PIO E84 OHT EMULATOR USER'S MANUAL

2015. 03. 02.

CanTops

< Table of Contents >

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1. About our Products(1)

1) Product Overview

The PIO E84 OHT EMULATOR is a device to input/output data signals automatically for communications with the PIO(slave) attached to the equipment without OHT through connection with the OHT PIO(master) according to the **"SEMI-E84"** communication standard.

This device is used to **"test the operation of communications with equipment".**

2) Product Feature

- Communication and emulation with equipment on behalf of OHT
- Confirmation of input/output between PIO(master) and PIO(slave) through LED
- Connected to the PIO DSUB 25 pin for use(I/O connection)
- Setting of emulator functions through DSUB 9-pin serial connection
- Use of the emulation start/error reset button switch
- Power supply with a 24V adaptor

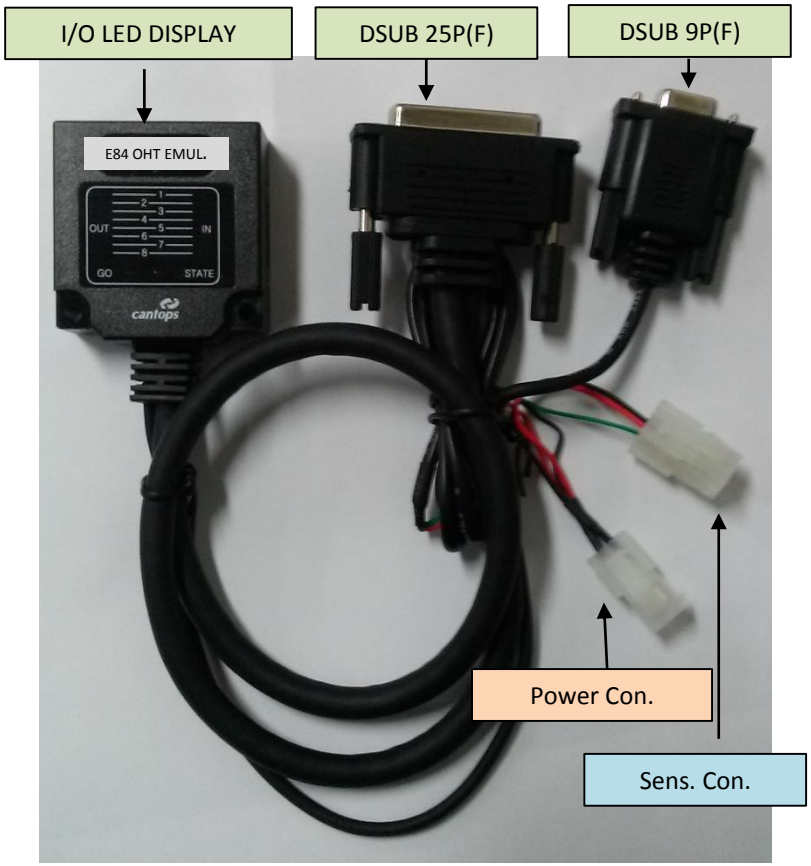
3) Product Code

Item name	Connection type
CTS-E84S-MC01	E84 OHT auto signal generator
CTS-PMAN-AA01	E84 manual and auto simulator

2. Product Specification(1)

1) I/O Operating Signal Display

Division	EMUL.	LED	Operating signal
OHT signal	OUT 1	Orange	Valid
	OUT 2	Orange	CS_0
	OUT 3	Orange	-
	OUT 4	Orange	-
	OUT 5	Orange	TR_REQ
	OUT 6	Orange	BUSY
	OUT 7	Orange	COMPT
	OUT 8	Orange	CONT
EQP signal	IN 1	Red	L_REQ
	IN 2	Red	U_REQ
	IN 3	Red	-
	IN 4	Red	READY
	IN 5	Red	-
	IN 6	Red	-
	IN 7	Red	HO_AVBL
	IN 8	Red	ES



< EMULATOR configuration >

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2. Product Specification(2)

Division	EMULATOR	LED	Operating signal
Communication status	GO	Green	Master PIO communication standby : EMULATOR LED On Master PIO communication start : EMULATOR LED Off
Operating status	STATE	Green	EMULATION normal operation: Flashing in a 0.25 sec interval EMULATION error generation: Flashing in a 0.05 sec interval EMULATION FOUP sensor detection standby: LED On

2) Others

Use environment	Storage environment	Storage temperature: -25 ~ 70°C Storage humidity: 5~95 %RH(However, there shall be no dew condensation)
	Operating environment	Operating temperature: 0 ~ 40°C Operating humidity:35~85 %RH (However, there shall be no dew condensation) Vibration: 4~150 Hz, 4.9m/s^2 or less
Power terminal	Input voltage	DC24V ±10% (DC 18~26V)
	Consumed current	20mA or less @ 24V
Component	Power terminal	24V adaptor
	DSUB 9 pin(Female)	1:1 cross connected cable
	Sensor switch	Start switch(push s/w)

3. Major Connector Function

1) DSUB connector

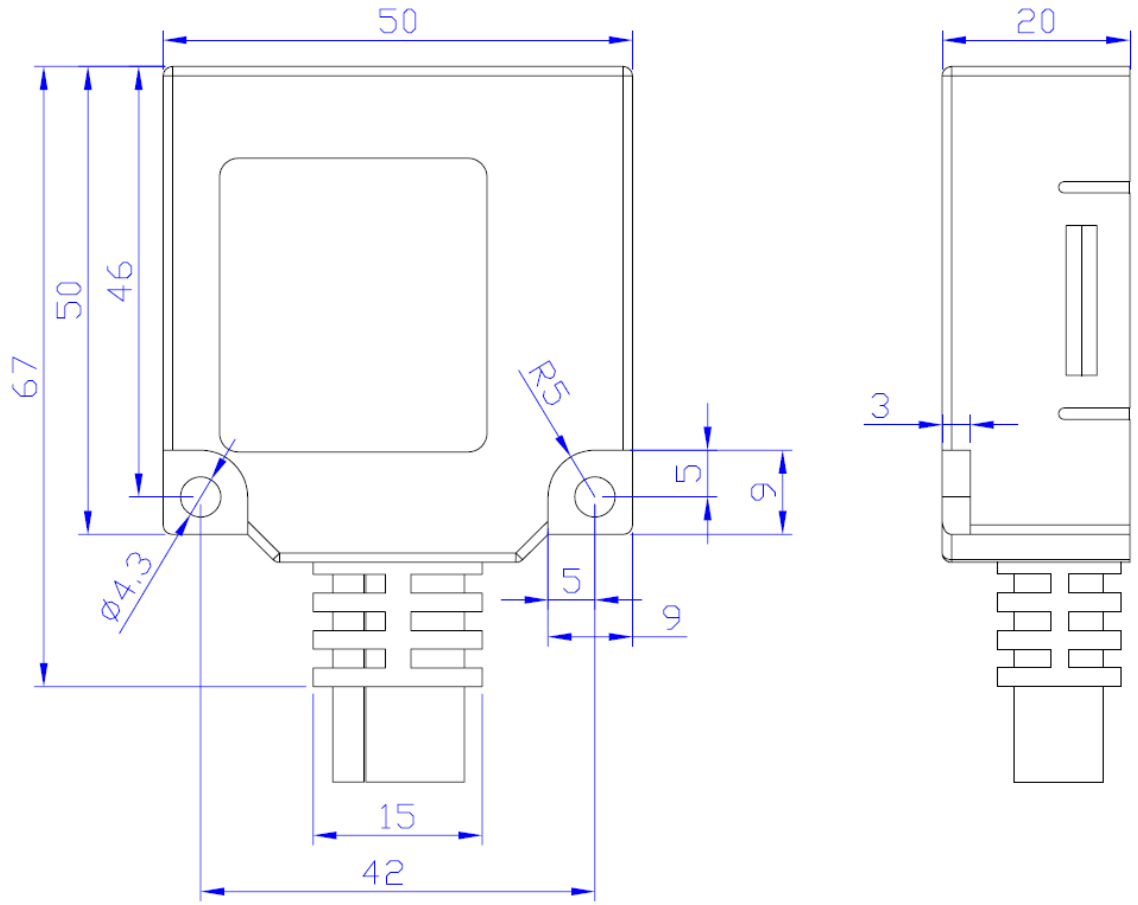
Division	Major function
DSUB 25P (Female)	I/O communication with PIO
DSUB 9P (Female)	Data communication timeout time setting ※ RF-PIO requires separate ID setting work.

2) MOLEX connector

Division	Specification		Pin information			
	Housing	Terminal	1	2	3	4
Molex 4p (Sens.)	5559-04	5558	NC	GND	+24V	Sens.
Molex 2p (Power supply)	5559-02	5558	+24V	GND	-	-

4. Apparatus Specification

1) Apparatus drawing



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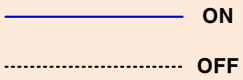
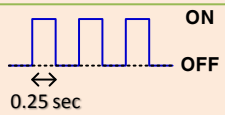
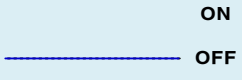
5. Usage after Connection with IR-PIO(1)

1) Operating Method and Sequence

① Connect the OHT IR-PIO(Master) DUSB 25P(M) to the DUSB 25P(F) connector of the PIO EMULATOR, and then connect the adaptor connector to the MOLEX 2p(power connector). **(Power input)**

② Check the **"GO, STATE LED"** in the PIO EMULATOR and the IR-PIO(Master).**(Before starting data communication)**

Division	Output	LED status	Communication timing
PIO EMULATOR	GO	On	
	STATE	Flashing in a 0.25 sec interval	
IR-PIO(Master)	GO	Off	
	STATE	Flashing in a 0.05 sec interval	

③ Data communication timeout and port setting for the PIO EMULATOR(DSUB 9P(F), using a serial port)

- Data communication timeout : Basic setting is provided during shipment to be used without separate change.

  ※ For the basic value and resetting of data communication timing for the equipment, refer to the emulation setting method in the appendix.

- Port setting : The E84 communication uses only CS_0 to require no separate setting.

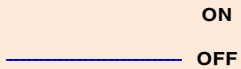
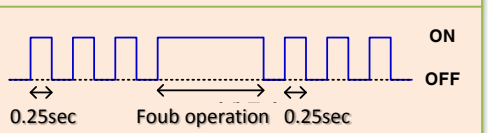
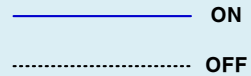
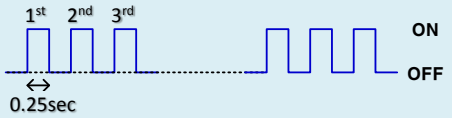
④ Install the IR-PIO(Master) such that its transmission/reception window may coincide with the equipment IR-PIO(Slave).

5. Usage after Connection with IR-PIO(2)

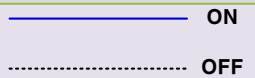
⑤ Push the switch connected to the MOLEX 4P(Sens.). **(Data communication start)**

- When ON/OFF once after switch connection : Load/Unload only once
- When keeping the switch ON : Repeated Load/Unload in a regular period

⑥ Check the GO/STATE LED in the PIO EMULATOR and the IR-PIO(Master).**(During data communication)**

Division	Output	LED status	Communication timing
PIO EMULATOR	GO	Off	
	STATE	Flashing in a 0.25 sec interval, and LED On only in a FOUP operation section	
IR-PIO(Master)	GO	On	
	STATE	Flashing in a 0.25 sec interval	

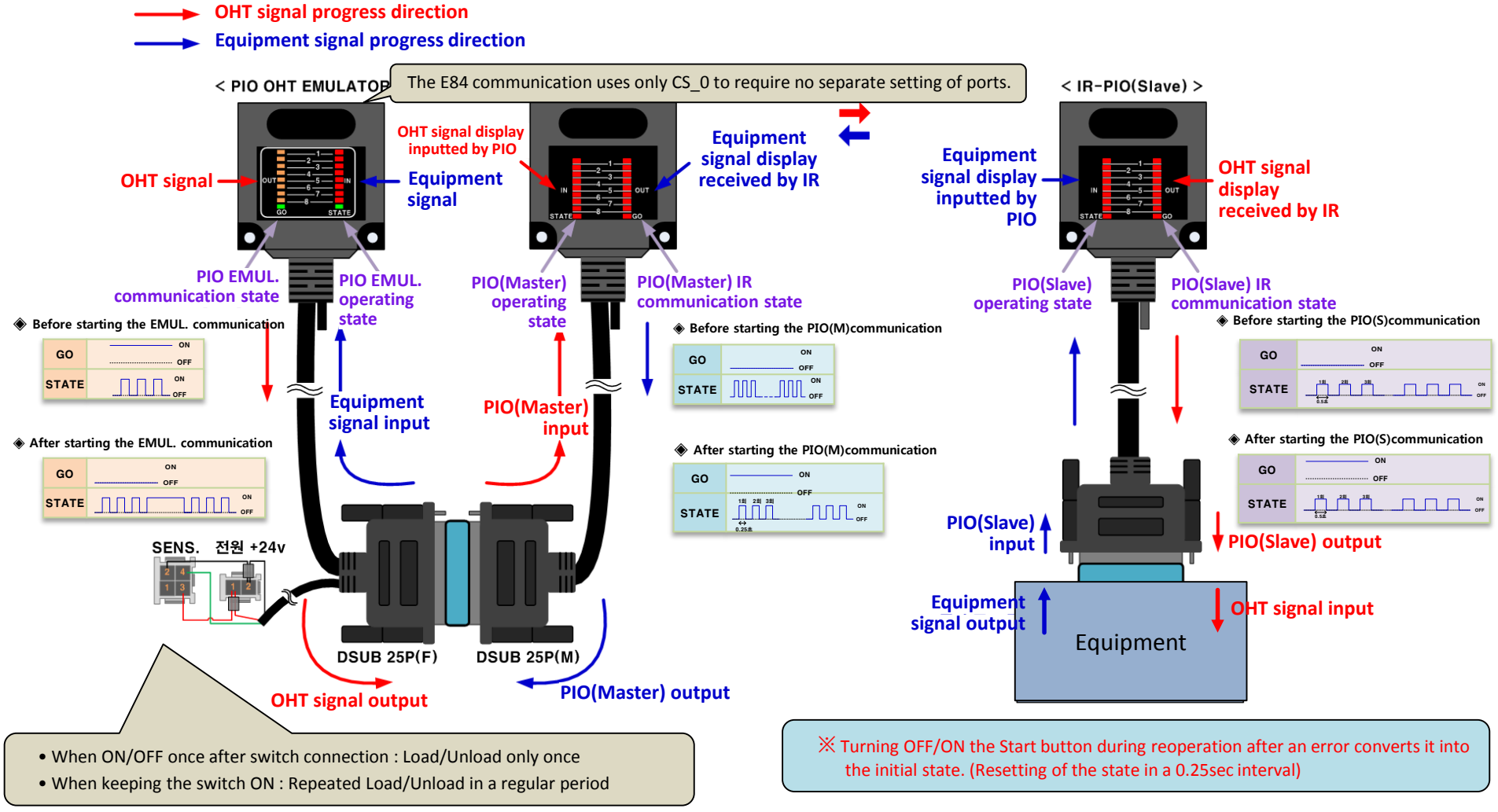
√ EMULATOR display in case of an error

Division	EMUL. output	LED status	Communication timing
PIO EMULATOR	GO	On	
	STATE	Flashing in a 0.05 sec interval	

※ Turning OFF/ON the Start button during reoperation after an error converts it into the initial state. (Resetting of the state in a 0.25sec interval)

5. Usage after Connection with IR-PIO(3)

2) IR-PIO data communication configuration diagram



- When ON/OFF once after switch connection : Load/Unload only once
- When keeping the switch ON : Repeated Load/Unload in a regular period

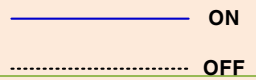
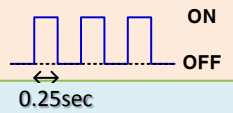
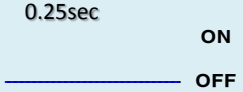
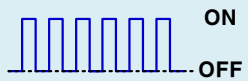
※ Turning OFF/ON the Start button during reoperation after an error converts it into the initial state. (Resetting of the state in a 0.25sec interval)

6. Usage after Connection with RF-PIO(1)

1) Operating Method and Sequence

① Connect the DUSB 25P(F) connector of the PIO EMULATOR to the OHT RF-PIO(Master) DUSB 25P(M), and then connect the adaptor connector to the MOLEX 2p(power connector). **(Power input)**

② Check the **"GO, STATE LED"** in the PIO EMULATOR and the RF-PIO(Master).**(Before starting data communication)**

Division	Output	LED status	Communication timing
PIO EMULATOR	GO	On	
	STATE	Flashing in a 0.25sec interval	
RF-PIO(Master)	GO	Off	
	STATE	Flashing in a 0.05sec interval	

③ Data communication timeout and port setting for the PIO EMULATOR(DSUB 9P(F), using a serial port)

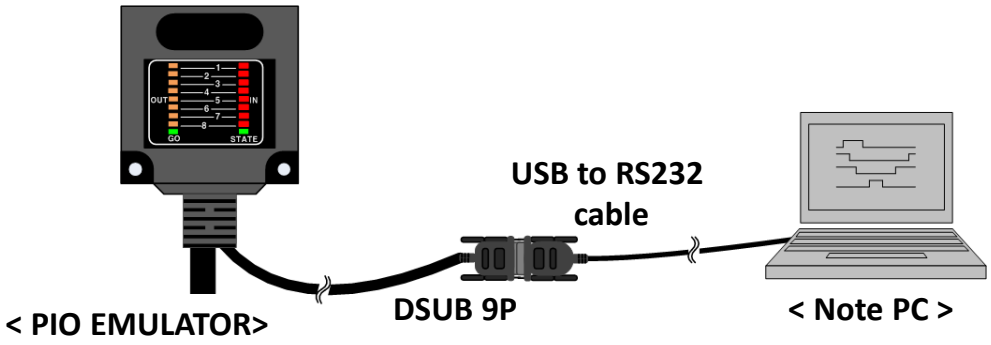
- Data communication timeout : Basic setting is provided during shipment to be used without separate change.

※ For the basic value and resetting of data communication timing for the equipment, refer to the emulation setting method in the appendix.

- Port setting : The E84 communication uses only CS_0 to require no separate setting.

6. Usage after Connection with RF-PIO(2)

④ Connect the USB to RS232 cable to the DSUB 9 pin of PIO EMULATOR and the note PC.



⑤ Execute the communication program, and then enter the same ID and channel as the equipment PIO.

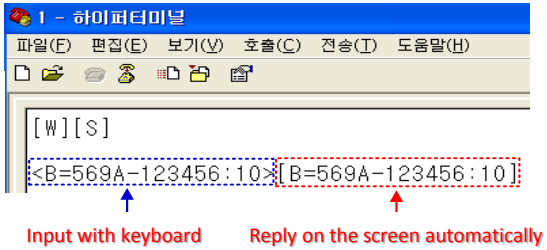
Ex) Input : **<B=569A-123456:10>**

Reply : **[B=569A-123456:10]**

Input to check the setting value: **<B>**

Reply of the set and stored value

: **[B=569A-123456:10]**



※ COM PORT setting
- √ Baud rate : 57600
- √ Data bits : 8
- √ Parity Type : None
- √ Stop bits : 1
- √ Flow control : None

⑥ Connect the DSUB 9P cross cable to the EMULATOR DSUB9 pin and the RF-PIO DSUB9 pin.

※ Use the cable provided by Cantops.

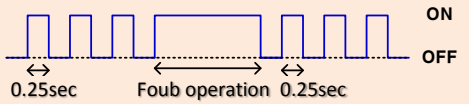
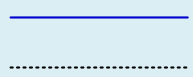
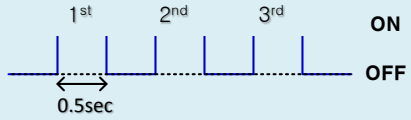
※ Refer to the data communication configuration diagram.

⑦ Push the switch connected to the MOLEX 4P(Sens.). **(Data communication start)**

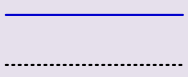
- When ON/OFF once after switch connection : Load/Unload only once
- When keeping the switch ON : Repeated Load/Unload in a regular period

6. Usage after Connection with RF-PIO(3)

⑧ Check the GO/STATE LED in the PIO EMULATOR and the RF-PIO(Master).**(During data communication)**

Division	Output	LED status	Communication timing
PIO EMULATOR	GO	Off	
	STATE	Flashing in a 0.25 sec interval, and LED On only in a FOUP operation section	
RF-PIO(Master)	GO	On	
	STATE	Flashing in a 0.5 sec interval	

√ EMULATOR display in case of an error

Division	EMUL. output	LED status	Communication timing
PIO EMULATOR	GO	On	
	STATE	Flashing in a 0.05 sec interval	

※ Turning OFF/ON the Start button during reoperation after an error converts it into the initial state. (Resetting of the state in a 0.25sec interval)

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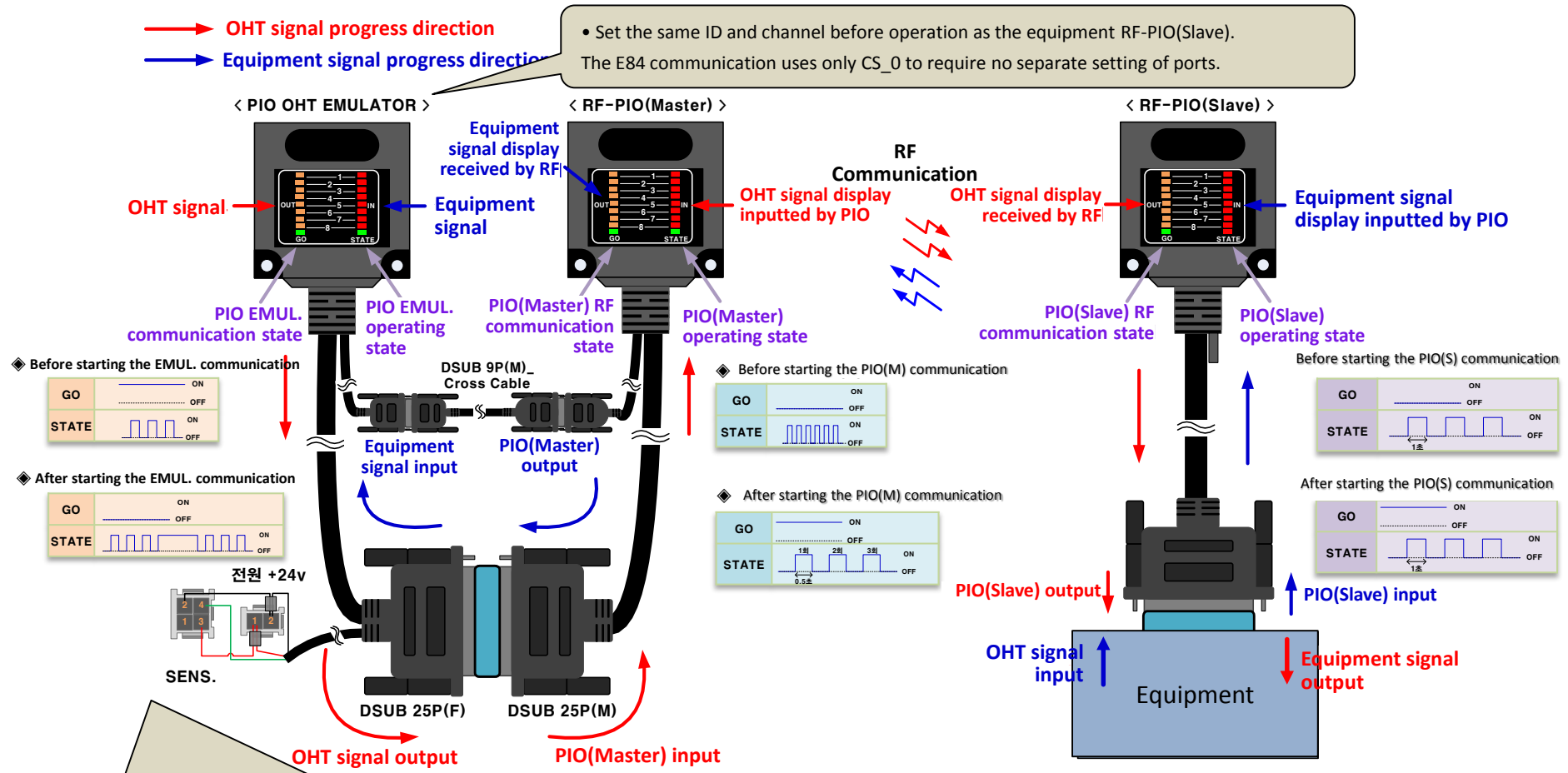
6. Usage after Connection with RF-PIO(4)

2) RF-PIO data communication configuration diagram



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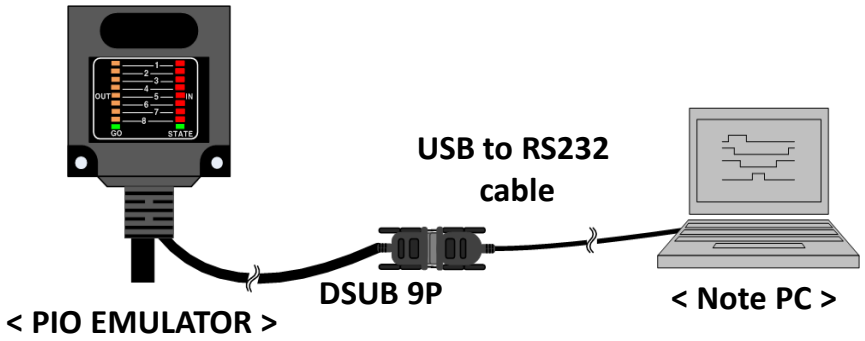
Appendix : Emulation Setting(1)

1) Usage

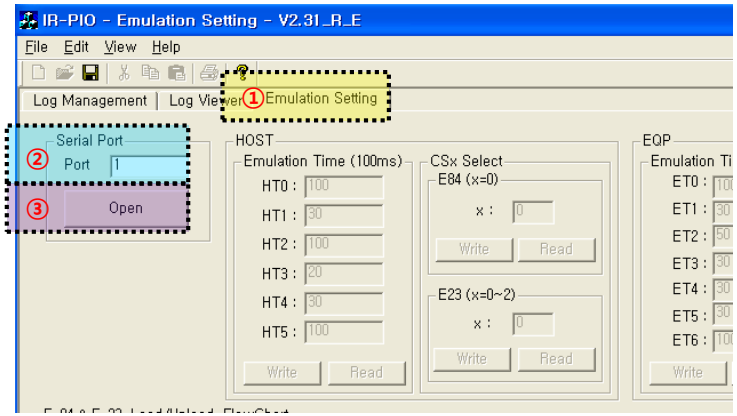
- Component installation



① Select the **"Emulation Setting"** tab.

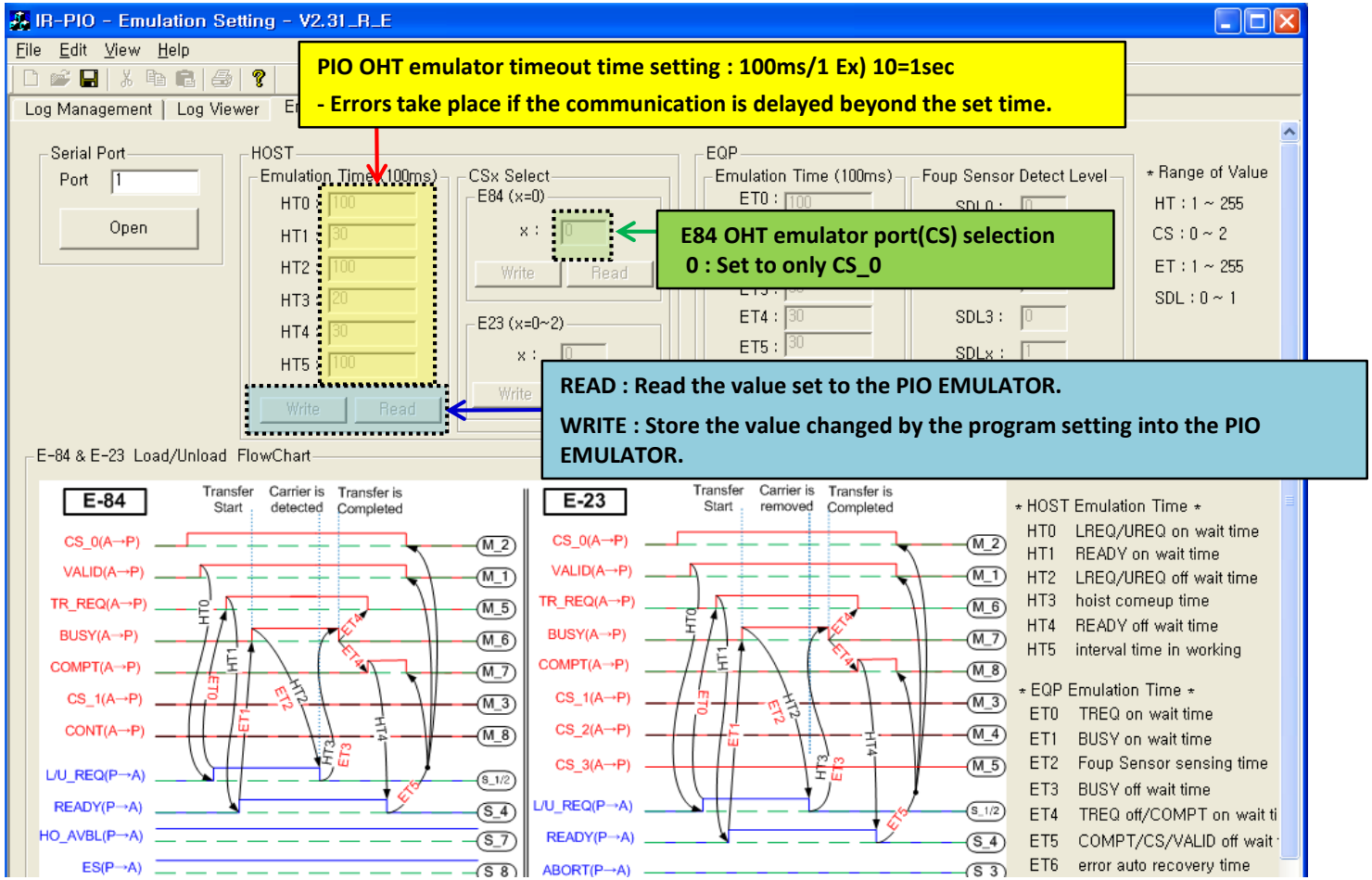
② Set the **"Port"** Serial com port.

③ Click the **"Open"** (If the port opens, then it converts into the CLOSE display.)



Appendix : Emulation Setting(2)

④ Set the **"data communication timeout time and port".**



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