

EMC6

User Manual

Version: 20220902

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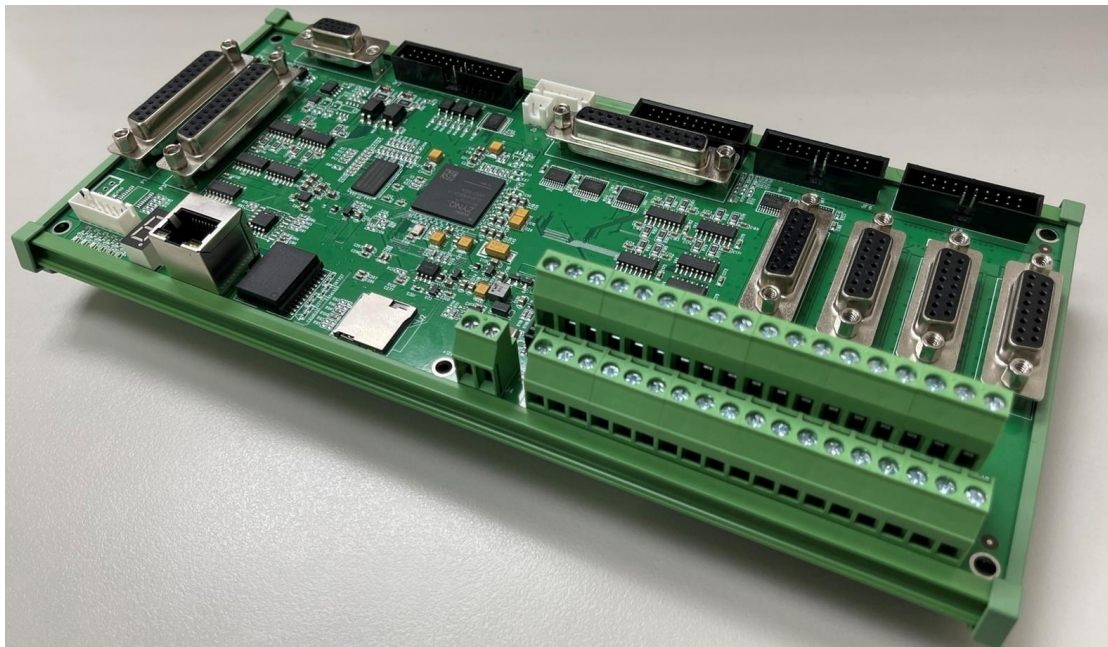
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1. Introduction

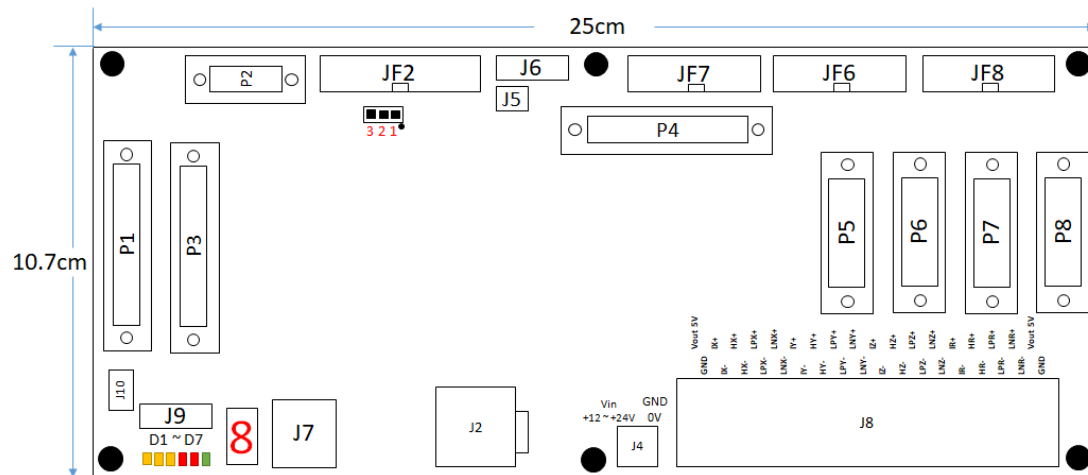
1-1 Specification

- ◆ Support common used brands of 16'18'20-bits high resolution ScanHead.
- ◆ Support output up to 3 axes digital scanner signal * 2.
- ◆ Build-in DSP. No occupation of PC CPU resource.
- ◆ Scanner digital signal refresh rate: 10 us/times.
- ◆ FPK, PPK, R05 first pulse suppression.
- ◆ Two 16-bits analog control signals.
- ◆ 3-way encoder inputs.
- ◆ PWM maximum output frequency is 10MHz, minimum pulse width is 0.05 μ s.
- ◆ 4-way digital step/servo motor control signals at the same time, the maximum output frequency is 10MHz.
- ◆ General 16-bits digital outputs, 16 bit digital inputs.
- ◆ Specific 16-bits laser control digital outputs.
- ◆ Windows 7 / 8 / 8.1/ Windows 10.

1-2 Appearance



1-3 Layout

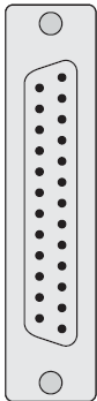


Number	Descriptions	Instruction
P1' P3	SCANHEAD1 SCANHEAD2	SCANHEAD Connector. (D-SUB 25-Pin Female) Support common used brands of 16'18'20-bits high resolution ScanHead.
P2	LASER_CONNECTOR	Laser control and analog output port. (D-SUB 15-Pin Female)
P4	IPG CONNECTOR	IPG Laser Connector. (D-SUB 25-Pin Female)
P5 ~ P8	MOTION、ENCODER CONNECTOR	X' Y' Z' R Motion / Encoder Connector . (D-SUB 15-Pin Female)
JF2	LASER_EXTENSION	Extension laser control and 16-bit digital output port. (26-Pin box header connector)
JF6	INPUT	16-bits digital input port . (20-Pin box header connector)
JF7	EXTENSION	Extension 16-bits digital output port . (20-Pin box header connector)
JF8	OUTPUT	16-bits digital output port. (20-Pin box header connector)
J2	MICRO SD	Micro SD Connector.
J4	POWER IN	Terminal Block : DC +12V ~ +24V Input.
J5	IPG ESTOP	IPG Estop. (Dry Contact)
J6	IPG STATUS	IPG Status
J7	RJ45	EtherNet Connector.
J8	MOTION SENSOR	Terminal Block : Motion Sensor Connector.
J9	LED CONNECTOR	LED Output Connector.
J10	RS232	RS232 Connector.
D1 ~ D7	LED	D6 : Seven-segment display. D6 is the card ID.
JP1	Select FPK or R05	JP1.1' JP1.2 Close : FPK, JP1.2' JP1.3 Close : R05 °

2. Pin Assignment

2-1 ScanHead Control

2-1-1 P1、P3 : Scanner1、Scanner2 Connector

P1、P3 : D-SUB 25F		
		
DO NOT CONNECT (25)		(13) DO NOT CONNECT
GND (24)		(12) DO NOT CONNECT
GND (23)		(11) GND
DO NOT CONNECT (22)		(10) DO NOT CONNECT
STATUS1+ (21)		(9) DO NOT CONNECT
STATUS3+ (20)		(8) STATUS1-
STATUS2+ (19)		(7) STATUS3-
CHAN3+ (18)		(6) STATUS2-
CHAN2+ (17)		(5) CHAN3-
CHAN1+ (16)		(4) CHAN2-
SYNC+ (15)		(3) CHAN1-
CLOCK+ (14)		(2) SYNC-
		(1) CLOCK-
Descriptions	Signal Type	Remark
CLOCK	Differential Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
SYNC	Differential Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
CHAN1	Differential Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
CHAN2	Differential Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
CHAN3	Differential Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
STATUS2	Differential Input	$+2V < V_{IH} < +5V$
STATUS3	Differential Input	$+2V < V_{IH} < +5V$
STATUS1	Differential Input	$+2V < V_{IH} < +5V$
GND	0V	

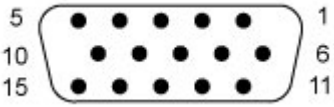
Note : V_{OH} : High Level Output Voltage (No Resistive load)

I_{omax} : Maximum Output Current

V_{IH} : High Level Input Voltage`

2-2 Laser Control

2-2-1 P2 : Laser Connector











































P2 : HD-SUB 15F			
			
Pin	Descriptions	Signal Type	Remark
1	Analog Out1	0V ~ 11V Output	Default 0V ~ +10V (HWConfig Setting)
2	Analog Out2	0V ~ 11V Output	Default 0V ~ +10V (HWConfig Setting)
3	Analog GND	Analog GND	
4	PWM	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
5	FPK / R05	TTL Output / Analog 0V ~ 5V	Jumper JP1 select FPK or R05 mode. Default is FPK. (JP1 Setting)
6	Laser On/Off	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
7	Leading Light On/Off	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
8	Shutter	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
9	CW select	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
10	Lamp On/Off	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
11	Start power saving mode	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
12	/START	Dry Contact or Optical coupling Input	Default Dry Contact (HWConfig Setting)
13	/STOP	Dry Contact or Optical coupling Input	Default Dry Contact (HWConfig Setting)
14	Vout_5V	+5V Output	$I_{omax} : 300mA$
15	Digit GND	0V	

Note : V_{OH} : High Level Output Voltage (No Resistive load)

I_{omax} : Maximum Output Current

V_{IH} : High Level Input Voltage

2-2-2 JF2 : Laser Extension Connector

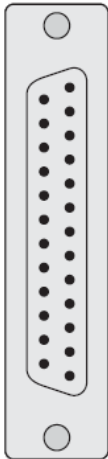
JF2 : 26Pin Box		
Analog1 (1)   Analog2 (3)    PWM (5)     FPK / R05 (7)     Laser On / Off (9)     Leading Light On / Off (11)     Shutter (13)    CW Select (15)    Lamp On / Off (17)    Power Saving Mode (19)    IPG MO (21)    Reserved Output (23)    GND (25)   	(2) GND (4) GND (6) /START (8) GND (10) /STOP (12) GND (14) Program Ready+ (16) Program Ready- (18) Marking Ready+ (20) Marking Ready- (22) Marking End+ (24) Marking End- (26) NC	
Descriptions	Signal Type	Remark
Analog1	0V ~ +11V Output	Default 0V ~ +10V (HWConfig Setting)
Analog2	0V ~ +11V Output	Default 0V ~ +10V (HWConfig Setting)
PWM	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 30mA$
FPK or R05	TTL Output / Analog 0V ~ 5V	Jumper JP1 select FPK or R05 mode. Default is FPK. (JP1 Setting)
Laser On/Off	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
Leading Light On/Off	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
Shutter	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
CW select	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
Lamp On/Off	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
Start power saving mode	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
IPG MO	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
Reserved	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
/START	Dry Contact or Optical coupling Input	Default Dry Contact (HWConfig Setting)
/STOP	Dry Contact or Optical coupling Input	Default Dry Contact (HWConfig Setting)
Program Ready	Optical coupling Output	$I_{cmax} : 100mA$
Marking Ready	Optical coupling Output	$I_{cmax} : 100mA$
Marking End	Optical coupling Output	$I_{cmax} : 100mA$
GND	0V	

Note : V_{OH} : High Level Output Voltage (No Resistive load)

I_{omax} : Maximum Output Current

I_{cmax} : Maximum Collector Current

2-2-3 P4 : IPG Laser Connector

P4 : D-SUB 25F			
			
Do not connect (25)	(13) Do not connect		
Do not connect (24)	(12) Status		
EStop (23)	(11) Status		
Guid Laser (22)	(10) GND		
Status (21)	(9) Latch		
PWM (20)	(8) D7		
Laser On (19)	(7) D6		
MO (18)	(6) D5		
+5V Out (17)	(5) D4		
Status (16)	(4) D3		
Do not connect (15)	(3) D2		
GND (14)	(2) D1		
	(1) D0		
Pin	Descriptions	Signal Type	Remark
1 ~ 8	Power Setting (D0 ~ D7)	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
9	Latch	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
11 、 12 、 16 、 21	Laser alarms Status	TTL Input	$+2V < V_{IH} < +5V$ 、 $V_{IL} < +0.8V$
17	+5V Out (Type EG : Do not Connect)	+5V Out	$I_{omax} : 300mA$
18	MO	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
19	Laser On	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
20	PWM	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
22	Guide Laser On / Off	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
23	IPG Estop (Pin is Pull Up)	TTL Output	$V_{OH} : +5V$ 、 $I_{omax} : 25mA$
10 、 14	GND	0V	
13 、 15 、 24 、 25	Do not connect		

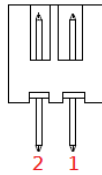
Note : V_{OH} : High Level Output Voltage (No Resistive load)

I_{omax} : Maximum Output Current

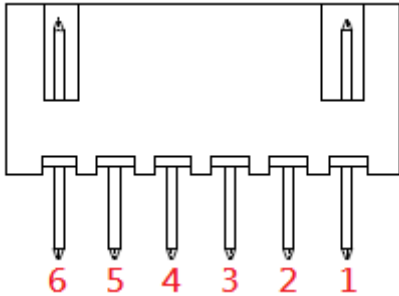
V_{IH} : High Level Input Voltage

V_{IL} : Low Level Input Voltage

2-2-4 J5 : IPG EStop Connector

J5 : 2Pin Wafer Connector			
			
Pin	Descriptions	Signal Type	Remark
J5.1	P4 IPG Pin23	/EStop	Dry Contact, Close is working
J5.6	GND	0V	

2-2-5 J6 : IPG Status Connector

J6 : 6Pin Wafer Connector			
			
Pin	Descriptions	Signal Type	Remark
J5.1	GND	0V	
J5.2	P4 IPG Pin 21	TTL Input	$+2V < V_{IH} < +5V$ 、 $V_{IL} < +0.8V$
J5.3	P4 IPG Pin 16	TTL Input	$+2V < V_{IH} < +5V$ 、 $V_{IL} < +0.8V$
J5.4	P4 IPG Pin 12	TTL Input	$+2V < V_{IH} < +5V$ 、 $V_{IL} < +0.8V$
J5.5	P4 IPG Pin 11	TTL Input	$+2V < V_{IH} < +5V$ 、 $V_{IL} < +0.8V$
J5.6	GND	0V	

Note : V_{IH} : High Level Input Voltage

V_{IL} : Low Level Input Voltage

2-3 Motor Servo Control

2-3-1 P5 ~ P8 : Motion 、 Encoder Connector

P5 ~ P8 (Axis X 、 Axis Y 、 Axis Z 、 Axis R) : D-SUB 15F			
Do Not Connect (15) Pulse- (14) Direction- (13) Encoder A- (12) Encoder B- (11) Encoder Z- (10) GND (9)			
(8) Do Not Connect (7) Do Not Connect (6) Pulse+ (5) Direction+ (4) Encoder A+ (3) Encoder B+ (2) Encoder Z+ (1) +5V			
Pin	Descriptions	Signal Type	Remark
1	Vout_5V	+5V Output	Iomax : 300mA
2 、 10	Encoder Z+ 、 Encoder Z-	Differential Input	+2V < V _{IH} < +5V
3 、 11	Encoder B+ 、 Encoder B-	Differential Input	+2V < V _{IH} < +5V
4 、 12	Encoder A+ 、 Encoder A-	Differential Input	+2V < V _{IH} < +5V
5 、 13	Direction+ 、 Direction-	Differential Output	V _{OH} : +5V 、 Iomax : 25mA
6 、 14	Pulse+ 、 Pulse-	Differential Output	V _{OH} : +5V 、 Iomax : 25mA
7 、 8 、 15	Do Not Connect		
9	GND	0V	

Note : V_{OH} : High Level Output Voltage (No Resistive load)

Iomax : Maximum Output Current

V_{Imax} : Maximum Input Voltage

2-3-2 J8 : Motion Sensor Connector

J8 : Terminal Block 36Pin	
Descriptions	Remark
LPX+、LPY+、LPZ+、LPR+	Positive Limit + (X、Y、Z、R)
LPX-、LPY-、LPZ-、LPR-	Positive Limit - (X、Y、Z、R)
LNX+、LNY+、LNZ+、LNR+	Negative Limit + (X、Y、Z、R)
LNX-、LNY-、LNZ-、LNR-	Negative Limit - (X、Y、Z、R)
HX+、HY+、HZ+、HR+	Home + (X、Y、Z)
HX-、HY-、HZ-、HR-	Home -(X、Y、Z)
IX+、IY+、IZ+、IR+	InPosition + (X、Y、Z)
IX-、IY-、IZ-、IR-	InPosition - (X、Y、Z)
Vout 5V	+5V Output、Iomax : 300mA
GND	0V

Note : Iomax : Maximum Output Current

2-4 Others Control

2-4-1 JF6 : TTL Input

JF6 : 20Pin Box		
Input 1 (1)	■ ●	(2) Input 2
Input 3 (3)	● ●	(4) Input 4
Input 5 (5)	● ●	(6) Input 6
Input 7 (7)	● ●	(8) Input 8
Input 9 (9)	● ●	(10) Input 10
Input 11 (11)	● ●	(12) Input 12
Input 13 (13)	● ●	(14) Input 14
Input 15 (15)	● ●	(16) Input 16
GND (17)	● ●	(18) GND
+5V (19)	● ●	(20) NC

Descriptions	Signal Type	Remark
Input 1 ~ 16	TTL Input	$+2V < V_{IH} < +5V$ 、 $V_{IL} < +0.8V$
+5V	+5V Output	Iomax : 300mA
GND	0V	

Note : V_{IH} : High Level Input Voltage

V_{IL} : Low Level Input Voltage

Iomax : Maximum Output Current

2-4-2 JF7、JF8 : TTL Output

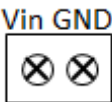
JF8 : 20Pin Box			JF7 : 20Pin Box		
Output 1 (1)	■ ●	(2) Output 2	Output 17 (1)	■ ●	(2) Output 18
Output 3 (3)	● ●	(4) Output 4	Output 19 (3)	● ●	(4) Output 20
Output 5 (5)	● ●	(6) Output 6	Output 21 (5)	● ●	(6) Output 22
Output 7 (7)	● ●	(8) Output 8	Output 23 (7)	● ●	(8) Output 24
Output 9 (9)	● ●	(10) Output 10	Output 25 (9)	● ●	(10) Output 26
Output 11 (11)	● ●	(12) Output 12	Output 27 (11)	● ●	(12) Output 28
Output 13 (13)	● ●	(14) Output 14	Output 29 (13)	● ●	(14) Output 30
Output 15 (15)	● ●	(16) Output 16	Output 31 (15)	● ●	(16) Output 32
GND (17)	● ●	(18) GND	GND (17)	● ●	(18) GND
+5V (19)	● ●	(20) NC	+5V (19)	● ●	(20) NC

Descriptions	Signal Type	Remark
Output 1 ~ 32	TTL Output	$V_{OH} : 5V$ 、Iomax : 25mA
Vout_5V	+5V Output	Iomax : 300mA
GND	0V	

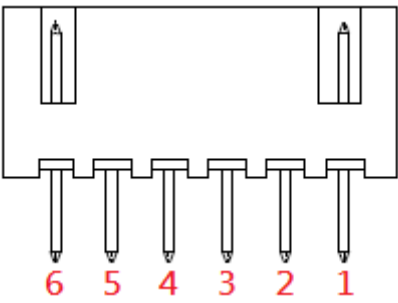
Note : V_{OH} : High Level Output Voltage (No Resistive load)

Iomax : Maximum Output Current

2-4-3 J4 : Power Input

J4 : Terminal Block 2Pin		
		
Descriptions	Signal Type	Remark
Vin	DC +12V ~ +24V	Recommended power 15W UP
GND	0V	

2-4-4 J9 : LED Output

J9 : 6Pin Wafer Connector			
			
Pin	Descriptions	Signal Type	Remark
1	GND	PC Power 0V	
2 ~ 5	D1 ~ D4	TTL Output	$V_{OH} : 5V$ 、 $I_{omax} : 25mA$
6	GND	PC Power 0V	

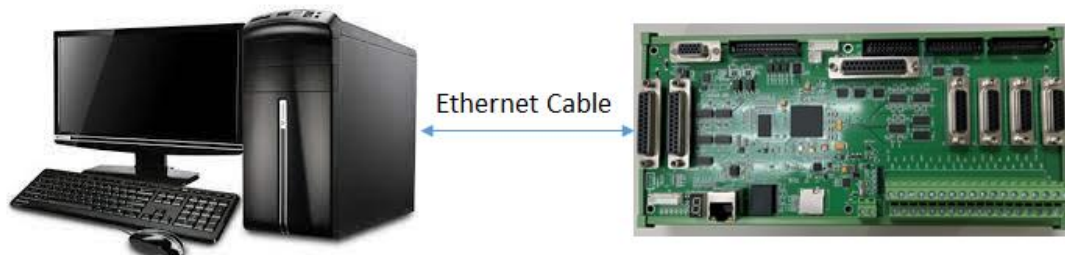
Note : V_{OH} : High Level Output Voltage (No Resistive load)
 I_{omax} : Maximum Output Current

3. Installation and Setup

3-1 LAN Cable connection

3-1-1 Single controller

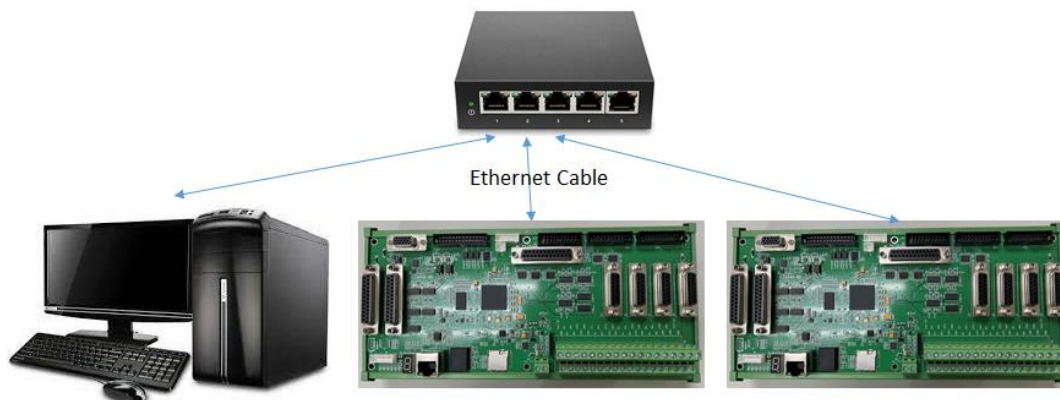
Wiring cable between PC and EMC6 directly.



Note1: Cable please using CAT6 or above.

3-1-2 Multiple controllers

Wiring to multiple EMC6s by a 1Gbps Switch hub.

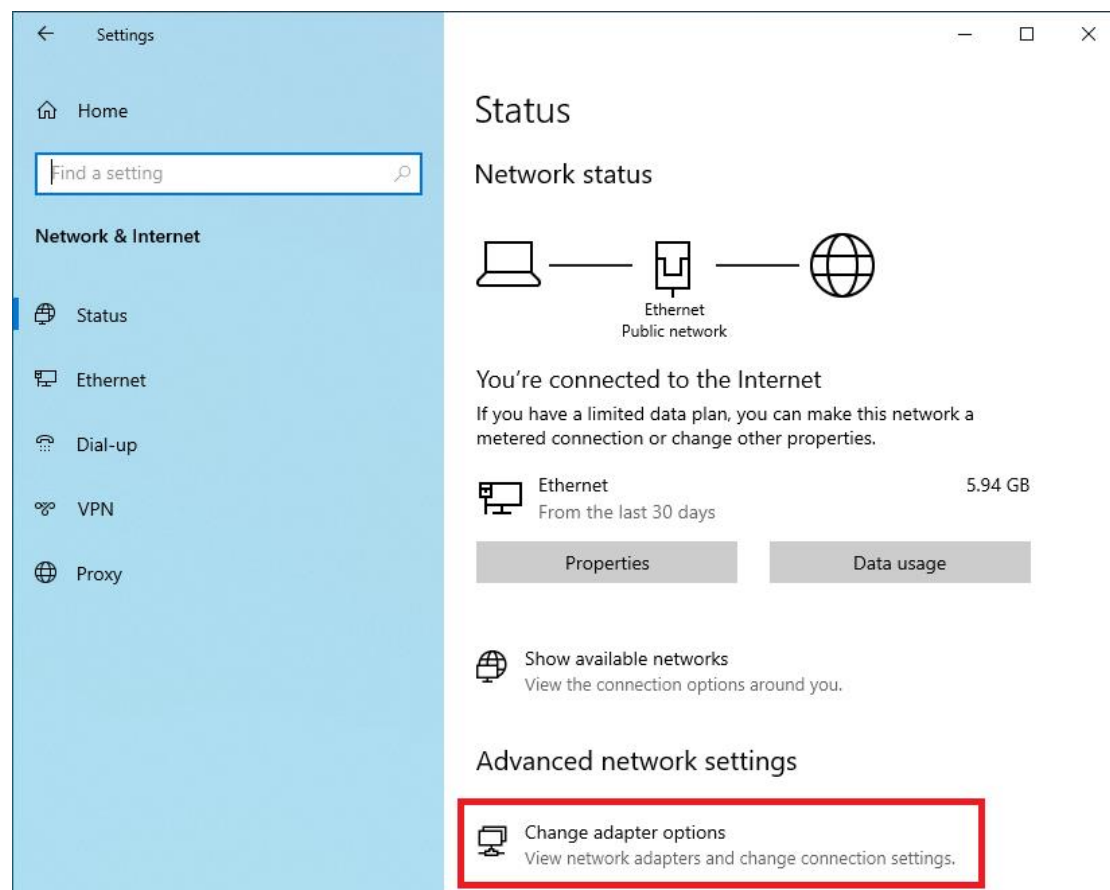
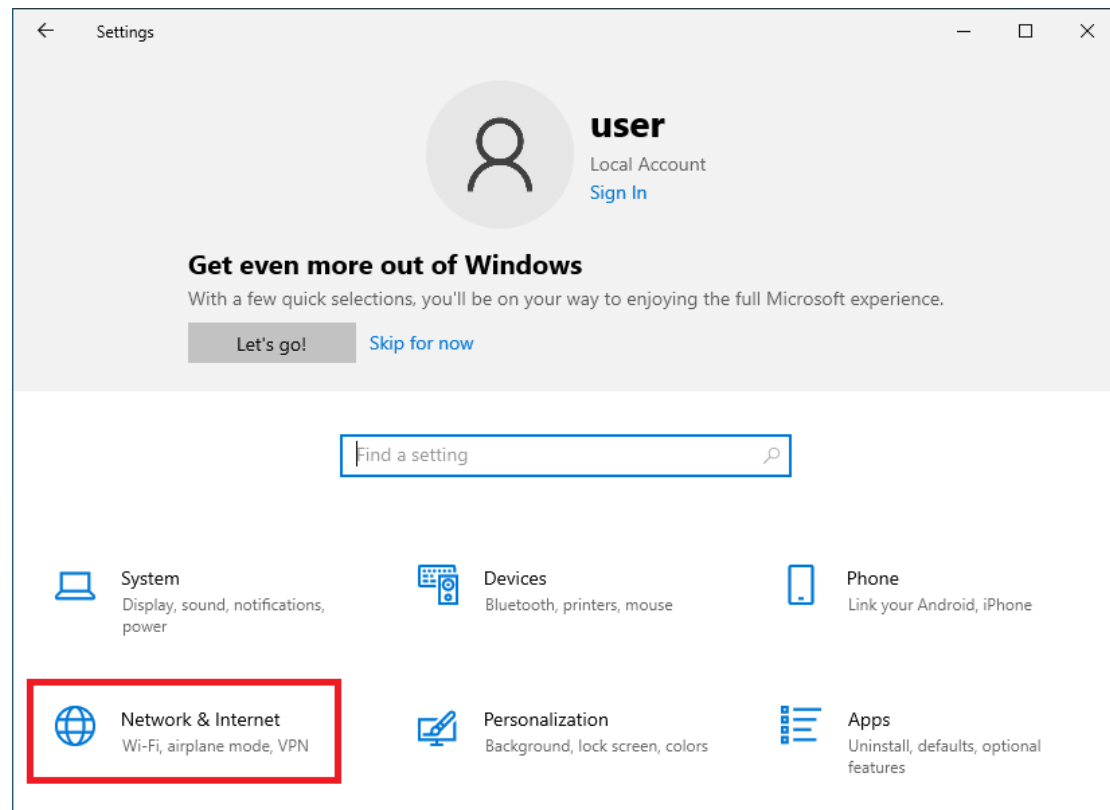


Note1: Cable please using CAT6 or above.

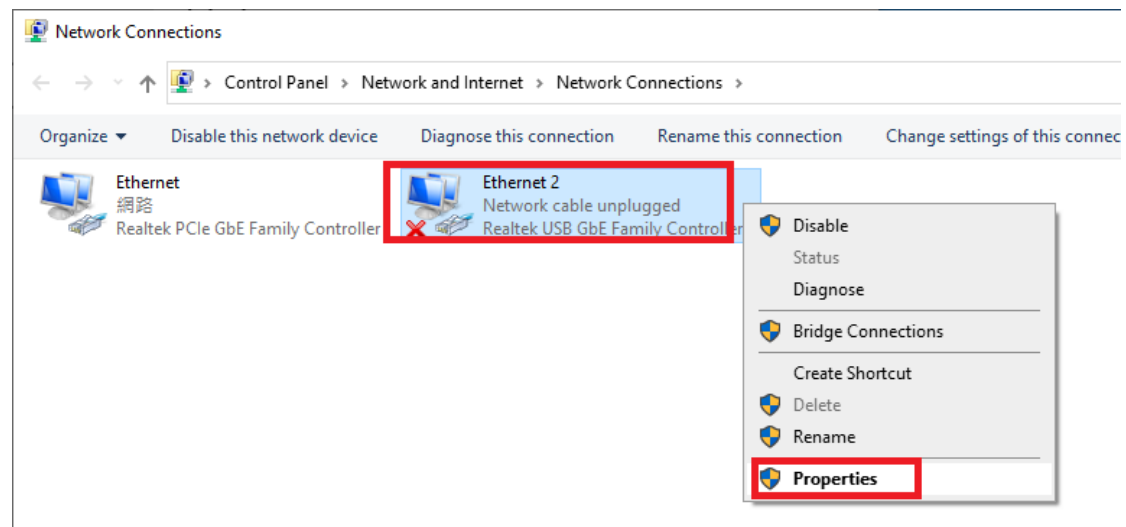
Note2: The Switch hub must be capable with 1000Mbps or above.

3-2 Internet Setting

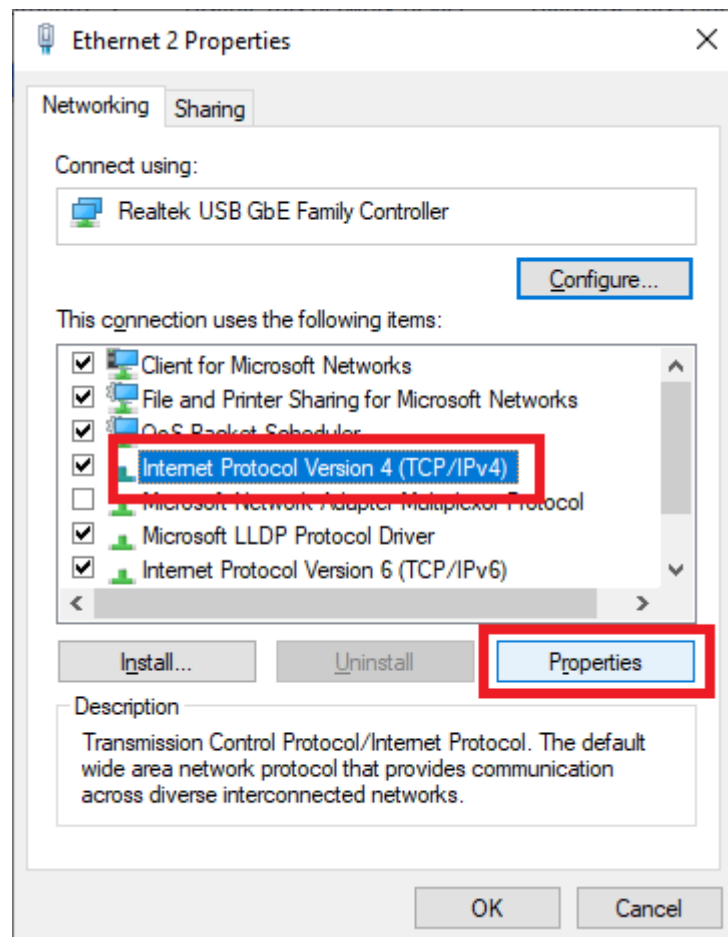
3-2-1 Start → Settings → Network & Internet → Change adapter options



3-2-2 Ethernet → Properties



3-2-3 Click Internet Protocol Version 4 (TCP/IPv4) → Properties

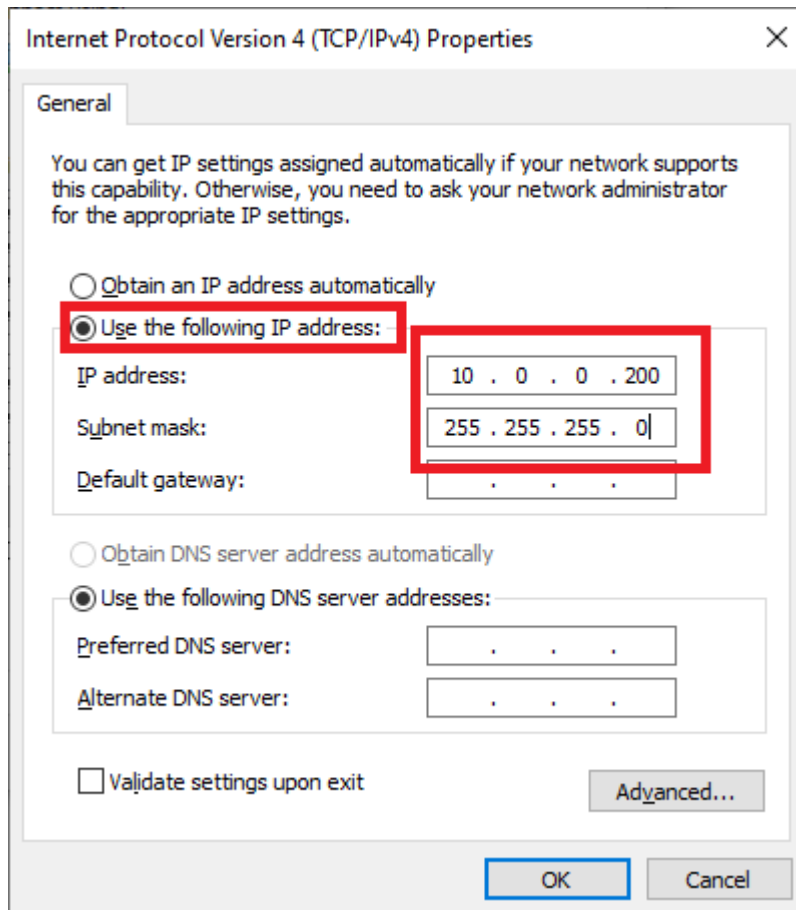


3-2-4 Select Use the following IP address → Set IP address & Subnet mask → OK

IP address : 10.0.0.200 (Range : 10.0.0.1 ~ 10.0.0.254)

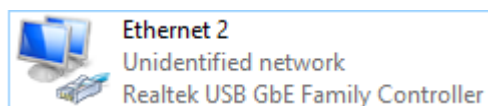
Note : PC and EMC6 must have different IP address. Default IP for EMC6 is 10.0.0.10 ◦

Subnet mask : 255.255.255.0 (Fixed)

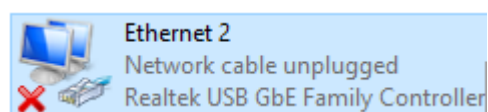


3-2-5 Confirming the link between the EMC6 and the PC.

If link is correct, the logo will show connected(as pic below)

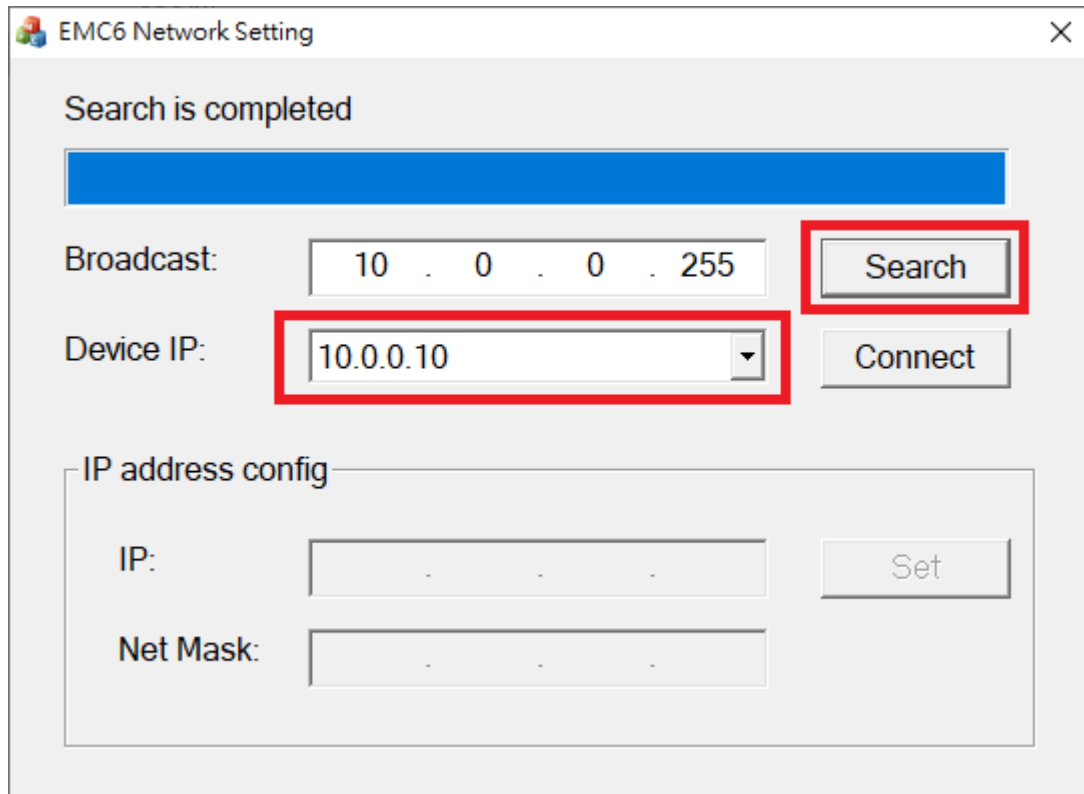


If link is incorrect, the logo will show the cable is removed(as pic below)



3-2-6 Link confirming: Execute 「 C:\Program Files (x86)\Marking Mate\Drivers\EMC6\EMC6_Broadcast.exe 」

Click on Search, if everything is going well, the Device IP is appeared within the EMC6 IP field.



EMC6 Network Setting

Search is completed

Broadcast: 10 . 0 . 0 . 255

Device IP: 10.0.0.10

Search

Connect

IP address config

IP: . . .

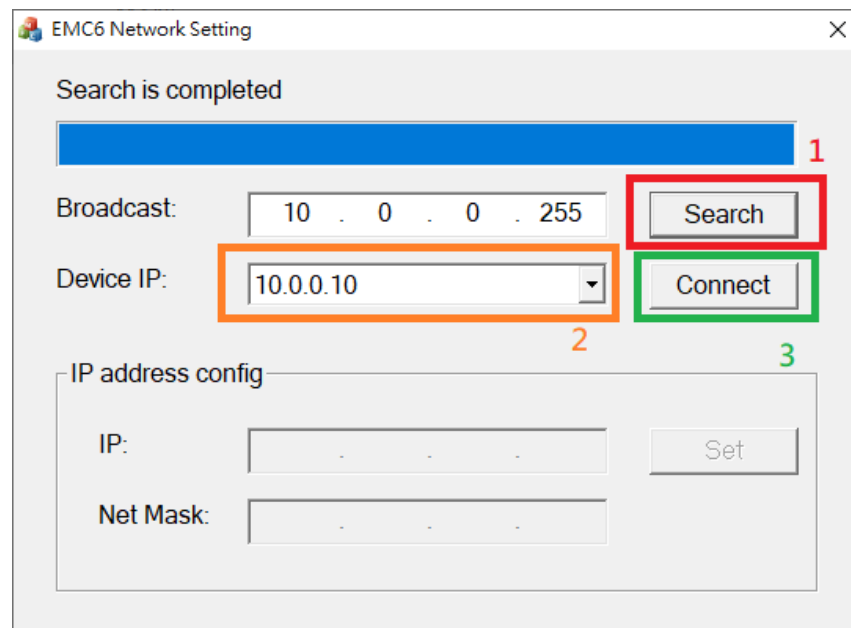
Net Mask: . . .

Set

3-3 、 Change EMC6 IP address

3-3-1 Execute C:\Program Files (x86)\Marking Mate\Drivers\EMC6\EMC6_Broadcast.exe

3-3-2 Click on Search→Choose the Device IP which will be edited→Click on Connect

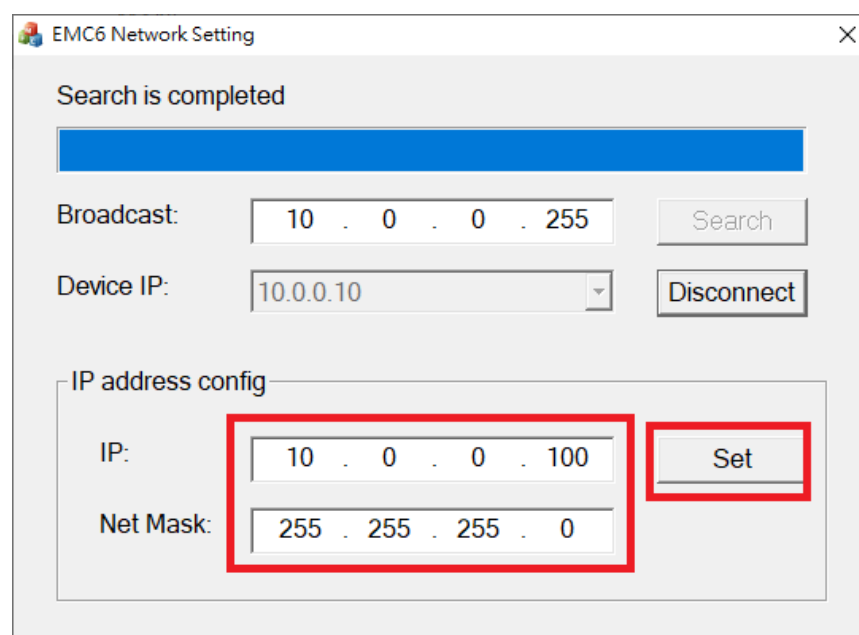


3-3-3 Input IP and Net Mask→Click on Set

IP : 10.0.0.1 ~ 10.0.0.254

Note: Under the circumstances of multiple controllers, each controller should be given an unique IP address.

Net Mask : 255.255.255.0



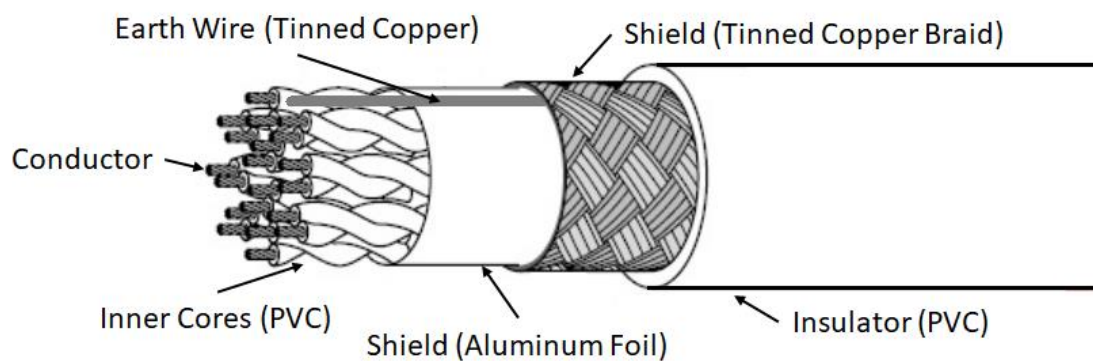
3-3-4 After Setup, the EMC6 must be reboot by breaking the power connection.

4. Cable Connection

4-1 Cable

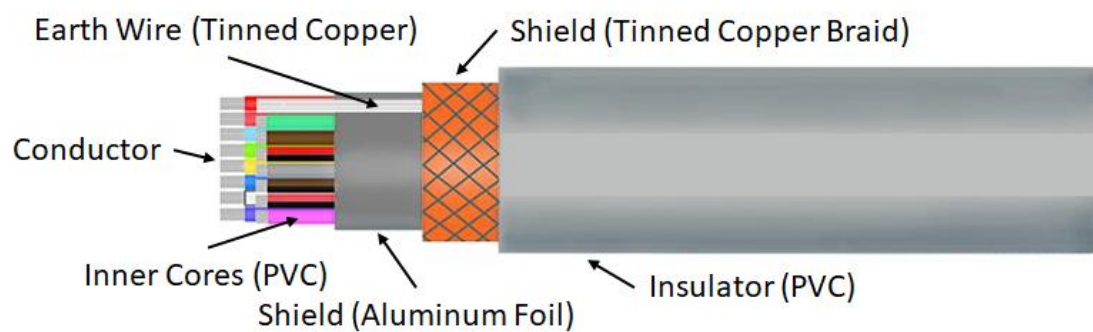
4-1-1 Differential

The differential signal should use a shielded twisted pair cable to wire. Positive signal and Negative signal should use the same pair.



4-1-2 Others

The cable should choose a shielded wire, and there should be tinned copper braid between insulator and inner cores.

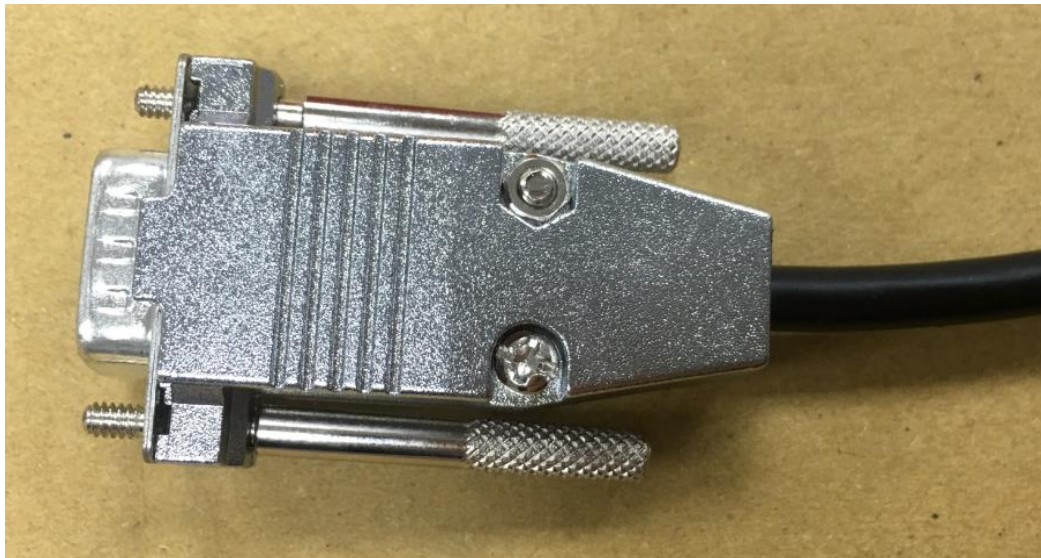


4-2 D-SUB welding

While welding D-SUB connector, should take care the protection of core, and the earth GND wiring.



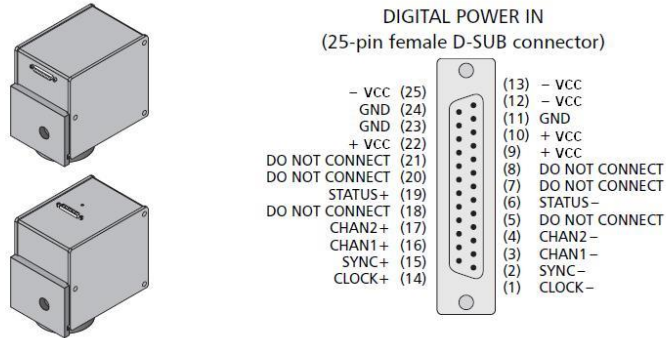
The cover of D-SUB is recommended in metal material.



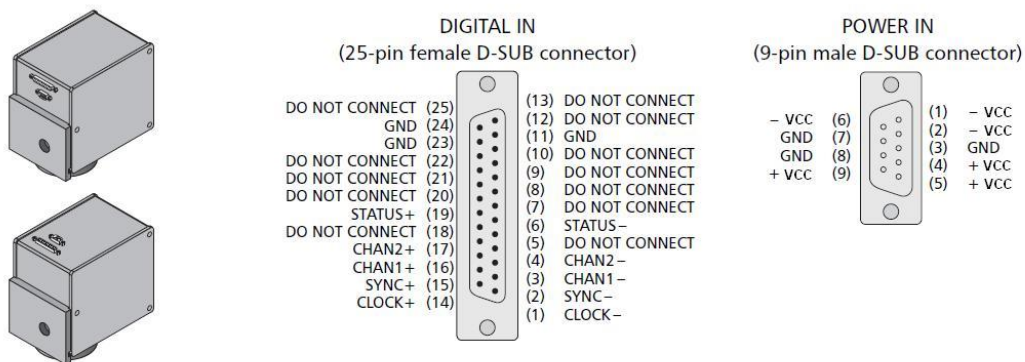
4-3 Scanner Cable Connection

4-3-1 XY2-100 16Bit Scanner

- Type 1 XY2-100 16Bit : With one D-SUB 25Pin



- Type 2 XY2-100 16Bit : With D-SUB 25Pin and D-SUB 9Pin

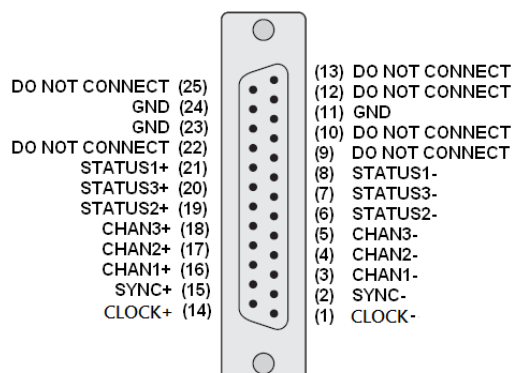


Notice:

- EMC6 P1 is corresponding to digital ScanHead D-SUB25Pin. User could easily connect them by 25-pin pin to pin cable; however, if using type 1 ScanHead, user has to wire to power source from the cable.
- For the power source: User has to wire all pins of them, which means has to wire 3 pins of the +VCC, 3 pins of the-VCC, and 3 pins of the GND. Only wire to 1 pin of +VCC, 1 pin of-VCC, or 1 pin of GND is forbidden.
- Power GND should short to EMC6 GND.
- Max cable length is 5M. Cable should cover with shield and isolated.

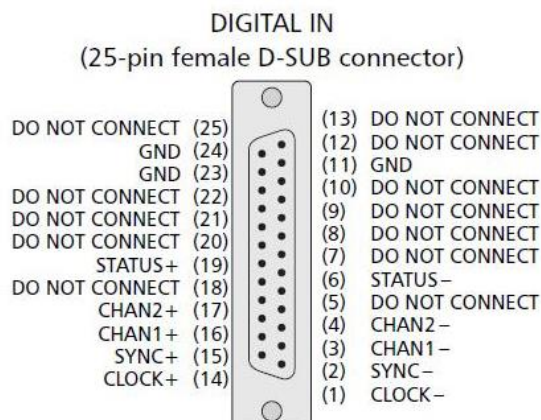
4-3-2 Raylase XY2-100-E 18Bit Scanner

Wire is similar to XY2-100 16Bit scanner, except add additional 2 Status signal.



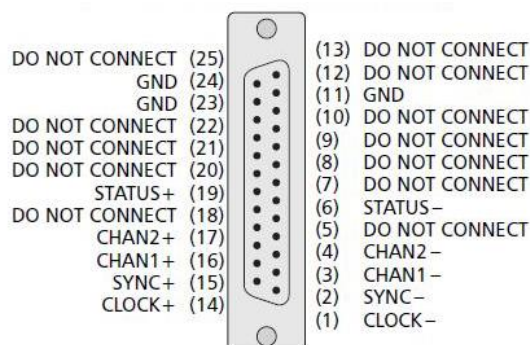
4-3-3 CTI XY2-100 20Bit Scanner

Wire is same to XY2-100 16Bit scanner.



4-3-4 CANON 20Bit / 64Bit Scanner

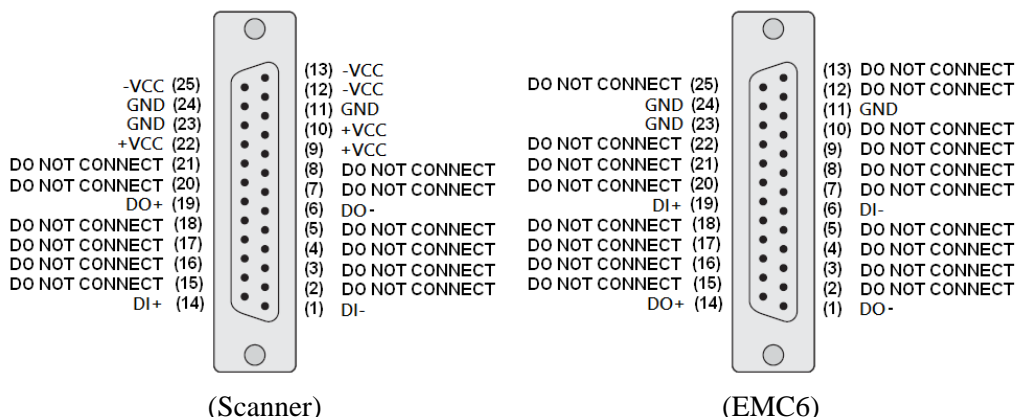
Wire is same to XY2-100 16Bit scanner.



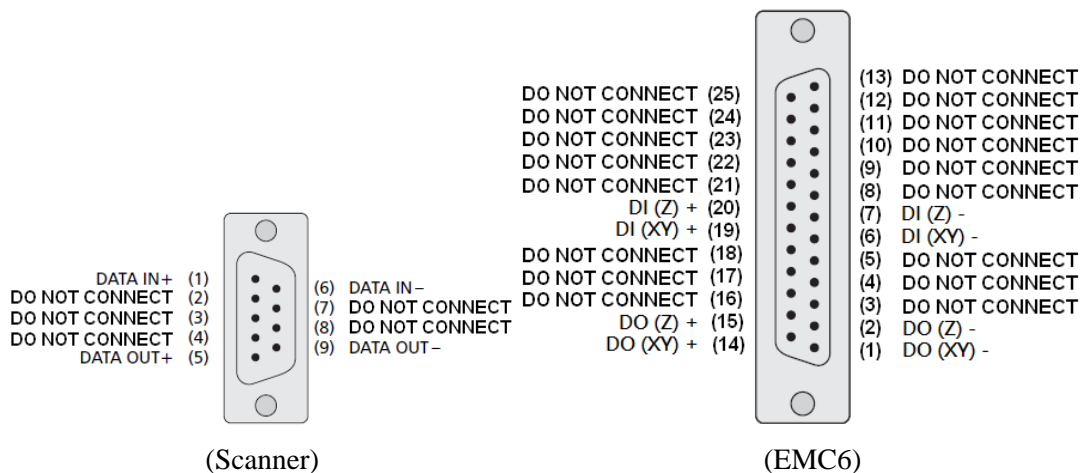
Notice :

- 20Bit Scanner setting : Parameter ID = 67 (20) 、 Parameter ID = 68 (0)
- 64Bit Scanner setting : Parameter ID = 65 (5) 、 Parameter ID = 66 (5) 、 Parameter ID = 67 (20) 、 Parameter ID = 68 (0)

4-3-5 ME-Link Scanner



4-3-6 SL2-100 20Bit Scanner



SL2-100 D-SUB 9F		EMC6 P1 D-SUB 25F	
Description	Pin	Description	Pin
DATA IN+	1	DO (XY) + / DO (Z) +	14 / 15
DATA IN-	6	DO (XY) - / DO (Z) -	1 / 2
DATA OUT+	5	DI (XY) + / DI (Z) +	19 / 20
DATA OUT-	9	DI (XY) - / DI (Z) -	6 / 7

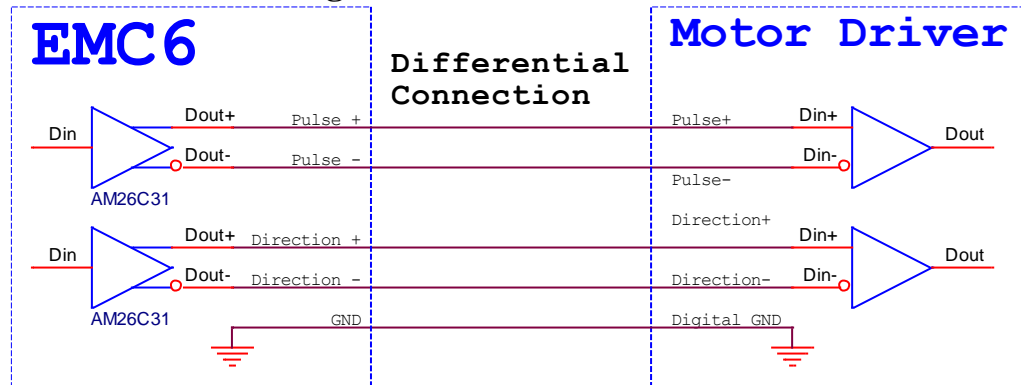
Notice :

- Scanner GND should not short to EMC6 GND. Otherwise scanner will keep stasis.

4-4 Stepper / Servo Motor Servo Cable Connection

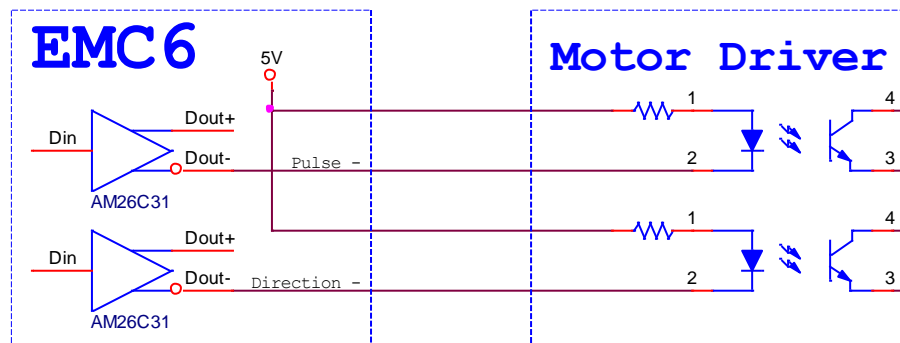
According to the Differential types of Motor Driver, there are three ways of connection between Motor Driver and EMC6's P5 ~ P8 connectors.

4-4-1 Differential Signal

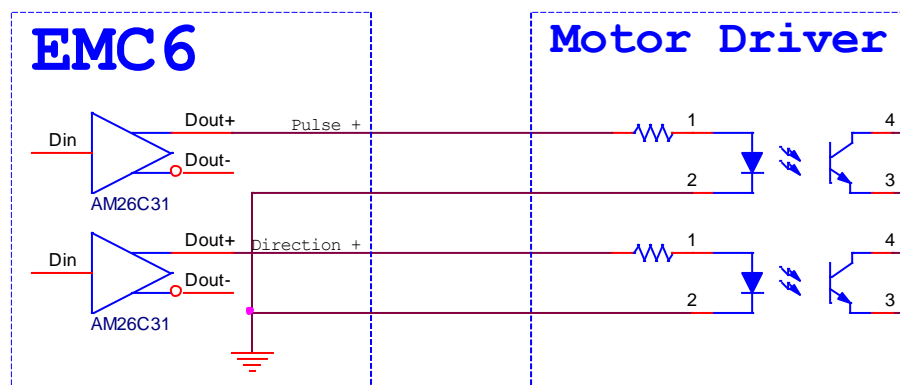


Note : Motor Servo GND should short to EMC6 GND.

4-4-2 Common Anode

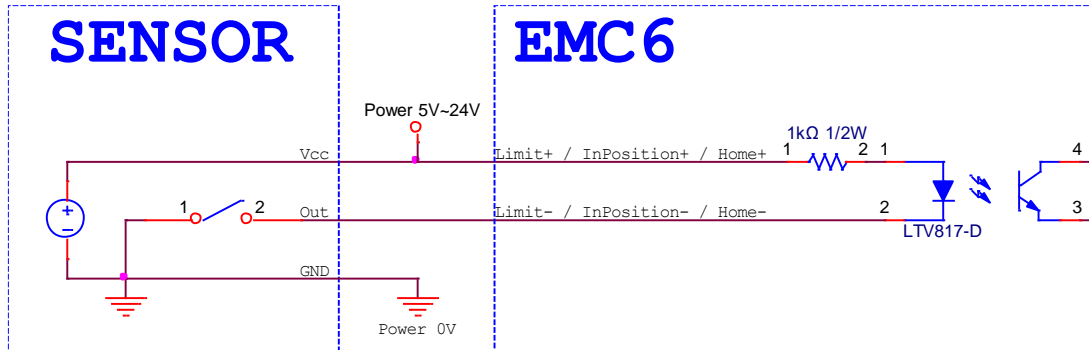


4-4-3 Common Cathode

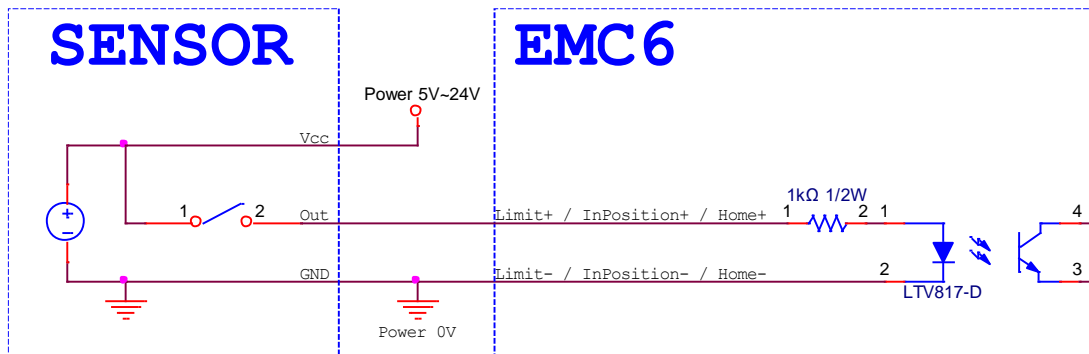


4-5 Sensor Connection

4-5-1 Common Cathode (NPN)

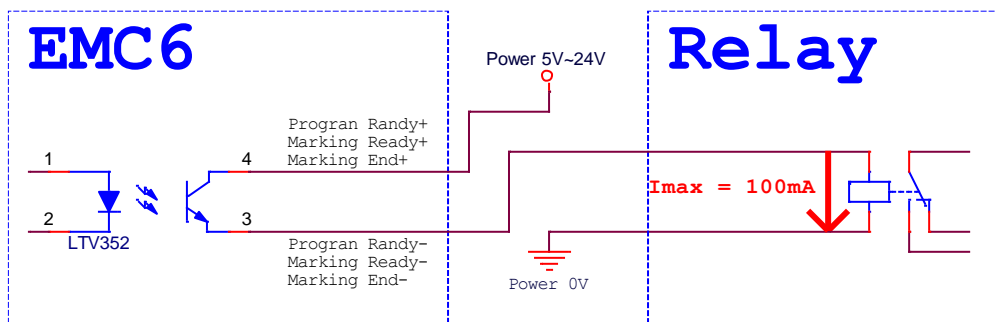
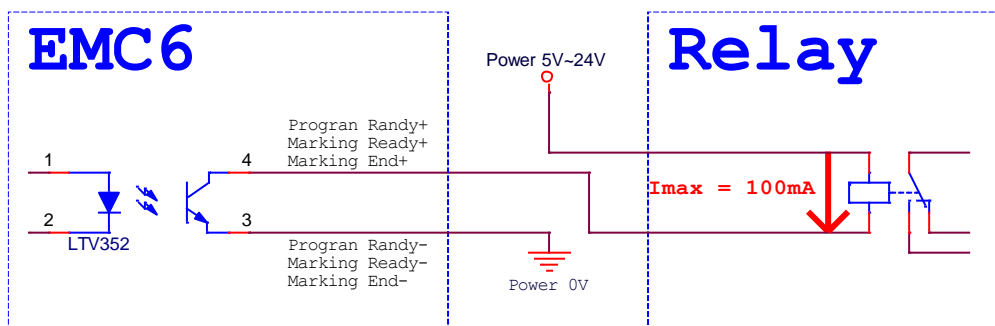


4-5-2 Common Anode (PNP)

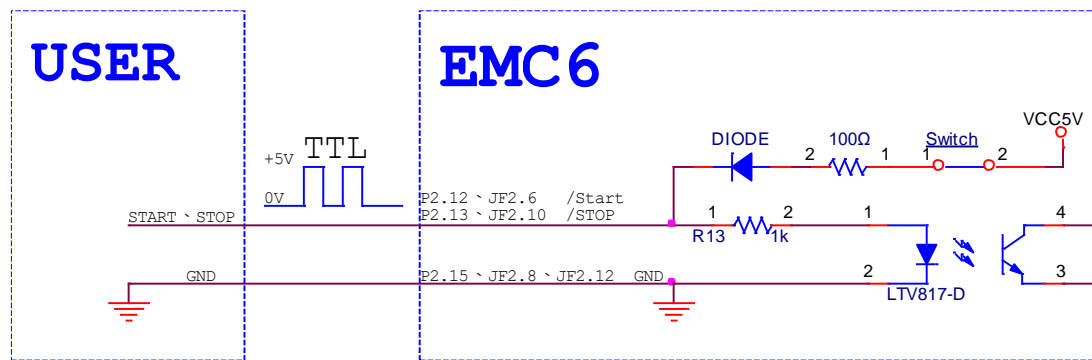


4-6 Optical coupler Connection

Program Ready / Marking Ready / Marking End Connection

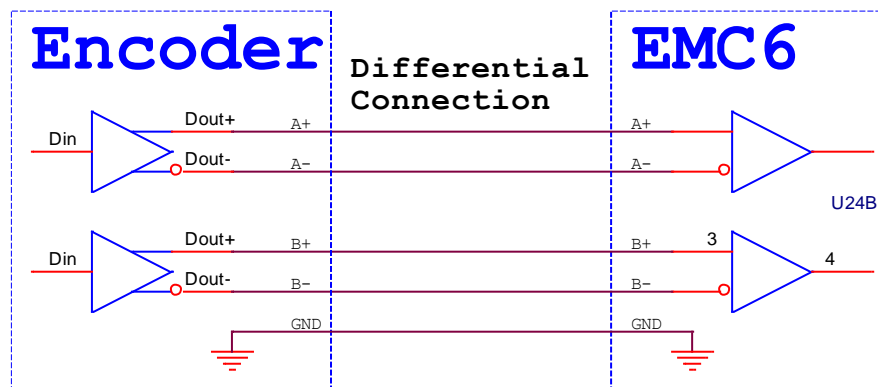


4-7-3 TTL Signal



Note : Please set Common Cathode, Please refer to [3-9 HWConfig Setting Description](#).

4-8 Encoder Signal



Note : Encoder GND should short to EMC6 GND.

4-9 HWConfig Setting Description

File Address : C:\Program Files\Marking Mate\Drivers\EMC6\HWConfig.exe

HWConfig EMC6

Card Select: 1

Scanner Type
Head1: XY2-100 16Bit
Head2: XY2-100 16Bit

Scanner alignment
 XY1 Lines Exchange
 XY2 Lines Exchange

Start / Stop Type
Start common cathode
 common anode
Stop common cathode
 common anode

Analog Setting
ANALOG1 0 ~ 10V
 0 ~ 5V
ANALOG2 0 ~ 10V
 0 ~ 5V

Motion Setting
R P/D CW/CCW
X P/D CW/CCW
Y P/D CW/CCW
Z P/D CW/CCW

Analog Test
DAC1: 100 %
DAC2: 100 %
Test

Signal Setting (0 / 1)
 Start Signal Reverse
 Stop Signal Reverse
 LaserON Signal Reverse
 PWM Signal Reverse
 FPK Signal Reverse
 Program Ready Signal Reverse
 Mark Ready Signal Reverse
 Mark End Signal Reverse

Extension
 Enable Multi Start
 Enable Encoder Multiplier

Card ID Define
Number (0 ~ 15): 6

Information
Hardware Flag: f9 ff ff ff
Hardware Version: 00010103

Write Format Exit

4-9-1 Scanner Type

Set P1、P2 Scanner Type

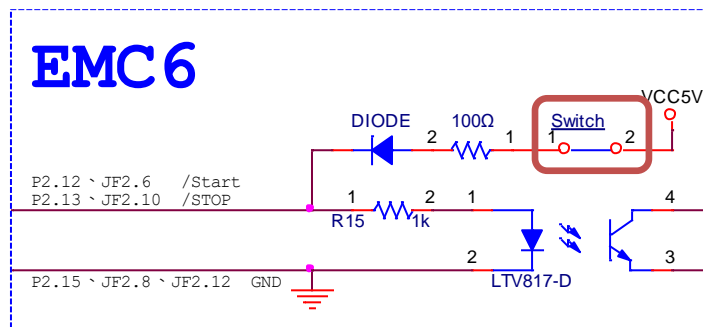
- **XY2-100 16Bit** : Typical digital signal for most of scanner on market.
- **Raylase XY2-100-E 18Bit** : Raylase SS-III Communication specifications.
- **CTI XY2-100 20Bit** : CTI XY2-100 Protocol 20Bit Communication specifications.
- **Canon 20Bit** : Canon scanner setting : Parameter ID = 67 (20)、Parameter ID = 68 (0)
- **Canon 64Bit** : Canon scanner setting : Parameter ID = 65 (5)、Parameter ID = 66 (5)、Parameter ID = 67 (20)、Parameter ID = 68 (0).
- **ME-Link** : Need to unlock the function.
- **SL2-100 20Bit** : Need to unlock the function.

4-9-2 Scanner alignment

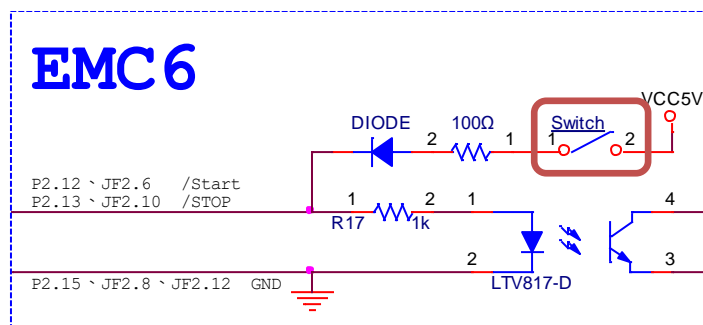
Exchanging X and Y line will affect correction file.

4-9-3 Start / Stop Type

- **Common Anode** : Figure Switch Close, /Start \ /Stop Active Low.



- **Common Cathode** : Figure Switch Open, Start \ Stop Active High.



4-9-4 Extension

- **Enable Multi Start** : While in automation mode, multiple starting marking signal trigger is allowed.

4-9-5 Motion Setting

- **Pulse Direction / CW CCW** : Select Motion output Pulse/Dir or CW/CCW.

4-9-6 Analog Setting

Select DAC1& DAC2 as 0~5V or 0~10V.

4-9-7 Analog Scale Table

Fine tune Analog1 and Analog2 output voltage.(0 ~ 65535 ≙ 0V ~ 11V)

#When press Format, the value will be set as default.

4-9-8 Analog Test

Make test Analog1 and Analog2 easier when adjust Analog Scale Table. When pressing Test, Analog1 and Analog2 will change to corresponding voltage.

4-9-9 Signal Setting

Enable Active Low.

4-9-10 Card ID Define

Setting card ID (For multi-card use).

4-9-11 Information

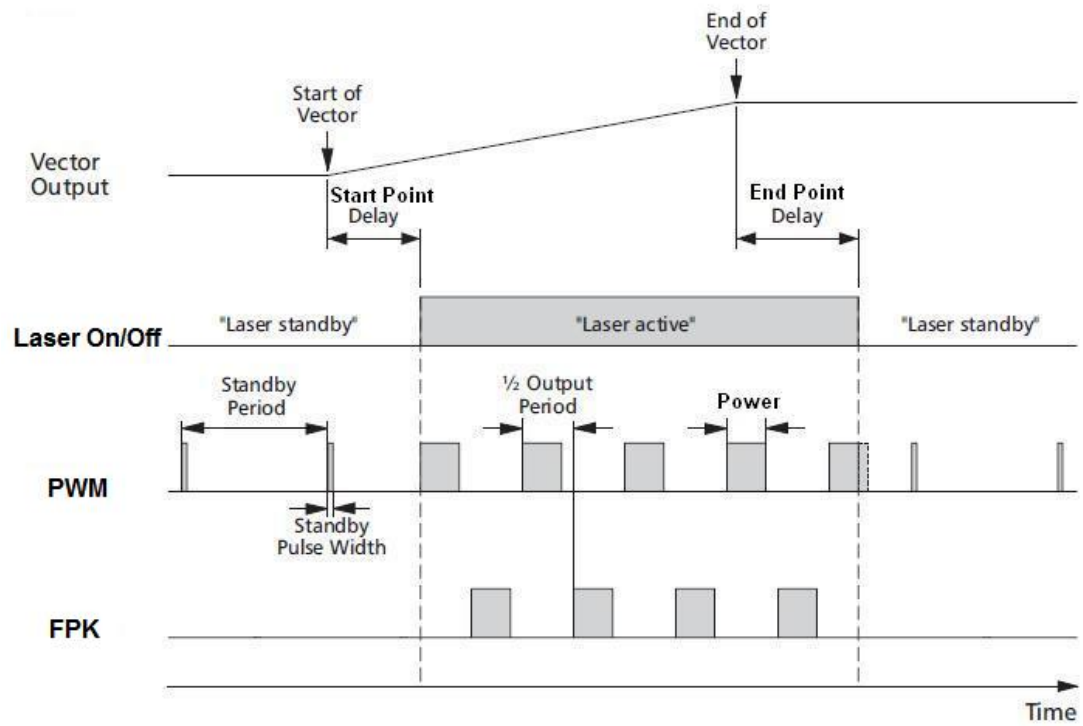
EMC6 related information.

4-9-12 Button

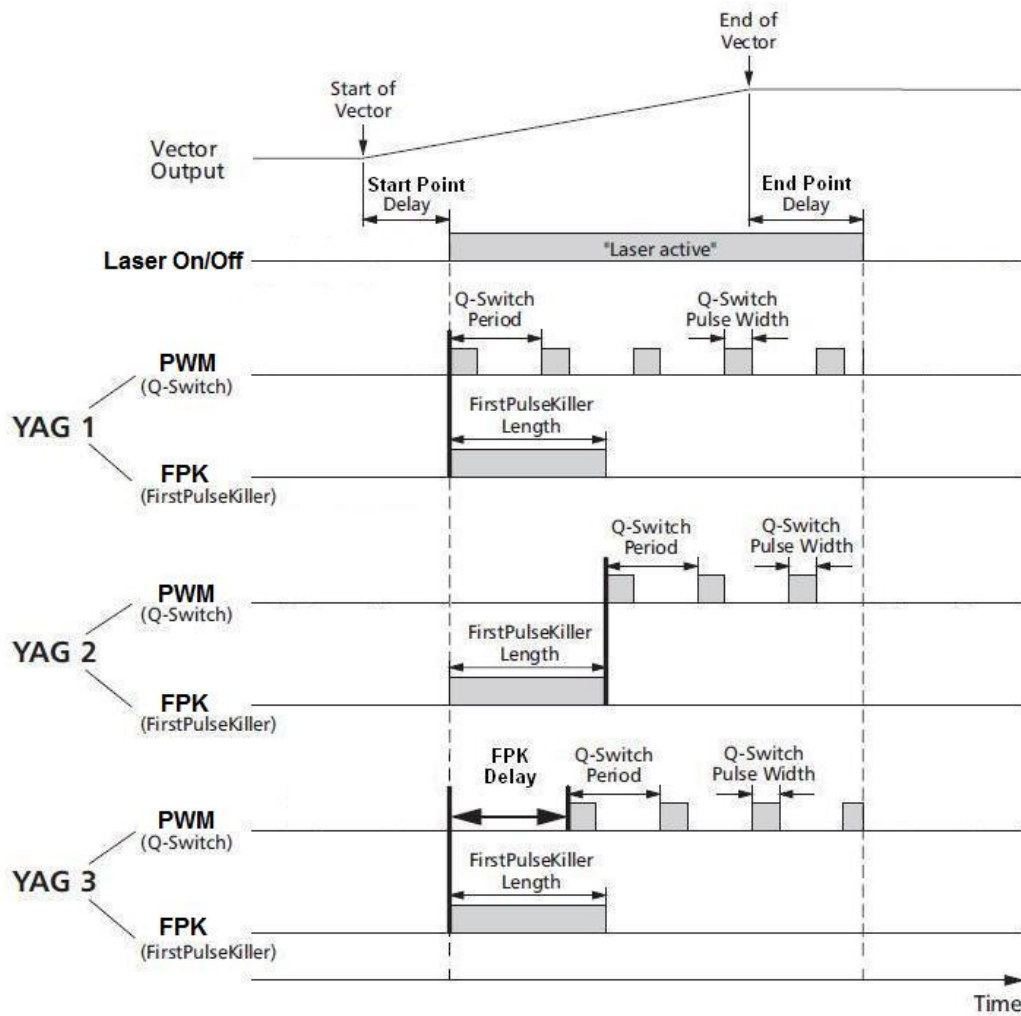
- **Write** : Click to reply any setting change.
- **Format** : Return every setting to default.
- **Exit** : Exit HWConfig.

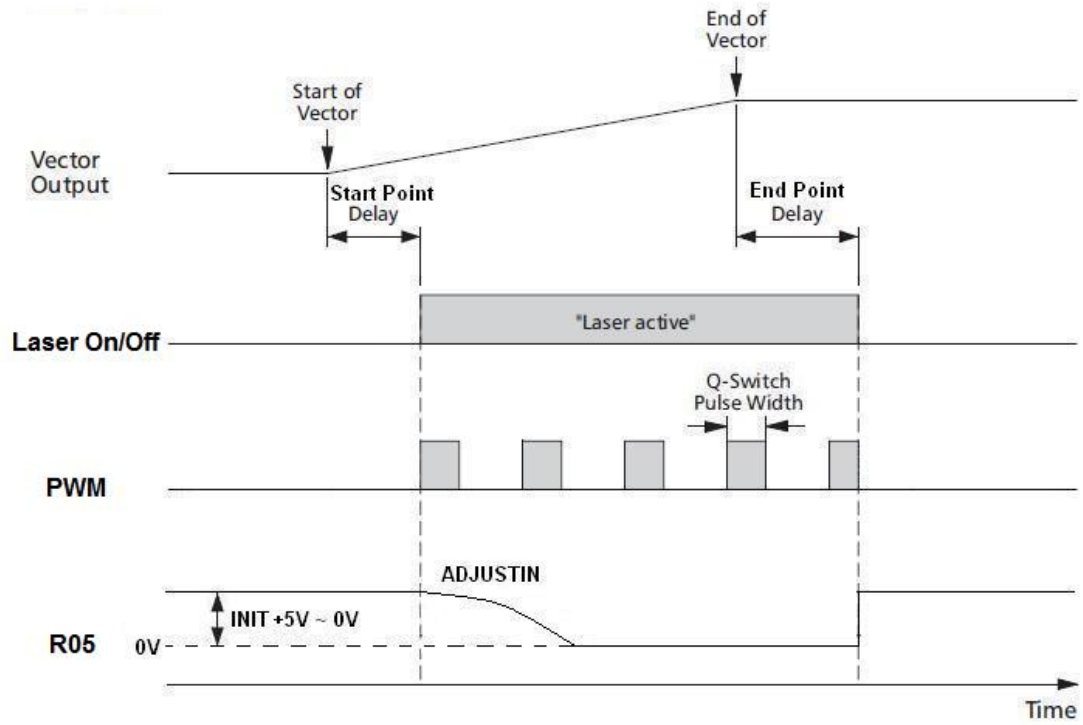
Appendix1 : Various Laser Setting Modes

TYPE 1 : CO2 Mode



TYPE 2 : YAG 1-3 Mode



TYPE 3 : R05 Mode

Appendix2 : LED Status

D7 : Boot success is bright, boot fail is dark. **(Note 1)**

D5 : Power status. Power level normal is bright

D6 : Seven-segment display. D6 is the card ID.

D1 ~ D4 : STATUS

Status	Descript	Note
D1D2 and D3D4 flickering	Boot success but not execute software	Normal
D1 flickering, others darkness	Software opened	Normal
Flickering at the same time	Boot error and enter backup session.	Failure (Note2)
Keep bright or darkness	Boot error.	Failure

Note1: If D7 is darkness, please contact the product supplier for help.

Note2: Please confirm if device manager has found the control card. If yes, please execute HWUpdate.exe to update.