

EtherCAT



ECAT-M801 ECAT-M808

EtherCAT MainDevice

Features

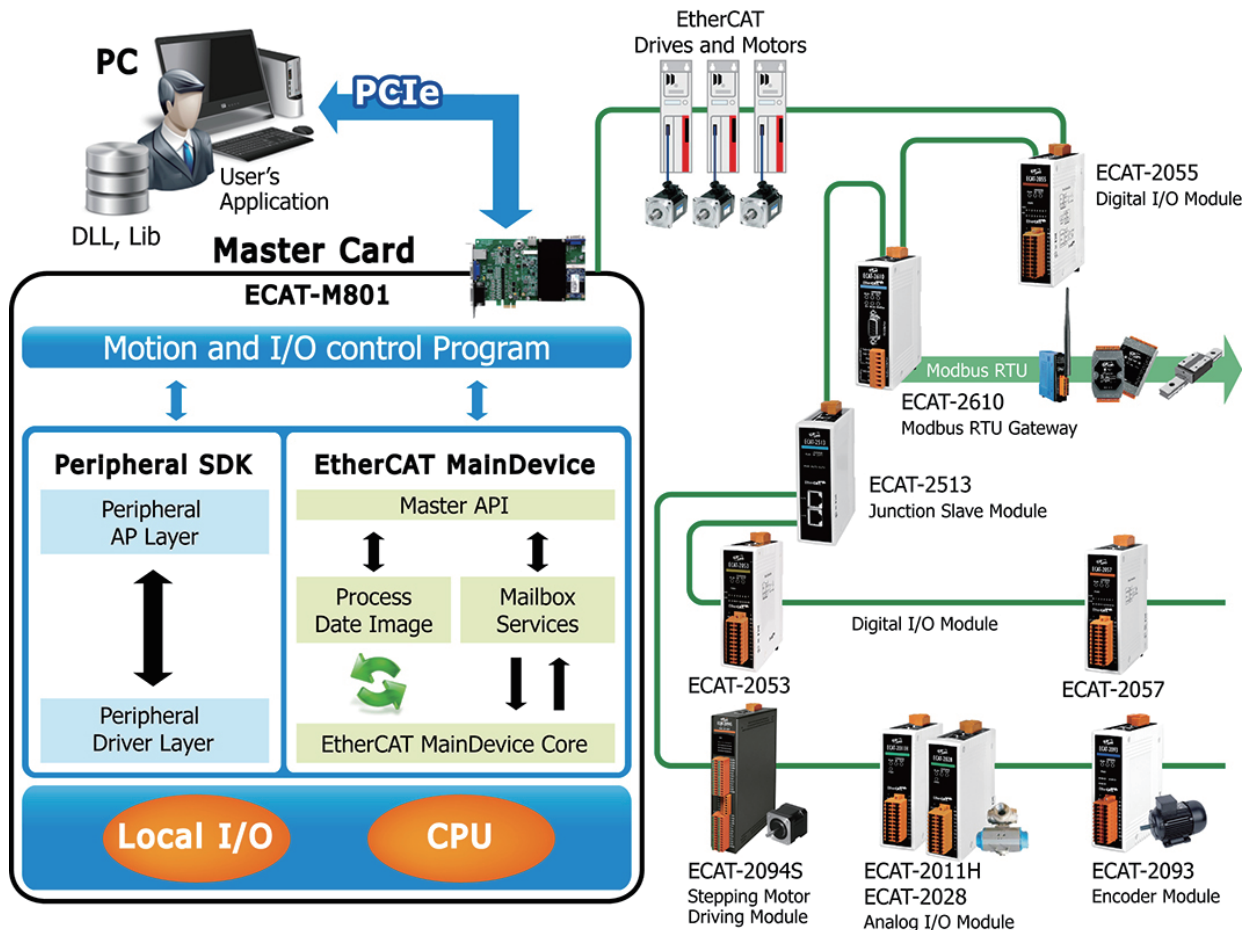
- EtherCAT cycle time up to 0.5ms
- Up to 64-axis motion control
- Up to 512 slave module
- Axis synchronized motion (E-GEAR, E-CAM)
- Virtual axis
- Multi-axis linear interpolation
- On board 13 DI and 13 DO
- On board 2 encoder interfaces with compare trigger output
- Coupled Control System
 - > Built with a second CPU that supports EtherCAT communication retention technology, this system ensures seamless EtherCAT communication and uninterrupted process recipe, even in the event of an OS system or program crash.



Introduction

EtherCAT (Ethernet for Control Automation Technology) is an open, high-performance fieldbus system that makes Ethernet technologies available at the I/O level. EtherCAT provides flexible wiring, fast communication and many other nice features. It needs a master to control many slaves. ICP DAS provides PC master cards, for users to build their applications including motion control. These cards can offer multi-axis motion and I/O control functions by their own built-in CPU. In this way, the CPU loading of PC can be reduced dramatically. In the mean while, ICP DAS also provides many I/O slave modules for users to choose from. Since EtherCAT technology is an industrial standard, those modules can work together in a system with 3rd-party EtherCAT slaves as well.

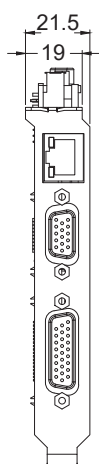
Applications



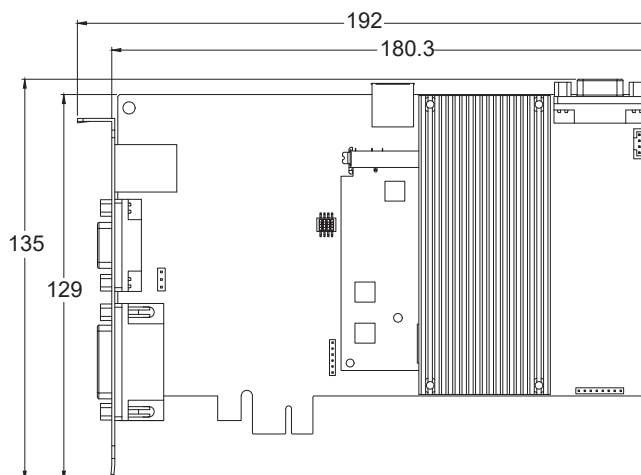
■ Specifications

Model	ECAT-M801-8AX ECAT-M801-8AX/S ECAT-M808-8AX ECAT-M808-8AX/S	ECAT-M801-16AX ECAT-M801-16AX/S ECAT-M808-16AX ECAT-M808-16AX/S	ECAT-M801-32AX ECAT-M801-32AX/S ECAT-M808-32AX ECAT-M808-32AX/S	ECAT-M808-64AX ECAT-M808-64AX/S
Communication Interface				
Ethernet Port	1 x RJ-45, 100 BASE-TX			
Protocol	EtherCAT			
Data Transfer Medium	Ethernet / EtherCAT Cable (Min. CAT 5), Shielded			
No. of Slave Node	Max. 512			
No. of Motion Control	Max. 8	Max. 16	Max. 32	Max. 64
General				
Bus Type	PCI Express x1			
Connector	RJ45 x1 DB-26 (Female) DB-15 (Female)			
Operating Temperature	0°C ~ +60°C			
Storage Temperature	-20°C ~ +70°C			
Humidity	0 ~ 90% RH, Non-condensing			
Dimensions (L x W x D)	192 mm x 135 mm x 21.5 mm			
Digital Output				
Channels	13			
Type	Sink (open collector)			
Load Voltage	+24 V			
Max. Load Current	100 mA/ch			
Isolation Voltage	3000 Vrms			
Digital Input				
Channels	13			
Type	Wet (Sink / Source)			
On Voltage Level	+19 V ~ + 24 V			
Off Voltage Level	+11 V Max.			
Isolation Voltage	3000 V			
Encoder				
Axis	2			
Type	Quadrant, CW / CCW, Pulse / Dir.			
Speed	1 MHz			
Resolution	32-bit			
Compare Trigger Output	2-ch			
Interpolation				
Linear	Any 2- or 64-axis			
Cicular	Any 2- or 3-axis			
Helical	Any 3-axis			

■ Dimensions (Units : mm)



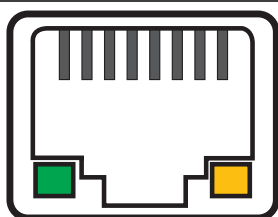
Left View



Front View

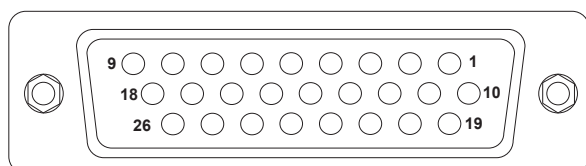
■ Pin Assignments

RJ1



CON1

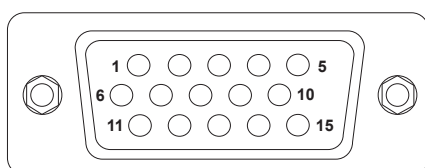
26-pin Female D-sub Connector



Pin Number	Pin Assignment	Pin Number	Pin Assignment	Pin Number	Pin Assignment
1	DI0	10	DO0	19	DI8
2	DI1	11	DO1	20	DI9
3	DI2	12	DO2	21	DI10
4	DI3	13	DO3	22	DI11
5	DI4	14	DO4	23	DO8
6	DI5	15	DO5	24	DO9
7	DI6	16	DO6	25	DO10
8	DI7	17	DO7	26	DO11
9	EXT. GND	18	EXT. PWR		

CON2

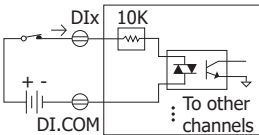
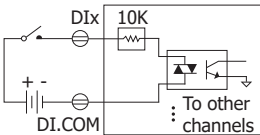
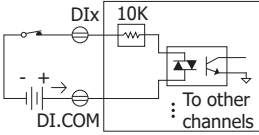
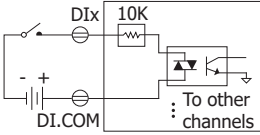
15-pin Female D-sub Connector



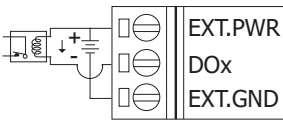
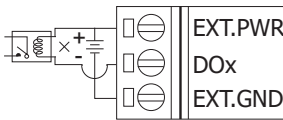
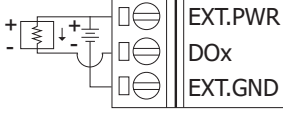
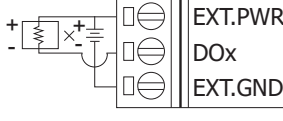
Pin Number	Pin Assignment	Pin Number	Pin Assignment	Pin Number	Pin Assignment
1	1A-	6	1A+	11	CMP 1+
2	1B-	7	1B+	12	CMP 1-
3	2A-	8	2A+	13	CMP 2+
4	2B-	9	2B+	14	CMP 2-
5	EXT GND	10	DI12	15	DO12

Wire Connections

Digital Input

Digital Input	Readback as 1	Readback as 0
Sink	+19 ~ +24 VDC	OPEN or < 11 VDC
		
Source	+19 ~ +24 VDC	OPEN or < 11 VDC
		

Digital Output

Digital Output	ON State Readback as 1	OFF State Readback as 0
Driver Relay		
Resistance Load		

Encoder

Counter Type		Counter Type		Counter Type	
A/B Phase	xA+  xA+ xA-  xA- xB+  xB+ xB-  xB-	CW/CCW	CW+  xA+ CW-  xA- CCW+  xB+ CCW-  xB-	Pulse/Dir	Pulse+  xA+ Pulse-  xA- Dir+  xB+ Dir-  xB-

Ordering Information

ECAT-M801-8AX	CR	PCI Express, 8-Axis EtherCAT MainDevice board with 13-ch DIO, 2-Axis Encoder (RoHS), without cable and daughter board.
ECAT-M801-8AX/S	CR	PCI Express, 8-Axis EtherCAT MainDevice board with 13-ch DIO, 2-Axis Encoder (RoHS), including a DN-26, a CA-12515M and a CA-2615M.
ECAT-M801-16AX	CR	PCI Express, 16-Axis EtherCAT MainDevice board with 13-ch DIO, 2-Axis Encoder (RoHS), without cable and daughter board.
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ECAT-M808-64AX	CR	PCI Express, 64-Axis EtherCAT MainDevice board with 13-ch DIO, 2-Axis Encoder (RoHS), without cable and daughter board.
ECAT-M808-64AX/S	CR	PCI Express, 64-Axis EtherCAT MainDevice board with 13-ch DIO, 2-Axis Encoder (RoHS), including a DN-26, a CA-12515M and a CA-2615M.

Accessories

DN-26	15-pin and 26-pin Din-Rail mounting I/O connector board
CA-1515M	DB-15 Male (D-sub) to DB-15 Male (D-sub) cable. 1.5 M (180°)
CA-2615M	DB-26 Male (D-sub) to DB-26 Male (D-sub) cable. 1.5 M (180°)

