

EtherCAT



ECAT-M801
EtherCAT Master

Features

- Up to 32-axis motion control
- Up to 64 slave module
- Axis synchronized motion (E-GEAR, E-CAM)
- Virtual axis
- Multi-axis linear interpolation
- On board DI/DO
- On board encoder with compare trigger output



Introduction

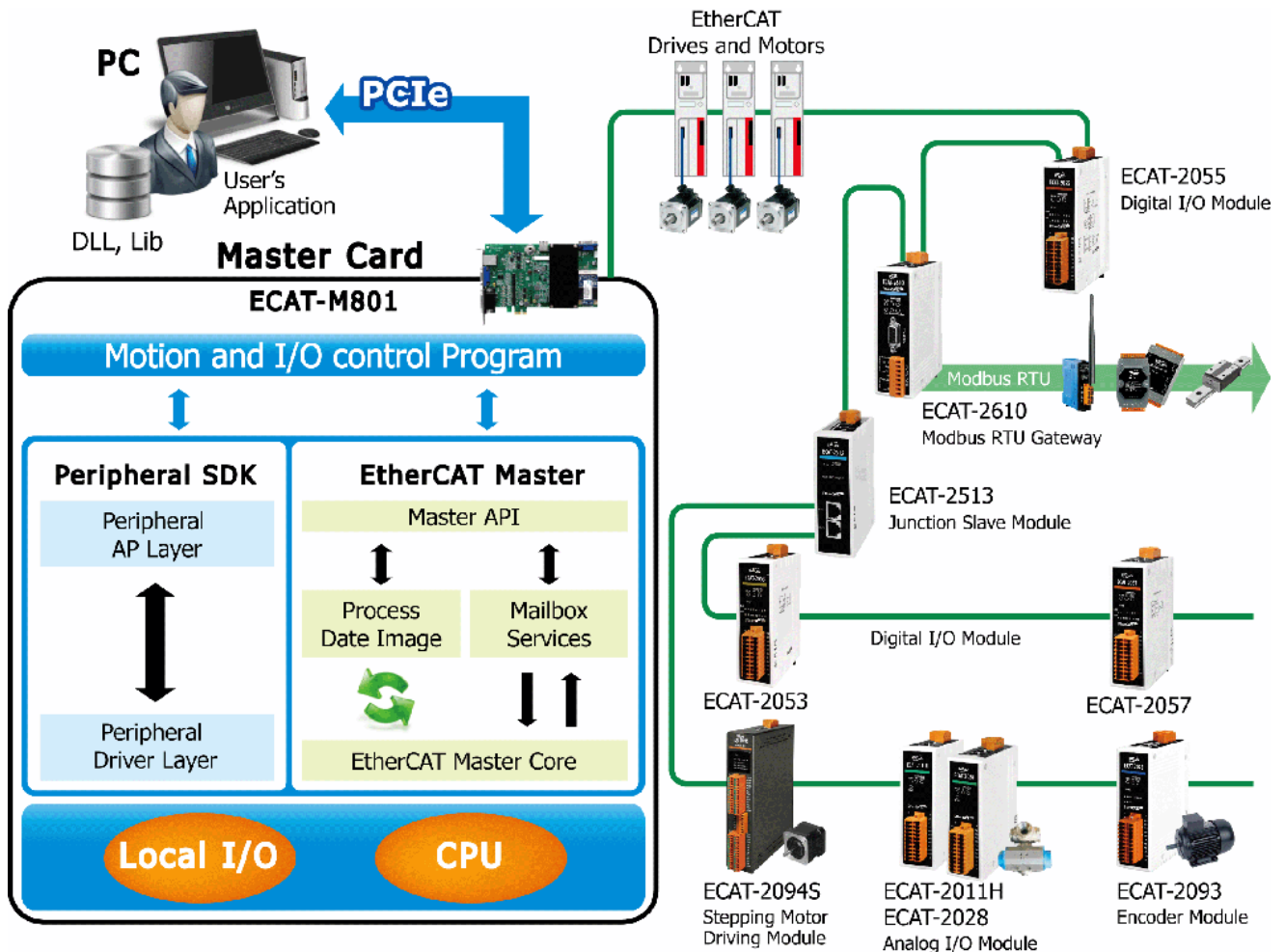
EtherCAT (Ethernet for Control Automation Technology) is an open, high-performance fieldbus system that makes Ethernet technologies available at the I/O level. EtherCAT provides flexible wiring, fast communication and many other nice features. It needs a master to control many slaves. ICP DAS provides 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.

Hardware Specifications

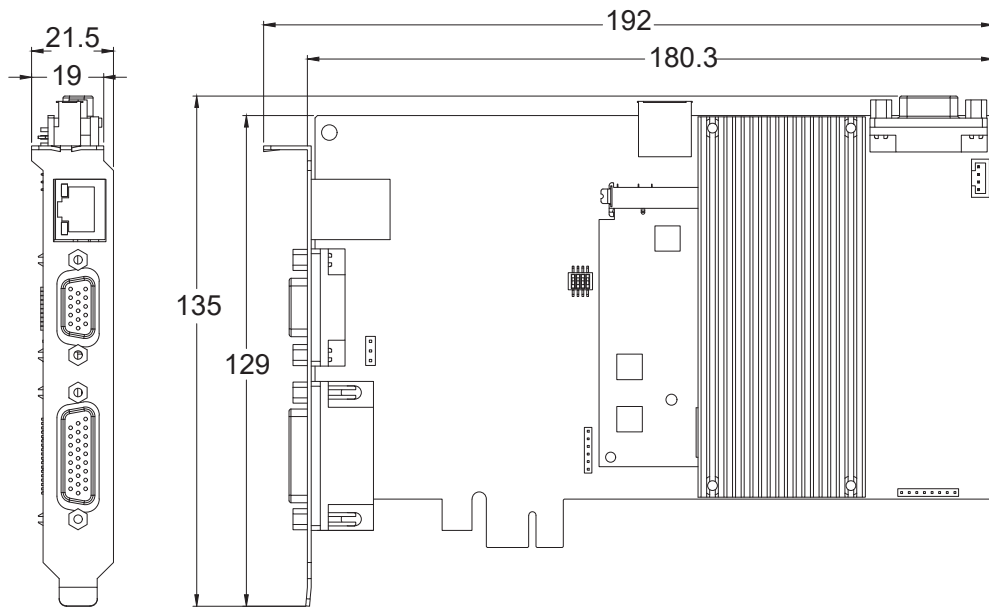
Model	ECAT-M801-8AX	ECAT-M801-16AX	ECAT-M801-32AX
Communication Interface			
Ethernet Port	1 x RJ-45, 100 BASE-TX		
Protocol	EtherCAT		
Data Transfer Medium	Ethernet / EtherCAT Cable (Min. CAT 5), Shielded		
No. of Slave Node	Max. 64		
No. of Motion Control	Max. 8	Max. 16	Max. 32
General			
Bus Type	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 32-axis
Cicular	Any 2- or 3-axis
Helical	Any 3-axis

Applications



■ Dimensions (Units : mm)

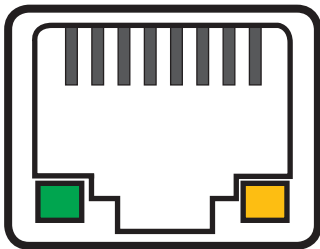


Left View

Front View

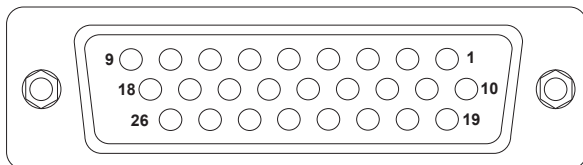
■ Pin Assignments

RJ1



CON1

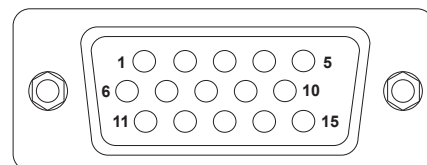
26-pin Female D-sub Connector



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

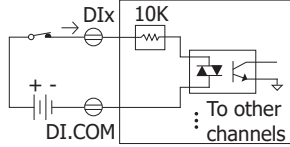
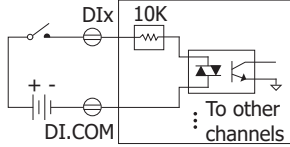
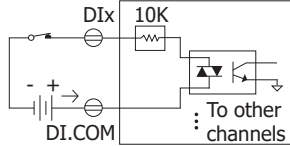
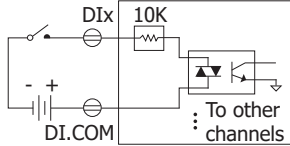
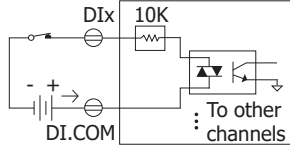
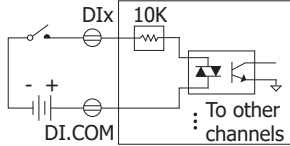
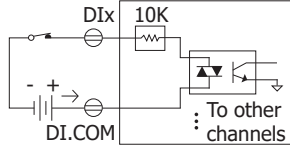
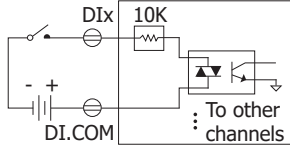
15-pin Female D-sub Connector



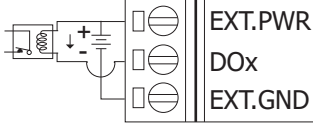
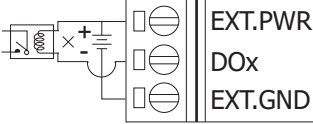
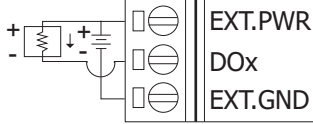
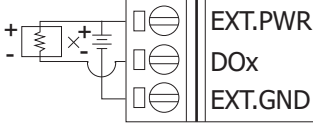
Pin Number	Pin Assignment	Pin Number	Pin Assignment	Pin Number	Pin Assignment
1	1A-	6	1A+	11	CMP 1+
2	1B-	7	1B+	12	CMP 1-
3	2A-	8	2A+	13	CMP 2+
4	2B-	9	2B+	14	CMP 2-
5	EXT GND	10	DI12	15	DO12

Wire Connections













Digital Input

Digital Input	Readback as 1	Readback as 0
Sink	+19 ~ +24 VDC 	OPEN or < 11 VDC 
	+19 ~ +24 VDC 	OPEN or < 11 VDC 
Source	+19 ~ +24 VDC 	OPEN or < 11 VDC 
	+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	EtherCAT Master, Max. 8-Axis Synchronously, 13-channel Digital I/O, 2-Axis Encoder
ECAT-M801-8AX/S	EtherCAT Master, Max. 8-Axis Synchronously, 13-channel Digital I/O, 2-Axis Encoder Including a DN-26, a CA-1515M and a CA-2615M
ECAT-M801-16AX	EtherCAT Master, Max. 16-Axis Synchronously, 13-channel Digital I/O, 2-Axis Encoder
ECAT-M801-16AX/S	EtherCAT Master, Max. 16-Axis Synchronously, 13-channel Digital I/O, 2-Axis Encoder Including a DN-26, a CA-1515M and a CA-2615M
ECAT-M801-32AX	EtherCAT Master, Max. 32-Axis Synchronously, 13-channel Digital I/O, 2-Axis Encoder
ECAT-M801-32AX/S	EtherCAT Master, Max. 32-Axis Synchronously, 13-channel Digital I/O, 2-Axis Encoder Including a DN-26, a CA-1515M 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°)