

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



### Applications

Rich I/O Expansion Ability



## Applications

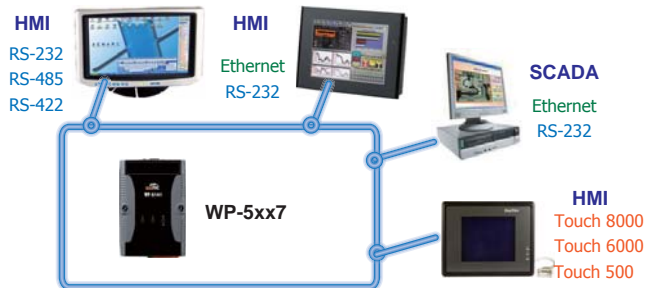
### Soft-GRAF Studio Colorful HMI



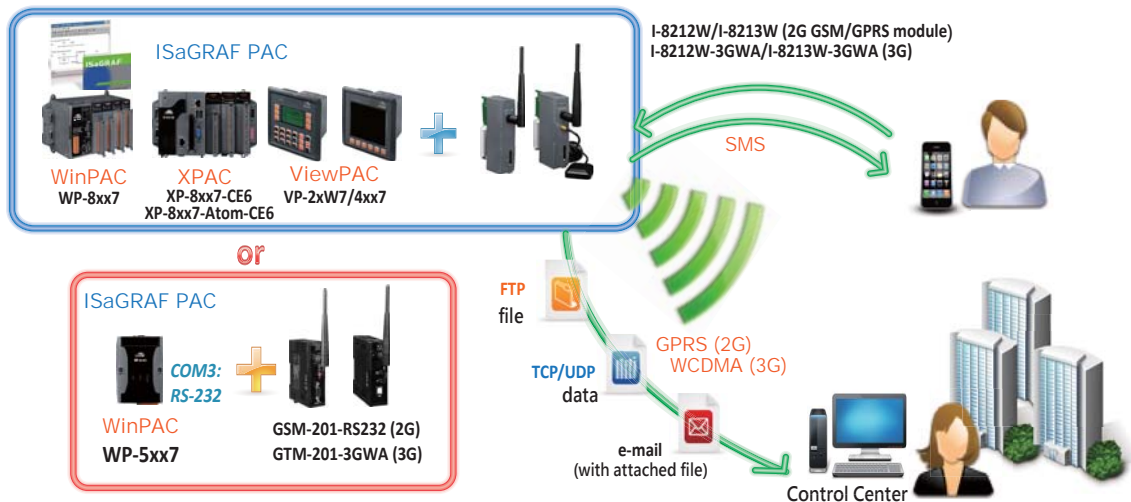
### Schedule Control



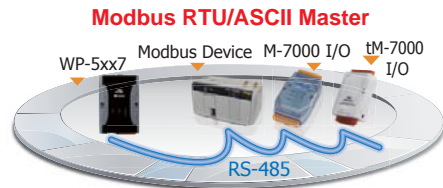
### Modbus Slave : RTU/TCP Slave



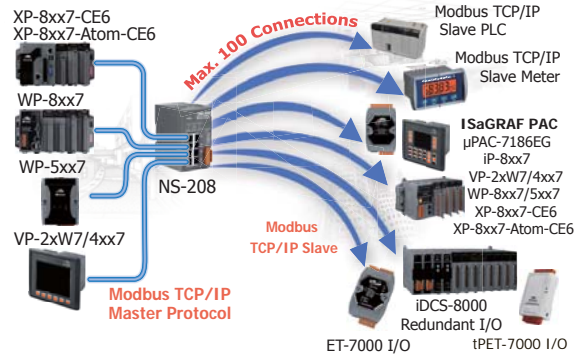
### 2G/3G Wireless Application



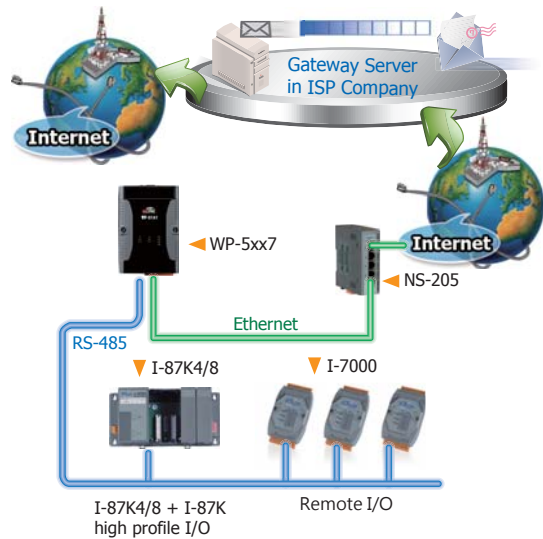
### Modbus Master Port



### Modbus TCP/IP Master



### Send Email with one Attached File



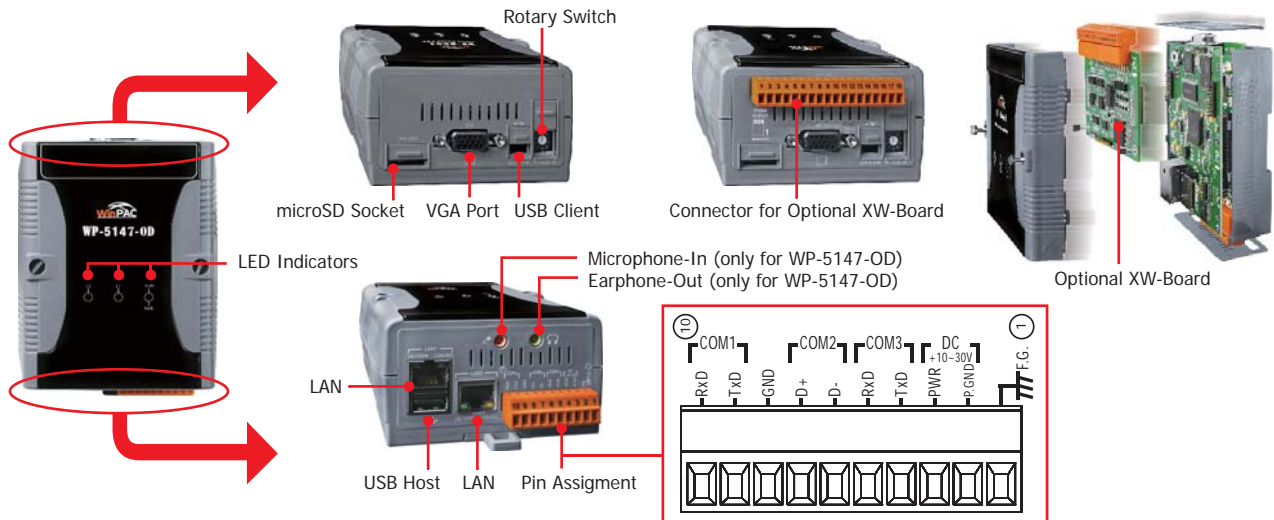
## Specifications

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

## Software and Accessories

ISaGRAF Development Software	
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.)	
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 (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) The Soft-GRAF g_Alarm and g_Logger1 HMI objects also support FTP Client. (FAQ-146)
Soft-GRAF HMI	Provide support for the Soft-GRAF HMI. The user can design the HMI screen using the Soft-GRAF Studio on the PC and then download it to the PAC to display the HMI on the PAC. (FAQ-146)

\* ISaGRAF FAQ: [www.icpdas.com](http://www.icpdas.com) > 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)