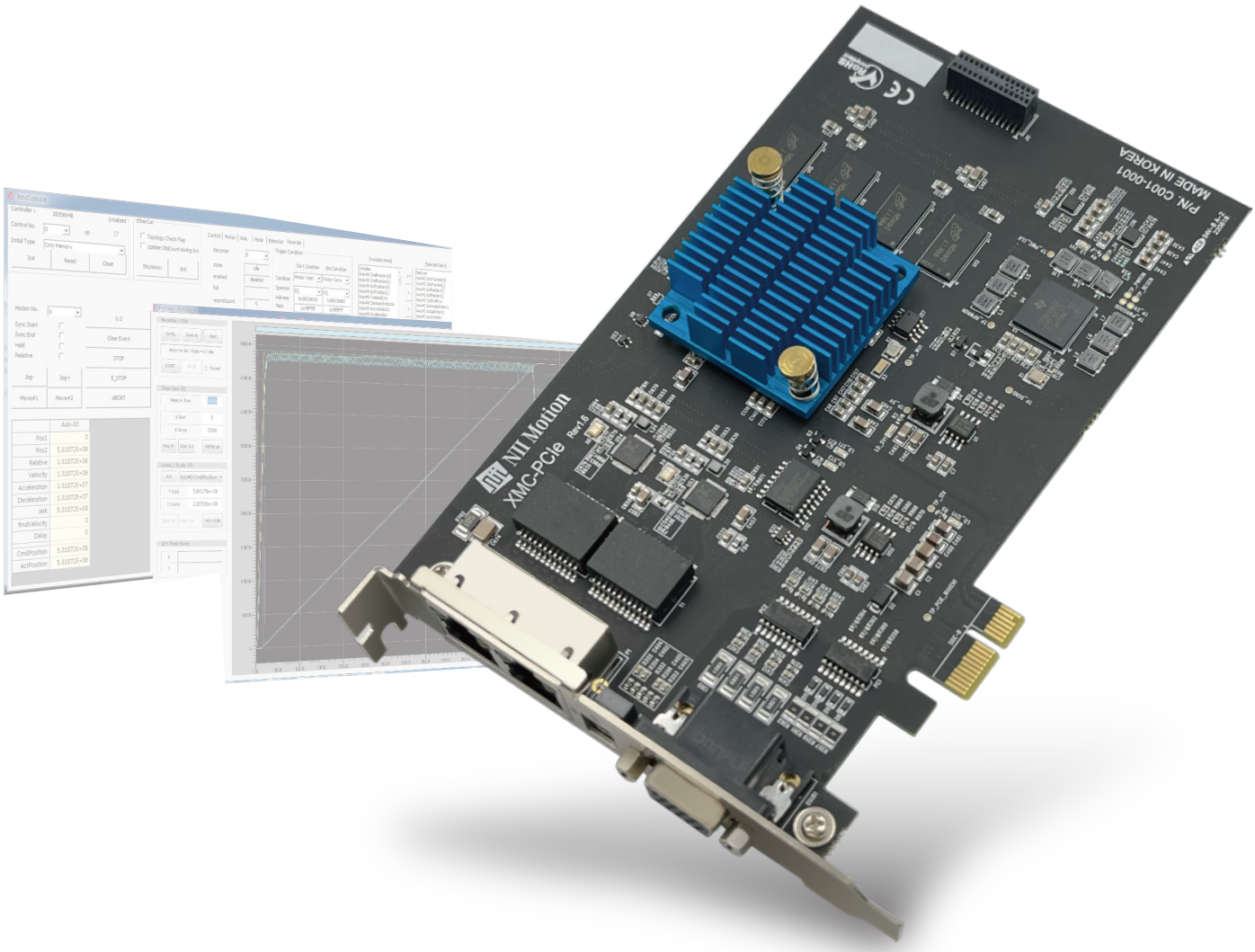
EtherCAT®



High Performance Motion Control

XMC-PCIe EtherCAT Motion Controller

NII Motion

XMC-PCIe High Performance EtherCAT Motion Controller

Features

- Supports 64 fully synchronized axes
- 1GigE EtherCAT for high-performance of Motion and I/O applications
- Broad range of compatible EtherCAT slaves
- Provide Motion programming library for C/C++
- 3CH isolated digital input (1CH E-STOP input)/3CH isolated digital output)
- Support OS : Windows 7/10/11 (32 bit, 64 bit)

Special Features

✓ ***4kHz*** servo update rate @ ***32 Axes***
✓ Supports ***Torque/Velocity*** mode @4kHz (***PID*** control)
✓ Provides Pre Filter and various of Post Filter ***(Low Pass, High Pass, Notch, Resonator)***
✓ Gantry Algorithm for ***Yaw (Theta) control***
✓ ***Various of motion*** : Coordinated, Append, Final Velocity Motion & On the Fly Modification
✓ Geometric Path : ***2D, 3D Path Motion***
✓ Electric ***CAM*** : Linear, Cubic
✓ Compensation ***(Error Mapping)*** : ***2D, 3D*** Position / 1D Torque compensator
✓ Supports Tangential Following (TAF), Analog Feedback control

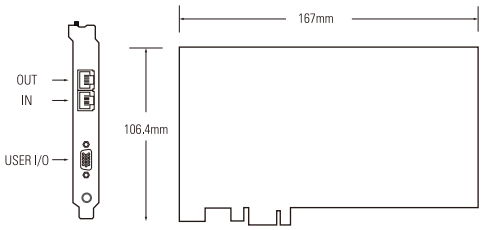
EtherCAT Specifications

- Bandwidth : 1Gbps
- Transfer Mode : 1000BASE-TX full duplex (IEEE 802.3)
- Cable & Connector : Shielded Twisted Pair (CAT5e), RJ45
- Topology : String, Ring
- Cable Length : 100m max between nodes
- Cyclic period : 250μsec ~ 2000μsec
- Jitter : <1 μsec
- Communication Profile : CoE (CAN over EtherCAT)
- Number of Axes : 64
- Number of Nodes : 64
- Motion modes : HM, CSP, CSV, CST
- Parameter transfer : CoE Object read/write

Hardware Specifications

- 1.5Ghz Dual-core processor
- PCI Express 2.0 x 1 slot
- Power consumption : 12V @ 0.5A (max)
- Humidity : 30 ~ 80% RH, non-condensing
- Operating Temp : 0 ~ 50 °C
- Storage Temp : -20 ~ 55 °C
- Air flow Requirements : 200 LFM

Dimension



EtherCAT Connector

EtherCAT IN			EtherCAT OUT		
RJ45 Connector	1	Transmit +	RJ45 Connector	1	Receive +
	2	Transmit -		2	Receive -
	3	Receive +		3	Transmit +
	4	n.c		4	n.c
	5	n.c		5	n.c
	6	Receive -		6	Transmit -
	7	n.c		7	n.c
	8	n.c		8	n.c

User I/O Connector

High Density D-sub 15Pin connector

1	OUT_0	6	OUT_0_RTN	11	OUT_1
2	OUT_1_RTN	7	OUT_2	12	OUT_2_RTN
3	IN_0	8	IN_0_RTN	13	IN_1
4	IN_1_RTN	9	IN_2	14	IN_2_RTN
5	E_STOP	10	E_STOP_RTN	15	SHIELD

Utilities

XMC Motion Console
- Graphical User Interface
- Motion Configration & Servo Tuning

XMC Motion Scope
- Graphical User Interface as an OscilloScope
- Getting All data of Firmware available

Direct Memory Access Utility(DMA3)
Drive Configration Utility by SDO(TBD)
Bode Tool (TBD)