

# Hardware Reference Manual



EtherCAT Master BOARD

## COMI-CIEM32

JAN 2021

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## 개요



**COMI-CIEM32  
( EtherCAT Master )**

COMI-CIEM32은 커미조아의 독립형 EtherCAT Master Controller로 x5-E3940(Intel사) CPU를 사용한 Supermicro SBC 보드를 내장하였으며 Windows 10 IoT 운영체제를 사용합니다.

PCI Express 기반의 EtherCAT Master 보드로 최대 32축 까지 제어 가능합니다.

본 매뉴얼은 COMI-CIEM32 의 하드웨어 구성과 기능에 대해 설명하는 하드웨어 매뉴얼 입니다.

**제품사양**

Contents	Details
Dimension	195 x 115 x 62(112) (mm)
Operating Temperature	0°C ~ 50°C
Storage Temperature	-20°C ~ 80°C
Humidity	5% ~ 90%, non-condensing
Power Input	BOARD MAIN : ECH381VM-02P, DC 12V
Power consumption	Typical : 1.3 A @ DC 12V ± 5% Maximum : 2.0 A @ DC 12V ± 5%

**Environmental Specification**

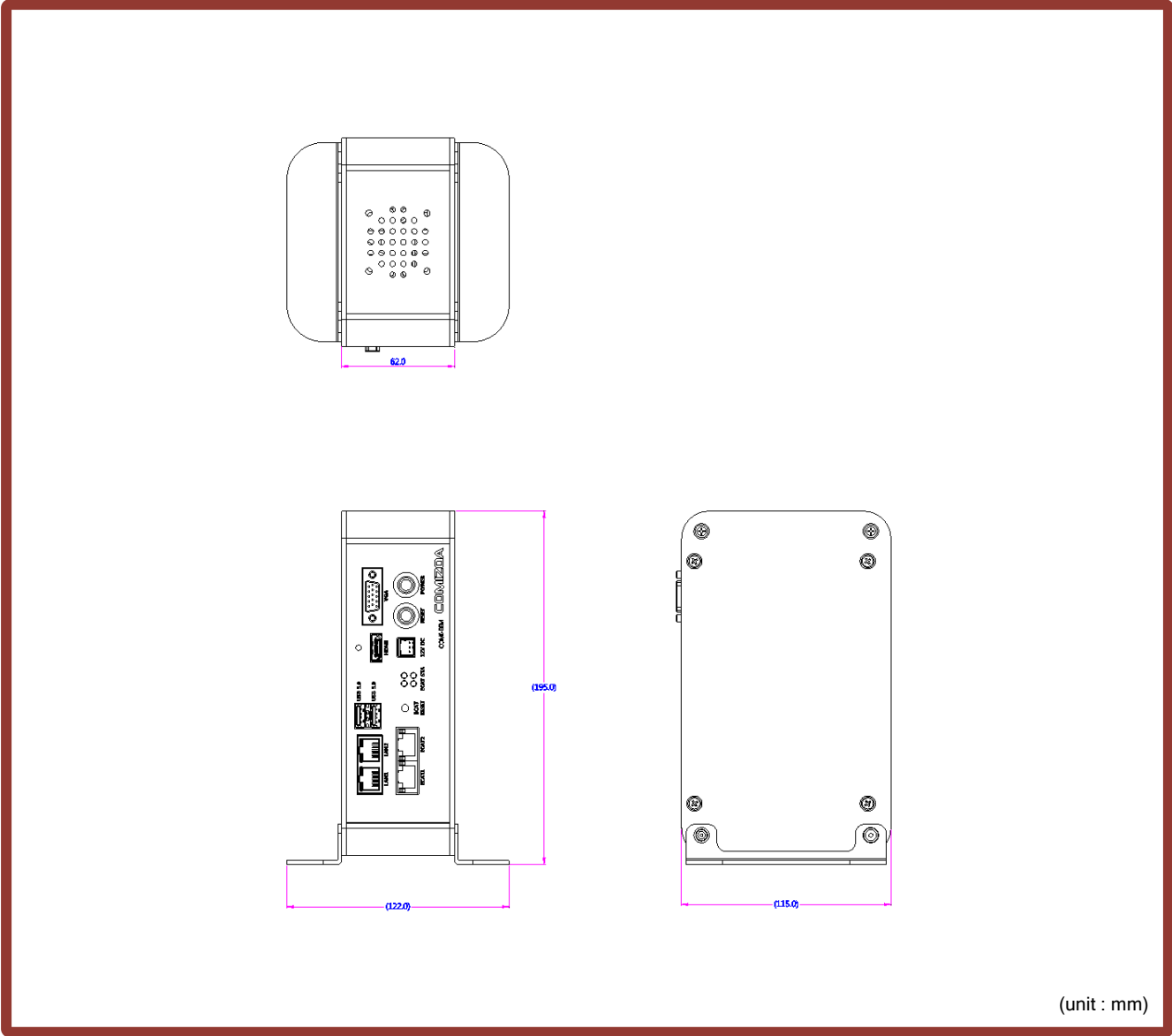
Contents	Details
Processor	Intel® Atom processor E3940 (4 cores, 4 threads)
OS	Windows 10 IoT
Memory	DDR3, 1600Mhz(PC3-12800), 2GB, SO-DIMM
	( Optional 2GB,4GB,8GB )
Graphics	Intel®HD Graphics
LAN	2 RJ45 Gigabit Ethernet LAN ports
USB	2 USB 3.0 Ports
Video Output	1 VGA port, 1 HDMI port
SSD	M.2 2280, 128 GB, SATA 6Gb/s
	( Optional 256GB, 516GB )

**SBC Specification**

Contents	Details
Processor	TI DSP (1Ghz, Dual Core, Max 20GPFLOPs )
Memory	System Memory : DDR3 512MB(4Gb)
	Flash Memory : 128Mb NOR Flash
Data Frame	1500 Byte
Contol	Motion : Max 32 Axes
	IO : UP to 1024 nodes
Port	2 Port (RJ-45 Connector)
	10/100 Mbps Auto-Negotiation
Communication Cycle	0.1 ms ~ 50 ms

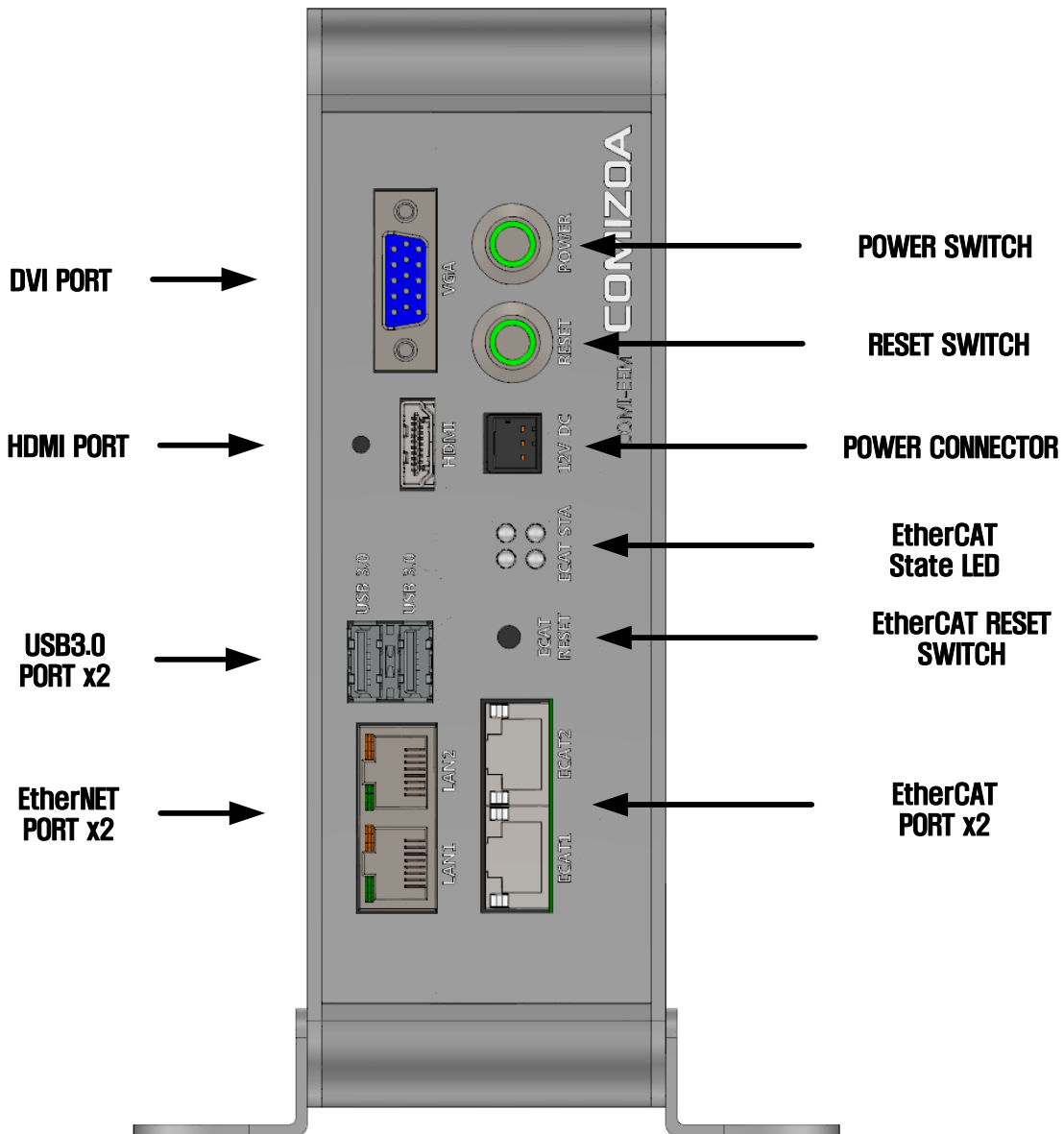
**EtherCAT Master Specification**

제품사양

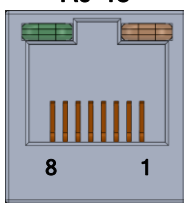


Dimension

**Connector & Switch & LED**

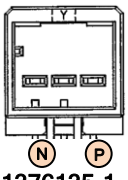


**Connector & Switch & LED**
**EtherCAT Connector**

 <p>RJ-45</p> <p>8 1</p>	MASTER		SLAVE 1, 2, 3	
	1	TX+	1	TX+
	2	TX-	2	TX-
	3	RX+	3	RX+
	4	NC	4	NC
	5	NC	5	NC
	6	RX-	6	RX-
	7	NC	7	NC
	8	NC	8	NC

\* EtherCAT용 통신 Cable CAT.5E 이상 사용

**Power Connector**

 <p>1376135-1</p> <p>N P</p>	Pin #	Description
	1 (P)	P12V
	2 (-)	N.C.
	3 (N)	N12V

## Hardware Reference Manual Update List

No.	Version	Date	Changes in
1	1.00	2020.04.01	First Edition
2	1.00	2021.01.06	외형 변경



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**Hardware Reference Manual**

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# Hardware Reference Manual



EtherCAT Master BOARD

## COMI-CIEM16

MAY 2022

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**Overview**


**COMI-CIEM16  
( EtherCAT Master )**

COMI-CIEM16은 커미조아의 독립형 EtherCAT Master Controller로 x5-E3940(Intel사) CPU를 사용한 Supermicro SBC 보드를 내장하였으며 Windows 10 IoT 운영체제를 사용합니다.

PCI Express 기반의 EtherCAT Master 보드로 최대 16축 까지 제어 가능합니다.

본 매뉴얼은 COMI-CIEM16 의 하드웨어 구성과 기능에 대해 설명하는 하드웨어 매뉴얼 입니다.

**Specification**

Contents	Details
Dimension	195 x 115 x 62(112) (mm)
Operating Temperature	0°C ~ 50°C
Storage Temperature	-20°C ~ 80°C
Humidity	5% ~ 90%, non-condensing
Power Input	BOARD MAIN : ECH381VM-02P, DC 12V
Power consumption	Typical : 1.3 A @ DC 12V ± 5% Maximum : 2.0 A @ DC 12V ± 5%

**Environmental Specification**

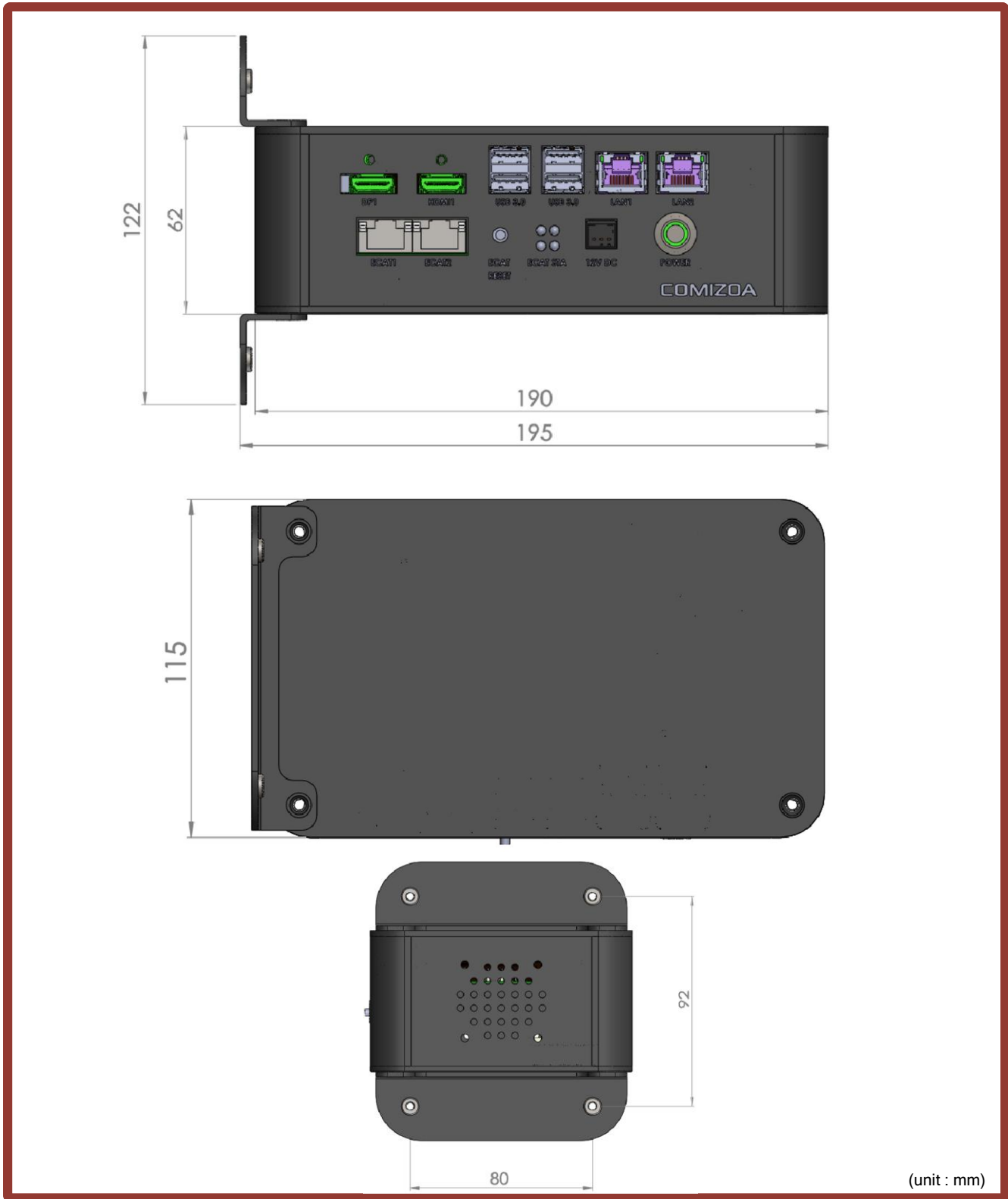
Contents	Details
Processor	Intel® Atom processor E3940 (4 cores, 4 threads)
OS	Windows 10 IoT
Memory	DDR3, 1600Mhz(PC3-12800), 2GB, SO-DIMM ( Optional 2GB,4GB,8GB )
Graphics	Intel®HD Graphics
LAN	2 RJ45 Gigabit Ethernet LAN ports
USB	4 USB 3.0 Ports
Video Output	1 HDMI port, 1 DP port
SSD	M.2 2240, 128 GB, SATA 6Gb/s ( Optional 256GB, 516GB )

**SBC Specification**

Contents	Details
Processor	TI DSP (1Ghz, Dual Core, Max 20GFLOPs )
Memory	System Memory : DDR3 512MB(4Gb) Flash Memory : 128Mb NOR Flash
Data Frame	1500 Byte
Contol	Motion : Max 16 Axes IO : UP to 1024 nodes
Port	2 Port (RJ-45 Connector) 10/100 Mbps Auto-Negotiation
Communication Cycle	0.1 ms ~ 50 ms

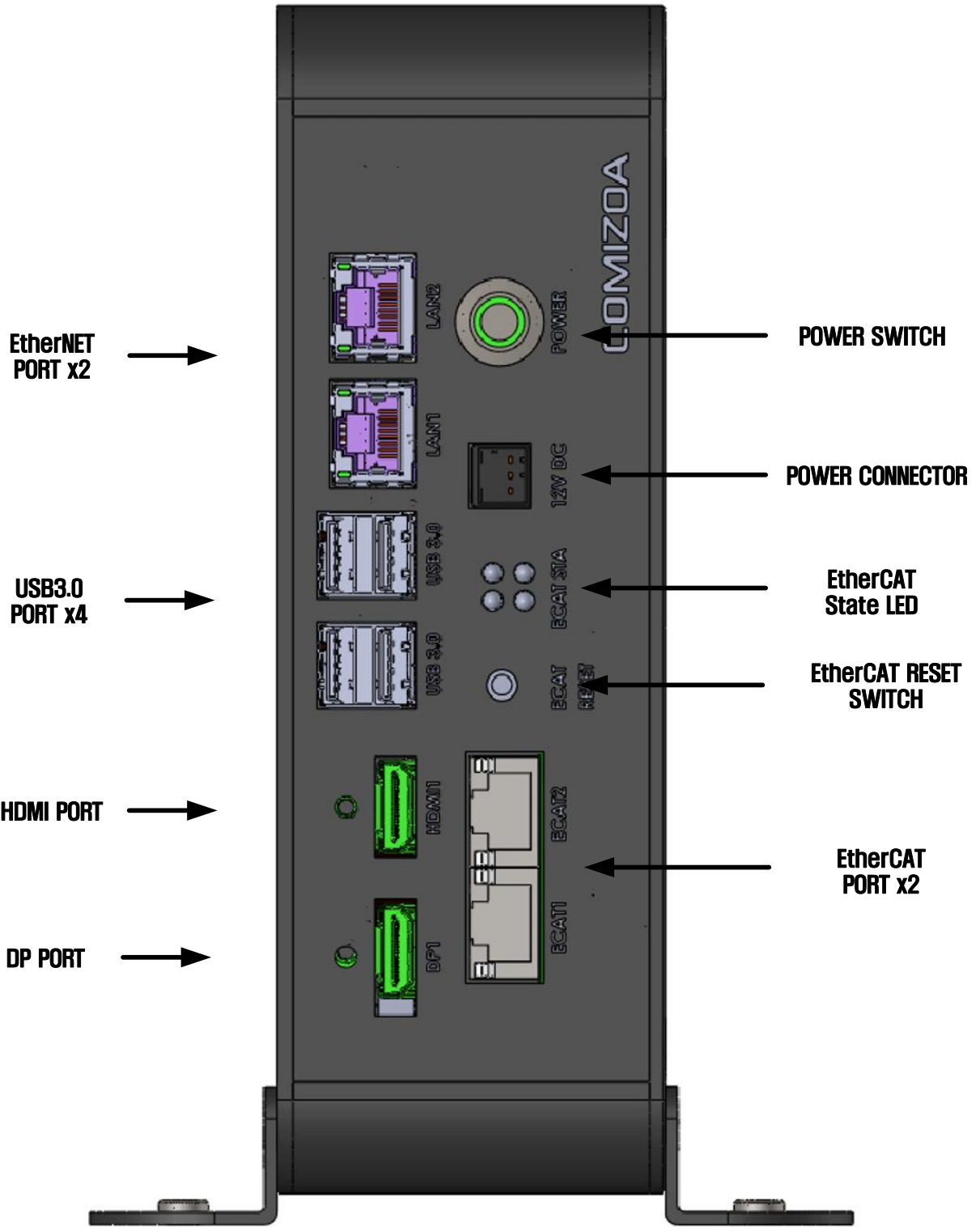
**EtherCAT Master Specification**

**Dimension**

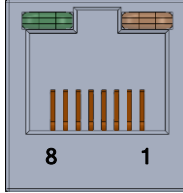


**Dimension**

Connector & Switch & LED

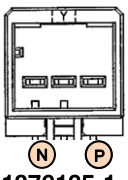


**Connector & Switch & LED**
**☐ EtherCAT Connector**



 <p>RJ-45</p> <p>8 1</p>	MASTER		SLAVE 1, 2, 3	
	1	TX+	1	TX+
	2	TX-	2	TX-
	3	RX+	3	RX+
	4	NC	4	NC
	5	NC	5	NC
	6	RX-	6	RX-
	7	NC	7	NC
	8	NC	8	NC

\* EtherCAT용 통신 Cable CAT.5E 이상 사용

**☐ Power Connector**

 <p>1376135-1</p> <p>N P</p>	Pin #	Description
	1 (P)	P12V
	2 (-)	N.C.
	3 (N)	N12V

**☐ For connecting Cable**

Connector	Crimp
 <p>1-1318120-3</p>	 <p>1318107-1 1318105-1</p>



## Hardware Reference Manual Update List

No.	Version	Date	Changes in
1	1.00	2021.10.14	First Edition

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