



- **ISaGRAF Ver.3 SoftLogic Inside**
- **Support IEC 61131-3 + Flow Chart**
- **MiniOS7 Inside**
- **80188, 40 MHz CPU**



I-7188XG series is a palm-size ISaGRAF PAC and includes ISaGRAF SoftLogic. It has 2 Serial ports (COM1:RS-232/RS-485 & COM2:RS-485). The user can choose I/O expansion board, X-Board, to expand the I/Os or memories of I-7188XG.

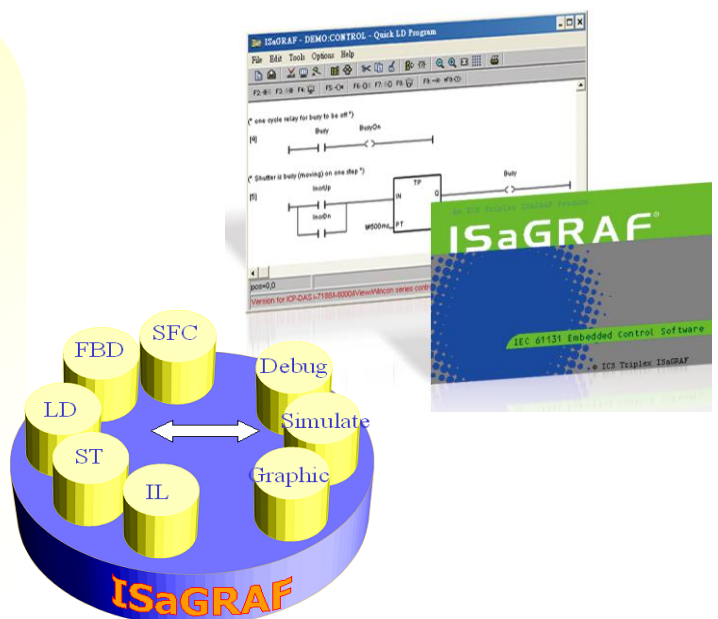
I-7188XG supports Modbus Serial protocol, Modbus Master protocol, Fbus:RS-485, Remote I/O, SMS: Short Message Service, modem link, MMICON/LCD and user defined protocol.

ISaGRAF μ PAC supports ISaGRAF Ver.3 Workbench :

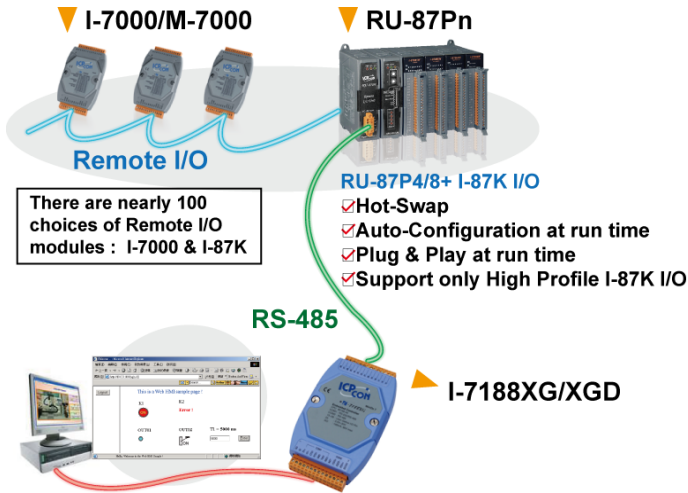
- **IEC 61131-3 Standard Open PLC Programming Languages + Flow Chart.**

1. Quick Ladder Diagram (LD)
2. Function Block Diagram (FBD)
3. Sequential Function Chart (SFC)
4. Structured Text (ST)
5. Instruction List (IL)
6. Flow Chart (FC)

- Simulate program even without controller
- Debug on-line
- Control on-line
- Simple graphic HMI



● Remote I/O Application



● Data Exchange: Fbus (RS-485)

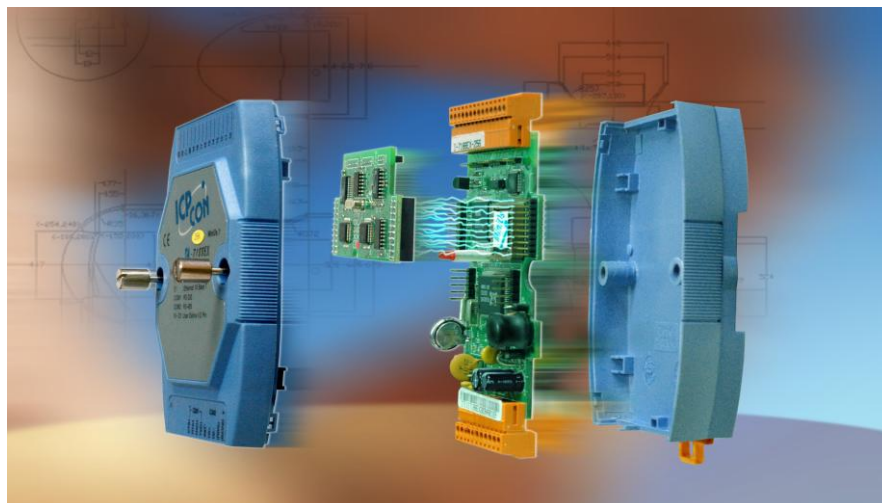
- Through RS-485: Fbus
- PAC to PAC



● Support I/O Expansion Board: X-Board Series

Inserting one I/O expansion board in I-7188XG can add :

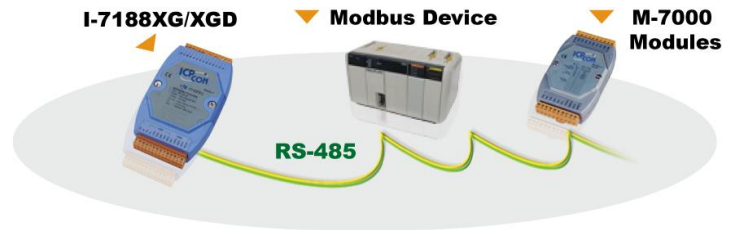
- **More I/O channels:** X107, X109, X110, X111, X116, X119, X202, X203, X303, X304, X305, X308, X310
- **More COM Ports:** X503, X504, X505, X506, X507, X508, X509, X510, X510-128, X511, X518, X560, X561
- **More NVRAM:** X607, X608
- **24-bit encoders:** X702 (2-axis), X703 (3-axis)



● Modbus Master

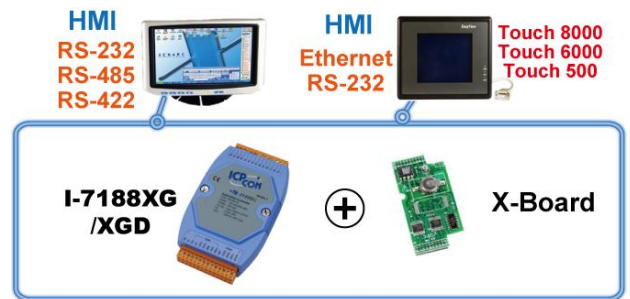
(RTU, ASCII, RS-232/485/422)

- Max. **2** COM Ports (COM2: RS-485 & COM3: if X-board is plugged in)
- Can link to Modbus PLC or M-7000 I/O or Modbus devices (Power meter, temperature controller, inverter...)

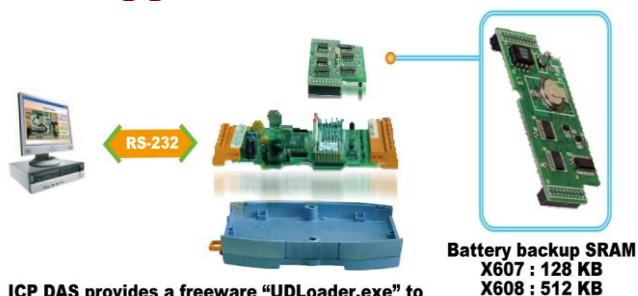


● Modbus RTU Slave Ports

- Modbus RTU (RS-232/485/422) : max. **2** COM Ports



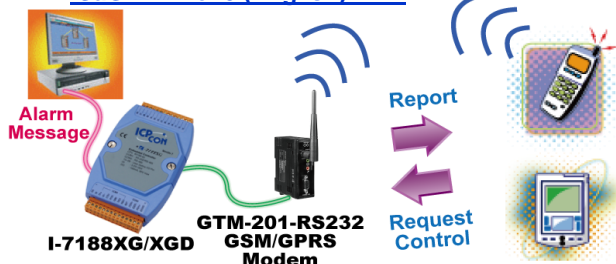
● Data Recorder and Data Logger



ICP DAS provides a freeware "UDLoader.exe" to load the data stored in I-7188XG+X607/608 via RS-232 or Ethernet to PC.

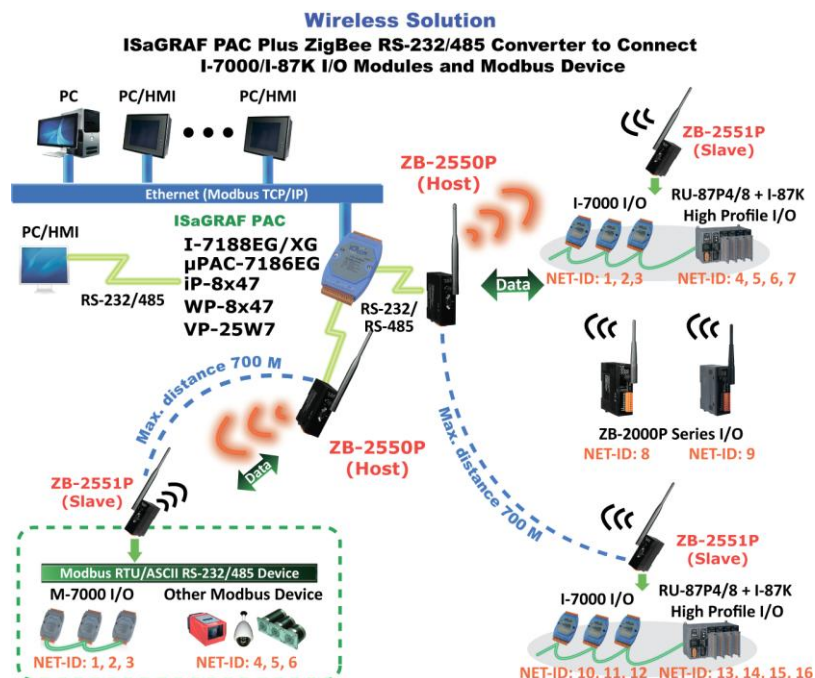
● SMS: Short Message Service

- Short message can be sent in local language format (like Chinese, English... others)
- More at www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) - 111



● ZigBee Wireless Solution

- ISaGRAF PAC plus ZB-2550P and ZB-2551P converters (ZigBee to RS-232/485)
- Please refer to www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) - 110 for more information



Ordering Information

I-7188XG CR	ISaGRAF Palm-Size Programmable Automation Controller (RoHS) 80188, 40 MHz (blue)
I-7188XG-G CR	ISaGRAF Palm-Size Programmable Automation Controller (RoHS) 80188, 40 MHz (gray)
I-7188XGD CR	ISaGRAF Palm-Size PAC with 5-digit 7-segment display (RoHS) 80188, 40 MHz (blue)
I-7188XGD-G CR	ISaGRAF Palm-Size PAC with 5-digit 7-segment display (RoHS) 80188, 40 MHz (gray)

Accessories

* Using ISaGRAF-32 can control more than 32 I/O tags.
(Please refer to ISaGRAF User's Manual Ch. 3.4)

ISaGRAF-256-E	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with USB Dongle and English application book
ISaGRAF-256-C	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with USB Dongle and Chinese application book
ISaGRAF-32-E	ISaGRAF Workbench Software Ver.3 (32 I/O Tags) with English application book (Note)
ISaGRAF-32-C	ISaGRAF Workbench Software Ver.3 (32 I/O Tags) with Chinese application book (Note)
ISaGRAF Book-E	ISaGRAF application book (English version)
ISaGRAF Book-C	ISaGRAF application book (Chinese version)
X607 CR	128 KB battery backup SRAM (RoHS)
X608 CR	512 KB battery backup SRAM (RoHS)
RU-87P1/2/4/8 CR	Remote Intelligent I/O Expansion Unit (It used to expand I-87K series I/O modules over the RS-485)

Note: No upgrade service from ISaGRAF-32 to ISaGRAF-256.

Specifications of I-7188XG & I-7188XGD



Power Supply	
Protection	Power reverse polarity protection
Input Range	+10 ~ +30 V _{DC}
Power Consumption	I-7188XG: 2 W , I-7188XGD: 3 W (when I/O slots are empty)
General Environment	
Temperature	Operating: -25°C ~ +75°C; Storage : -30°C ~ +80°C
Humidity	5% ~ 90 % RH (non-condensing)
System	
CPU	80188, 40 MHz, or compatible
Watchdog Timer	Yes
Real Time Clock	Gives hour, minute, sec, day of week / month, month & year (1980 ~ 2079)
SRAM	512 KB
FLASH Memory	512 KB. Erase unit is 64 KB, 100,000 erase/write cycles
NVSRAM	31 bytes, battery backup, data valid up to 10 years
EEPROM	2048 bytes, retention > 100 years. 1,000,000 erase/write cycles
Display for I-7188XGD	5-digit 7-Seg. LED on the front. It can display message & value.
Expansion I/O Bus	One optional X-board series I/O board can be plugged inside the I-7188XG/7188XGD.
NET ID	User-assigned by software, 1 ~ 255
Serial Ports	
COM1	Can be used as RS-232 or RS-485 , Speed: 115200 bps max. RS-232: TxD, RXD, RTS, CTS, GND RS-485: D1+, D1-, self-tuner inside Program downloads port.
COM2	RS-485: D2+, D2-, 115200 bps max. Self-tuner ASIC inside
Development Software	
ISaGRAF Version 3	IEC 61131-3 standard. Languages: LD, ST, FBD, SFC, IL & FC
Max. Code Size	I-7188XG/7188XGD accepts max. 64 KB ISaGRAF code size (Appli.x8m must < 64 KB)
PWM Output	
Pulse Width Modulation Output	All X-board series DO boards support PWM output. 8 channels max. for one controller. 500Hz max. for Off=1 & On=1 ms Output square curve: Off: 1 ~ 32767 ms, On: 1 ~ 32767 ms
Counters	
Parallel DI Counter	All X-board series DI boards support DI counter. 8 ch. max. for one controller. Counter value: 32 bit 500 Hz max. Min. ON & OFF width must > 1 ms
Remote DI Counter	All remote I-7000 & I-87K DI modules support counters. 100 Hz max. value: 0 ~ 65535
Remote High Speed Counter	Optional I-87082:100 kHz max. , 32 bit
Protocols	
Modbus Master Protocol	Up to 2 COM Ports (COM2 and COM3-in-X-board) support Modbus RTU / ASCII Master protocol to connect to other Modbus Slave I/O devices. Max. Mbus_ xxx Function Block amount: 64.
Modbus Slave Protocol	Up to 2 COM Ports (COM1 and one of COM2/COM3-in-X-board) can support Modbus RTU Slave protocol for connecting ISaGRAF, PC/HMI/OPC Server & MMI panels.
Remote I/O	One of COM2 (or COM3:RS-485 if found) supports I-7K, I-87K I/O modules as Remote I/O. I-87K series must plug on RU-87P(for High profile) or I-87K(for Low profile) I/O Unit. Max. 64 I/O modules for one PAC.
Fbus	Built-in COM2 Port to exchange data between ICP DAS's ISaGRAF PACs.
SMS: Short Message Service	One of (COM3:RS-232 or COM4:RS-232 if found) 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 modem: GTM-201-RS232 (GSM/GPRS Modem 850/900/1800/1900)
User Defined Protocol	User can write his own protocol applied at COM2 & (COM3 ~ COM8 if found) by Serial communication function blocks.
Modem_Link	Supports PC remotely download & monitor the controller through COM4 of X504.
MMICON / LCD	One of (COM3:RS-232 if found) 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.
Battery Backup SRAM	
	I-7188XG/7188XGD can support up to 1024 retain variables with an X607/X608 plug in the only expansion I/O slot.Data can be stored in X607/X608, and then PC can load these data via COM1. PC can also download pre-defined data to the X607/X608 Optional: X607: 128 KB, X608: 512 KB

