Features

- 80188, 40 MHz or 20 MHz CPU
- MiniOS7 Inside
- C Language Programming
  - ☐ Modbus Library
  - ☐ CAN Bus Library
- Various Storage Media
  - ☐ 512 KB Flash
  - ☐ 2 KB EEPROM
  - ☐ 31 Bytes NVRAM
- Various Communication Interfaces
  - ☐ RS-232/485
- 64-bit Hardware Serial Number
- I/O Expansion Bus
- Operating Temperature: -25 ~ +75°C

I-7188(D)

I-7188XA(D)

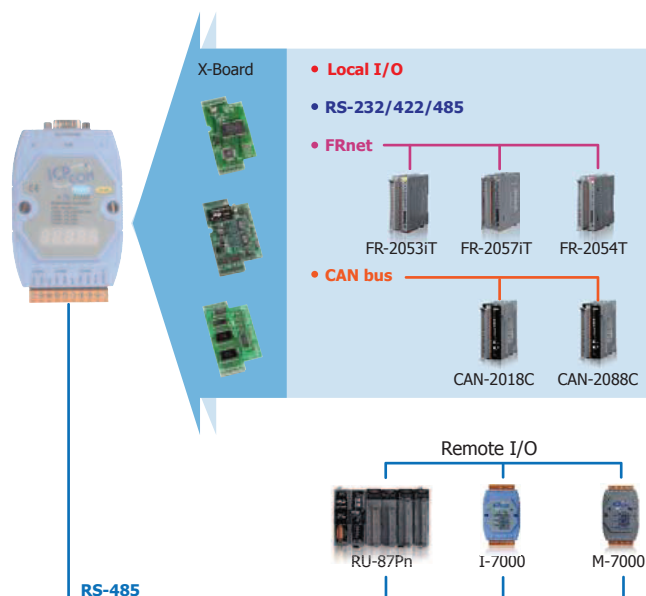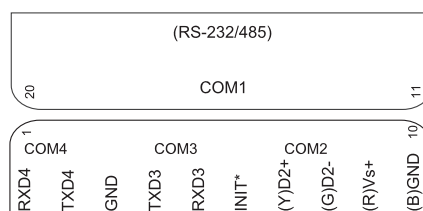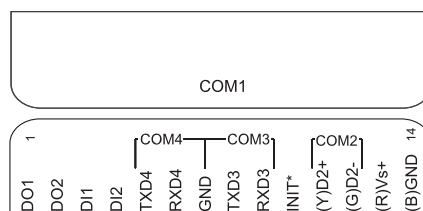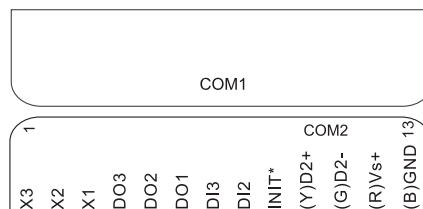**I-7188XC(D)**

I-7188XB(D)

Introduction

The I-7188 series is a palm-size PAC designed to work in harsh environment. It has a CPU, SRAM, Flash and several RS-232, RS-485 ports. With a DOS-like OS (MiniOS7) and a developed firmware running inside, the I-7188 can act like a small PC.

For the hardware expansion, it supports an I/O expansion bus to implement various I/O functions such as D/I, D/O, A/D, D/A, Timer/Counter, UART, flash memory, etc. Customers can develop their own I/O expansion boards or choose one of 50 available boards that ICP DAS has developed.

For the firmware developing, a 16-bit C compiler for 80188/80186 CPU and C language programming knowledge are needed. To shorten the developing time, there are many demo programs for reference. And for industrial applications, a Modbus library and CAN bus library are provided to ease the developing.

Applications

Rich I/O Expansion Ability

X-Board
- **Local I/O**
- **RS-232/422/485**
- **FRnet**

FR-2053iT FR-2057iT FR-2054T

- **CAN bus**

CAN-2018C CAN-2088C

Remote I/O

RU-87Pn I-7000 M-7000

RS-485

Pin Assignments

I-7188(D)

(RS-232/485)

COM1

20 | 11

COM4			COM3			COM2			
1									10
RXD4	TXD4	GND	TXD3	RXD3	INIT*	(Y)D2+	(G)D2-	(R)Vs+	(B)GND

I-7188XA(D)

COM1

			COM4	COM3			COM2			
1										14
DO1	DO2	DI1	DI2	TXD4	RXD4	GND	TXD3	RXD3	INIT*	(Y)D2+	(G)D2-	(R)Vs+	(B)GND

I-7188XB(D)

		COM1					COM2			
1										14
DO	DI	D1+	D1-	CTS1	RTS1	GND	TXD1	RXD1	INIT*	(Y)D2+	(G)D2-	(R)Vs+	(B)GND

I-7188XC(D)

COM1

								COM2			
1											13
X3	X2	X1	DO3	DO2	DO1	DI3	DI2	INIT*	(Y)D2+	(G)D2-	(R)Vs+	(B)GND

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■ Specifications

Models	I-7188(D)	I-7188XA(D)	I-7188XB(D)	I-7188XC(D)
System Software				
OS	MiniOS7 (DOS-like embedded operating system)			
Program Download Interface	RS-232 (COM4)		RS-232 (COM1)	
Programming Language	C language			
Compilers to create.exe Files	TC++ 1.01; TC 2.01; BC++3.1 ~ 5.2x; MSC 6.0; MSVC++ (before version 1.5.2)			
CPU Module				
CPU	80188, 40 MHz			80188, 20 MHz
SRAM	256 KB	512 KB		128 KB
Flash	512 KB			
EEPROM	2 KB			
NVRAM	31 Bytes (battery backup, data valid up to 10 years)			-
RTC (Real Time Clock)	Provides second, minute, hour, date, day of week, month, year			-
64-bit Hardware Serial Number	-	Yes		-
Watchdog Timers	Yes (0.8 second)			
Communication Ports				
COM 1	RS-232 with modem control or RS-485	RS-232 with modem control or RS-485 with internal self-tuner ASIC; non-isolated	RS-232 or RS-485 with internal self-tuner ASIC; non-isolated	
COM 2	RS-485, non-isolated	RS-485 with internal self-tuner ASIC; 3000 V$_{DC}$ isolated	RS-485 with internal self-tuner ASIC; non-isolated	
COM 3	RS-232 (TxD, RxD, GND)		-	
COM 4	RS-232 (TxD, RxD, GND)		-	
LED Indicator				
System LED	Yes			
LED Display	5-digit 7-segment LED display for (D) versions			
Digital Input				
Channels	-	2	1	2
Contact	-	Dry		
On Voltage Level	-	Connect to GND		
Off Voltage Level	-	Open		
Digital Output				
Channels	-	2	1	3
Type	-	Open Collector		
Load Current	-	100 mA/channel		
Load Voltage	-	+30 V$_{DC}$ Max.		
Hardware Expansion				
I/O Expansion Bus	-	Yes (for memory board only)	Yes	Yes
Mechanical				
Dimensions (W x L x H)	72 mm x 119 mm x 33 mm			
Installation	DIN-Rail or Wall 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 V$_{DC}$			
Protection	Power reverse polarity protection			
Power Consumption	2 W; or 3 W for (D) version			

■ Ordering Information

I-7188/512 CR	µPAC with 4 COM ports (RoHS)
I-7188D/512 CR	I-7188/512 CR with display
I-7188XA CR	µPAC with 4 COM ports and 2 DI, 2 DO (RoHS)
I-7188XAD CR	I-7188XA CR with display
I-7188XB-512 CR	µPAC with 2 COM ports and 1 DI, 1 DO (RoHS)
I-7188XBD-512 CR	I-7188XB-512 CR with display
I-7188XC-512 CR	µPAC with 2 COM ports and 2 DI, 3 DO (RoHS)
I-7188XCD-512 CR	I-7188XC-512 CR with display