

I-8437-80/8837-80 Ethernet ISaGRAF PAC

I-8437-80 :



- ISaGRAF Ver. 3 SoftLogic Inside
- Support IEC 61131-3 + Flow Chart
- MiniOS7 Inside
- 80186-80 MHz CPU
- SRAM : 512 KB
- Flash : 512 KB
- I/O Slot: 4/8

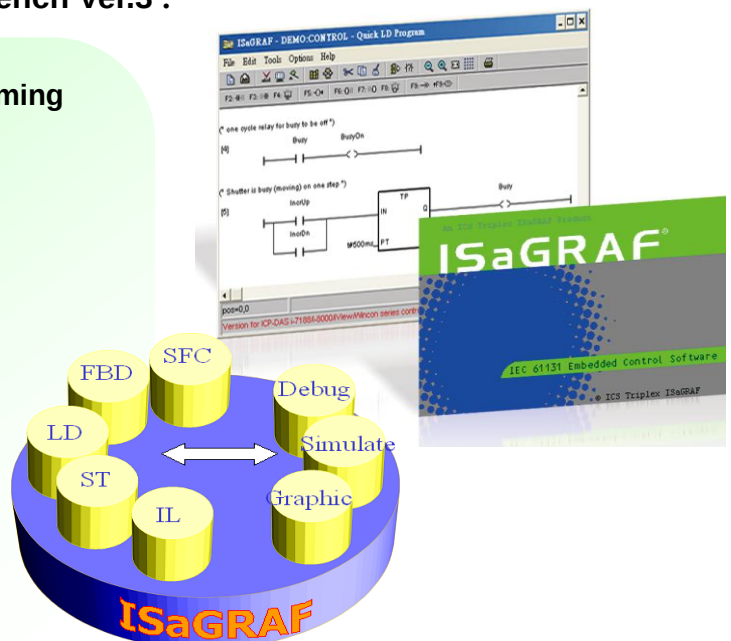
I-8837-80 :



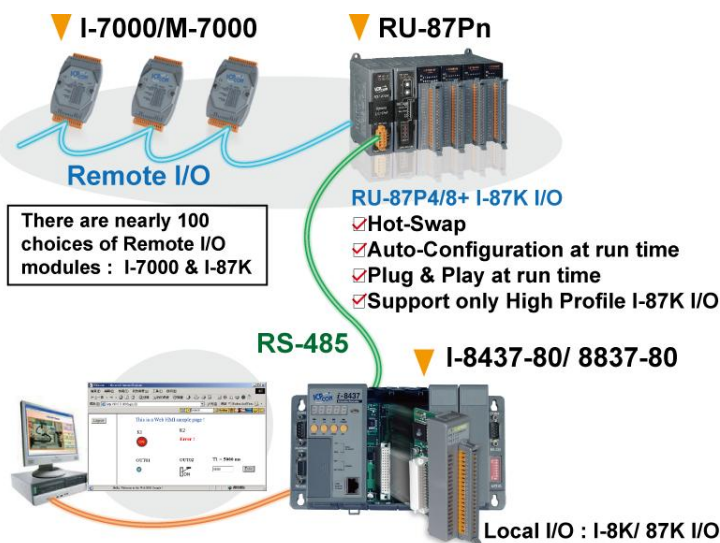
The I-8437-80/8837-80 is an Ethernet ISaGRAF PAC and includes ISaGRAF SoftLogic. It has one 10M Ethernet port, one RS-232/485 port and two RS-232 ports. The user can choose *Local I/O modules*: I-8K/I-87K I/O modules and *RS-485 Remote I/O modules*: I-7000 or expansion units (I-87Kn or RU-87Pn) plugged with I-87K serial I/O modules. Compared to I-8437/8837, I-8x37-80 is 2 ~ 4 times faster!

The ISaGRAF PAC supports ISaGRAF Workbench Ver.3 :

- IEC 61131-3 Standard Open PLC Programming Languages + Flow Chart:
 1. Ladder
 2. Function Block
 3. SFC
 4. ST
 5. IL
 6. Flow Chart.
- Auto-Scan I/O
- On-line debugging
- On-line control / monitoring
- Off-line simulation
- Simple graphic HMI



● Local/Remote I/O Application



● Modbus Master

(RTU, ASCII, RS-232/485/422)

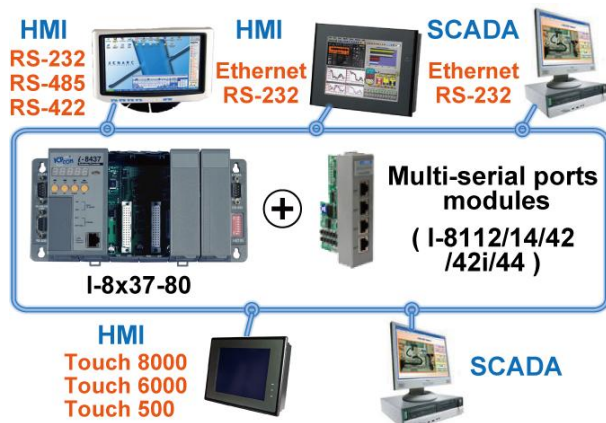
- Support **2** Modbus Master ports at the same time
- COM1, COM3, COM4 or **COM5** (if plugged one I-8112/8114/8142/8144/8142i board)
- Can link to Modbus PLC or M-7000 I/O or Modbus devices (Power meter, temperature controller, inverter...)

▼ I-8437-80 ▼ Modbus Device ▼ Modbus PLC



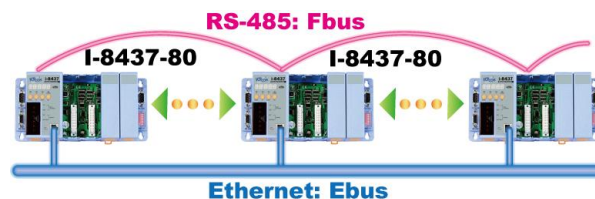
● Modbus RTU/TCP Slave Ports

- Modbus RTU** : max. **2** PC/HMI/SCADA connection
- Modbus TCP/IP**: max. **4** PC/HMI/SCADA connection

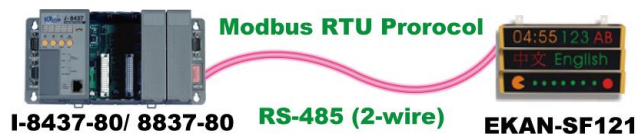


● Data Exchange: Ethernet & RS-485

- Through Ethernet: Ebus
- Through RS-485: Fbus
- PAC to PAC

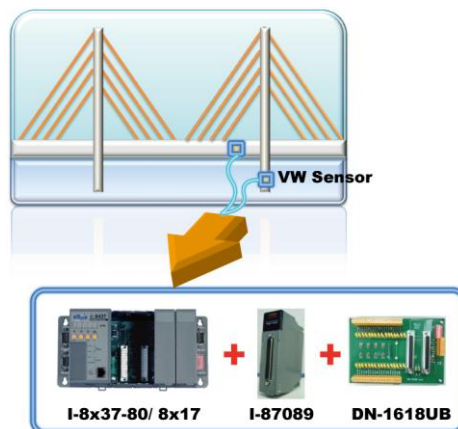


● Support EKAN Modbus LED



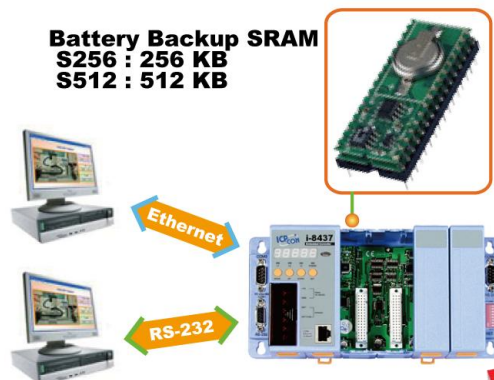
● Stress Monitoring Application of Constructions

More at www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) - 091



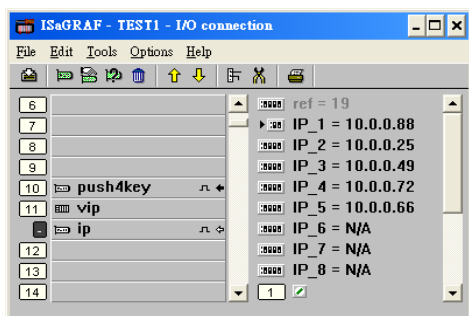
● Data-Recorder & Data-Logger

ICP DAS provides a freeware "UDLoader.exe" to load the data stored in I-8x37-80 + S256/S512 via RS-232 or Ethernet.



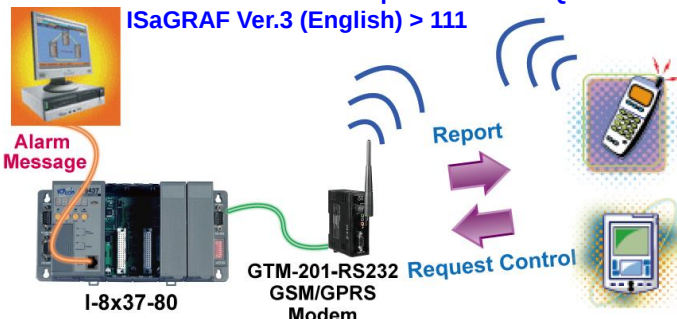
● VIP Communication Security

Set VIP (Very Important IP No.) for Modbus TCP/IP security.



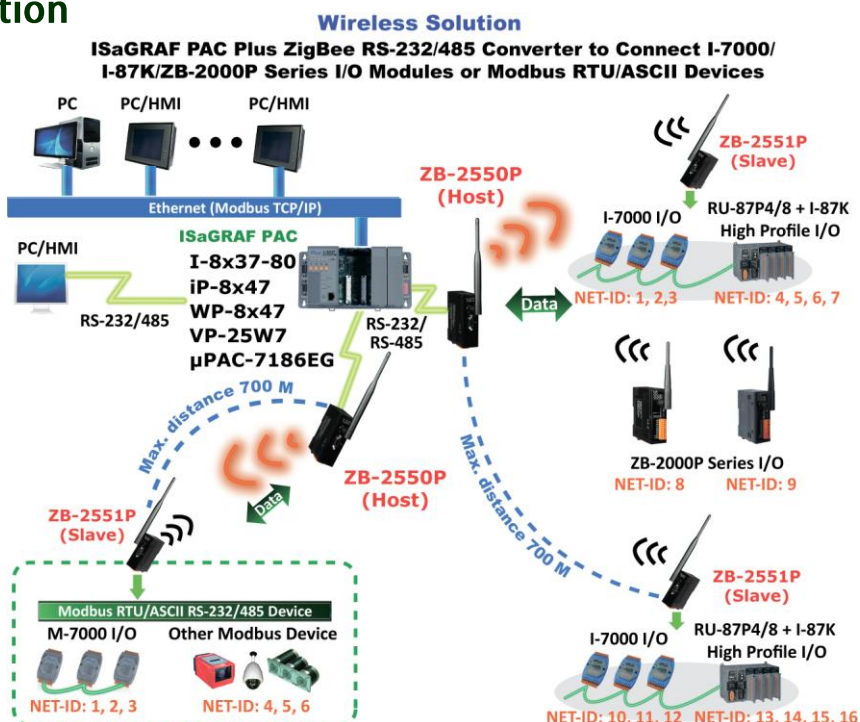
● SMS: Short Message Service

- Short message can be sent in multiple language format (like Chinese, English,.....others).
- Please refer to www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) > 111



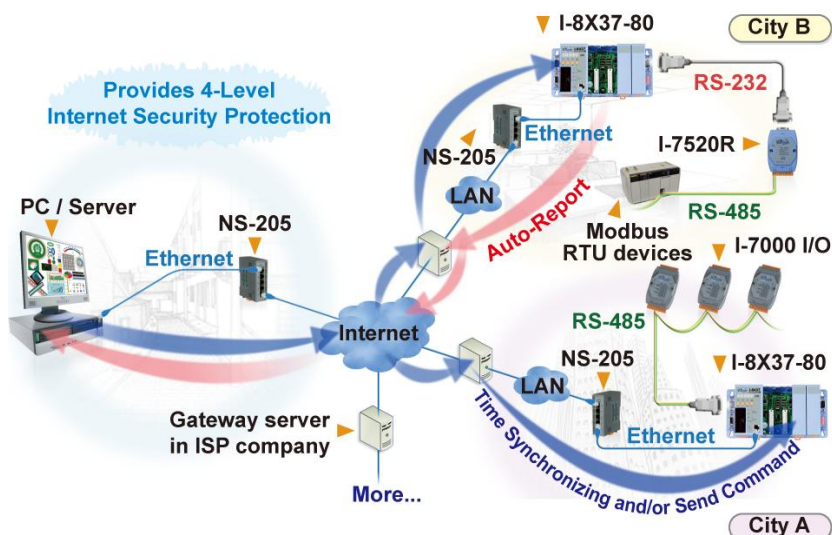
● ZigBee Wireless Communication

- The iP-8xx7 plus ZB-2550P and ZB-2551P RS-232/ 485 Converters can apply wireless communication, reduce the wiring cost, and achieve the mission of remote I/O control and data acquisition.
- Please refer to www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) > 110



● Auto-Report Acquisition Data & Control Data

Stable and Cost-effective Data Acquisition Auto-Report System



- I-8X37-80 PAC can use UDP/IP to auto-report acquisition data & control data to local or remote internet PC/Server.

Advantage: Every I-8X37-80 in the different location doesn't need a fixed IP.

- Please refer to www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) > 065

► Specifications of I-8437-80 & I-8837-80 **ISaGRAF® PAC**

Power Supply	
Protection	Power reverse polarity protection
Input Range	+10 ~ +30 VDC
Power Consumption	20 W (when I/O slots are empty)
General Environment	
Temperature	Operating: -25 ~ +75 °C, Storage : -30 ~ +80 °C
Humidity	5 ~ 90 % RH (non-condensing)
System	
CPU	80186, 80 MHz, or compatible
Watchdog Timer	Yes
RTC (Real Time Clock)	Provide second, minute, hour, date, day of week, month & year
SRAM	512 KB
FLASH Memory	512 KB, Erase unit is 64 KB, 100,000 erase/write cycles
NVRAM	31 bytes, battery backup, data valid up to 10 years
EEPROM	2048 bytes, retention > 100 years. 1,000,000 erase/write cycles
SMMI	5-digit 7-Seg. LED, four push buttons & three LED on the front panel. It can display message, value, input value, simulate input & output.
I/O Slots	4 empty slots for I-8437-80, 8 empty slots for I-8837-80. Accept parallel & serial I/O boards
NET ID	8-pin DIP switch to set NET ID as 1 ~ 255
Serial Ports	
COM1	RS-232: TxD, RxD, GND, Speed: 115200 bps max. Program downloads port.
Ethernet	10 Mbps, NE2000 compatible, 10 Base-T, Program download port.
COM3	Can be configured as RS-232 or RS-485, Speed: 115200 bps max. Program downloads port. RS-232: TxD,RxD,RTS,CTS,GND, RS-485: DATA+, DATA-,
COM4	RS-232: Full modem signals, 115200 bps max. TxD,RxD,RTS,CTS,DSR,DTR,CD,RI,GND.
Development Software	
ISaGRAF Version 3	IEC 61131-3 standard. Languages: LD, ST, FBD, SFC, IL & FC
Max. Code Size	Accept max. 64 KB ISaGRAF code size (Appli.x8m must < 64 KB)
Motion Control	
	Integrate with one I-8091(2-axis) or two I-8091(4-axis) to do motion control. When doing motion control, the Ethernet communication is not available.
PWM Output	
Pulse Width Modulation Output	8-ch max. for one controller. 500 Hz max. for Off=1 & On=1 ms Output square wave: Off: 1 ~ 32767 ms, On: 1 ~ 32767 ms Optional D/O boards: I-8037, 8041, 8042, 8054, 8055, 8056, 8057, 8060, 8063, 8064, 8065, 8066,8068, 8069 (Relay Output boards cannot generate fast square wave)
Counters	
Parallel DI Counter	8-ch max. for 1 controller. Counter val: 32-bit. 500 Hz max. Min. ON & OFF width must >1ms Optional DI boards: I-8040, 8042, 8051, 8052, 8053, 8054, 8055, 8058, 8063, 8077
Serial DI Counter	Counter input: 100 Hz max. Counter value: 0 ~ 65535 (16-bit) Optional serial I-87K DI boards: I-87040, 87051, 87052, 87053, 87054, 87055, 87058, 87063
Remote DI Counter	All remote I-7000 & I-87K DI modules support counters. 100 Hz max. value: 0 ~ 65535
High Speed Counter	I-87082: 100 kHz max. 32-bit, I-8080: 450 kHz max. 32-bit
Protocols	
Modbus Master Protocol	Up to 2 COM Ports (COM1,COM3,COM4 and COM5 in multi-serial port board) can support Modbus RTU/ASCII Master protocol to connect to other Modbus Slave devices
Modbus Slave Protocol	Up to 2 COM Ports (COM1 and COM3) can support Modbus RTU Slave protocol for connecting ISaGRAF, PC/HMI/OPC Server & MMI panels.

► Specifications of I-8437-80 & I-8837-80 **ISaGRAF® PAC**

Modbus TCP/IP Protocol	Ethernet port support Modbus TCP/IP Slave protocol for connecting ISaGRAF & PC/HMI.
Remote I/O	One of COM3 or COM4 supports I-7000 I/O modules & (I-87K base + I-87K serial I/O boards or RU-87P1/2/4/8 + I-87K High Profile I/O cards) as Remote I/O. Max. 64 Remote I/O modules for one controller
Fbus	Built-in COM3 Port to exchange data between ICP DAS's ISaGRAF PACs
Ebus	To exchange data between ICP DAS's ISaGRAF Ethernet PACs via Ethernet port.
SMS: Short Message Service	One of COM4 or COM5 can link to a GSM modem to support SMS. User can request data/control the controller by cellular phone. The controller can also send data & alarms to user's cellular phone. Optional GSM modems: GTM-201-RS232 (850/900/1800/1900 GSM/GPRS External Modem)
User Defined Protocol	User can write his own protocol applied at COM1, COM3, COM4 (& COM5 ~ COM20 if multi-serial port boards are plugged) by serial communication function blocks.
Modem_Link	Supports PC to remotely download & monitor the controller through a normal modem.
MMICON/LCD	One of COM3 or COM4 supports ICP DAS's MMICON. The MMICON is featured with a 240 x 64 dot LCD and a 4 x 4 Keyboard. User can use it to display picture, string, integer, float, and input a character, string, integer and float.
Redundant System	Two ISaGRAF PACs can link to Remote I-7000 & I-87K I/O modules at the same time. Only one controller is active to control these Remote I/Os. If one is dead, the other one will take over the control of Remote I/Os. Please refer to www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) FAQ. 084.

Battery Backup SRAM

I-8437-80/8837-80 can support up to 1024 retain variables with a S256/S512 plug in the socket of the back-plane. Data can also be stored in the S256/S512, and then PC can load these data via COM1 or Ethernet. PC can also download pre-defined data to the S256/S512.

Optional: S256: 256 KB, S512: 512 KB

► Ordering Information

Ethernet ISaGRAF PAC	I-8437-80 (blue) I-8437-80-G (gray)	4 slots Faster CPU (80 MHz) Ethernet ISaGRAF PAC
	I-8837-80 (blue) I-8837-80-G (gray)	8 slots Faster CPU (80 MHz) Ethernet ISaGRAF PAC

SRAM	S256/S512	256 KB/512 KB Battery Backup SRAM
Application 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)
Ethernet Switch	NS-205/NS-208	Unmanaged 5-port/8-port Industrial 10/100 Base-T Ethernet Switch with Plastic Case (RoHS)

Note: 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.)