ARGOX
a SATO company

Service Manual

GPIO

GPIO interface

1. Specifications

1.1 GPIO interface is designed for iX4 series printer and external peripheral devices.

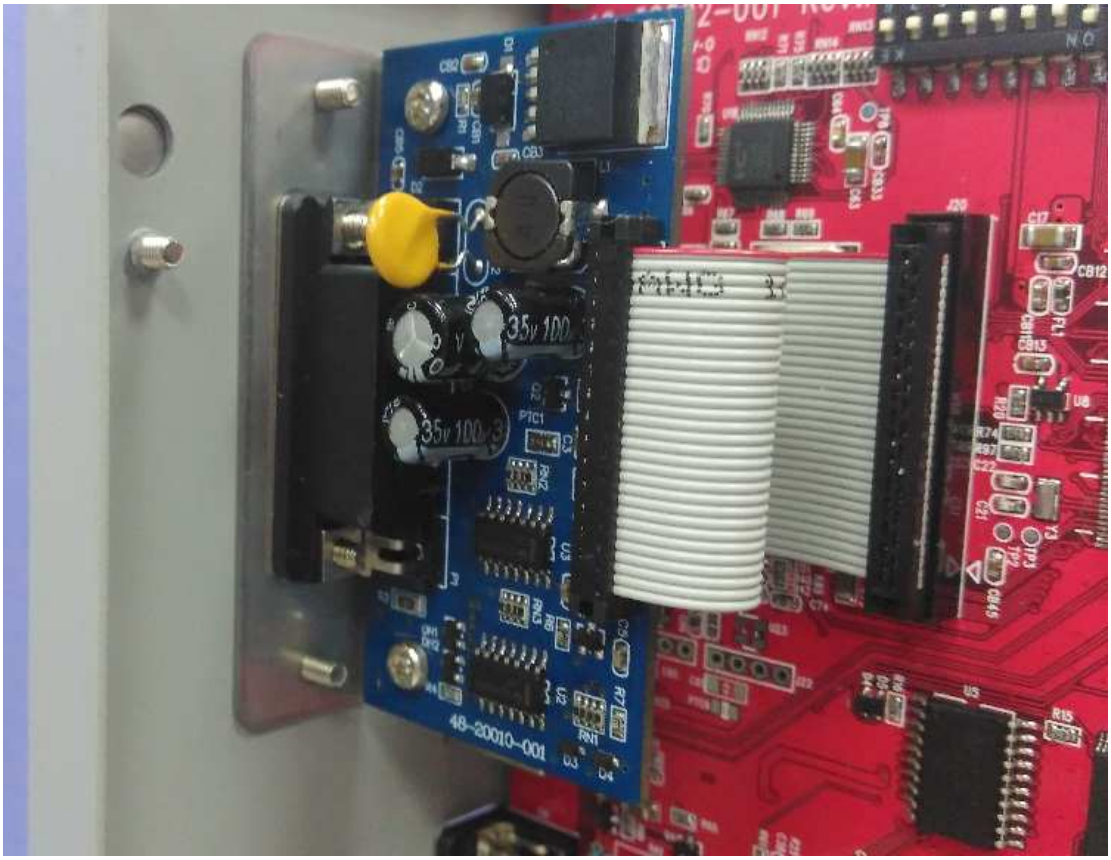
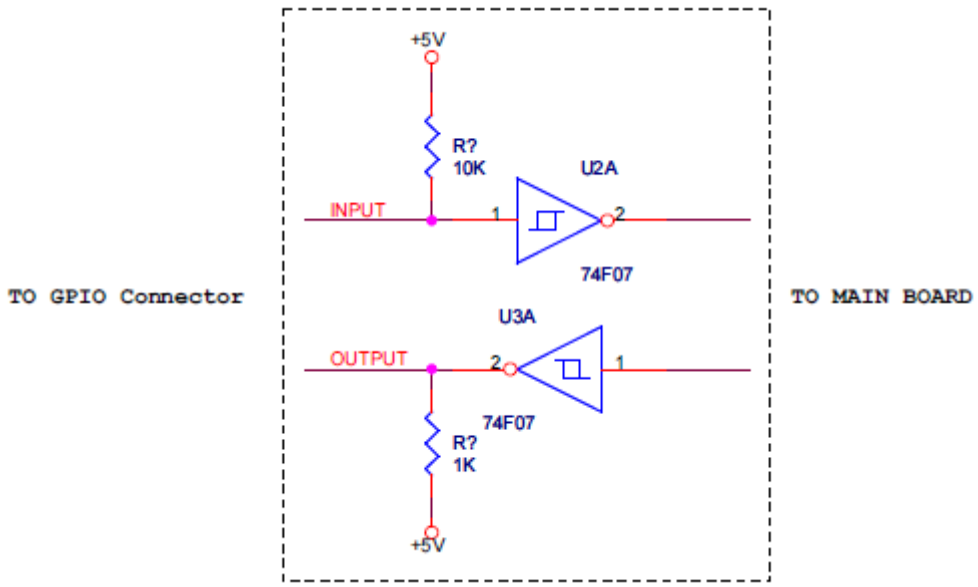


Figure 1 Installation of iX4 printer

1.2 GPIO interface works in special control by input signals level change, it's programmable or customized and output signals shown the printer status or functional indicator.



1.3 The GPIO interface is as Figure 2 and Figure 3, it use a D-Sub 15 pin female connector.

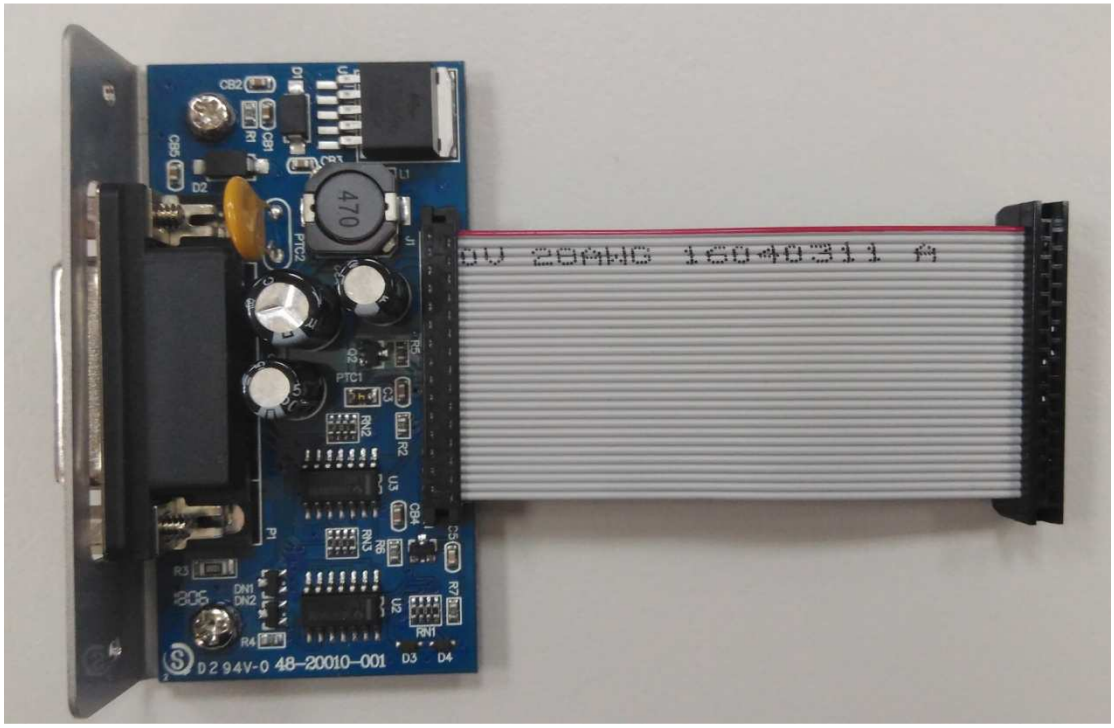


Figure 2 GPIO board

Figure 3

1.4 Connector pin definitions are as below:

Pin No.	Type	Default Function	Description
1	P	GND	Power return path of +5V
2	P	+5V	Power plus path of +5V.
3	I	Start Print	Start to print When this signal triggered (from high to low), do the print job by command or internal pattern.
4	I	Feed	Feed, when this level of signal in low state, it's same as panel "FEED" key operation.
5	I	Pause	Pause, when this signal triggered (from high to low), do the pause and stop the print job until the next trigger happen.
6	I	Re-Print	Re-Print, when this signal trigger (from high to low), do the previous print job once, it was same as 'Start to Print" function but don't need any action.
7	P	24V	Power plus path of +24V
8	P	GND	Power return path of +24V.
9	NC	Not Connect	
10	O	Serv_Req	Service Require, output this signal (active low) when printer was during printing.
11	O	End_Print	End of Print, output a low pulse in 500ms for print ending.
12	O	Media Out	Media out, output this signal (active low) when media out happened.
13	O	Ribbon Out	Ribbon out, output this signal (active low) when Ribbon out happened.
14	O	Data Ready	Data Ready, output this signal (active low) when printer was ready (idle).
15	O	OPT_Fault	Output Fault, active low when printer error happened.

Type: P for Power, I for Input, O for Output

Table 1

2. Connector pin specification

2.1 All of input pins in table are defined as standard TTL level.

2.2 All of output pins in table are defined as standard TTL level, they are pull-up 1K ohm internally by 5V and maximum sink current is 30mA.

2.3 There are 2 power supplies for external devices, the maximum supply current of 5V is 500mA, and 24V is 1A.

2.4 Because all of signals were not isolated, the ground (pin1 and pin8) of GPIO board and signal ground of external device need to connect directly, it should avoid different GND pin connecting GPIO board and make this board fail.

2.5 Suggest the length of connect cable between GPIO interface and external device should less than 15 feet to avoid the noise and error happen.

3. Description of input/output signals

3.1 There 4 input pins for application.

(1) Pin 3

Start Print:

a. This signal active make the printer start to do the print job, it is active low.

b. When print job was finished, the output pin of End Print will send a pause (500ms), and the external device should disable the Start Print signal.

c. The output pin of Data Ready will follow the “Start Print” signal to external device.

d. Timing chart is as Figure 4.

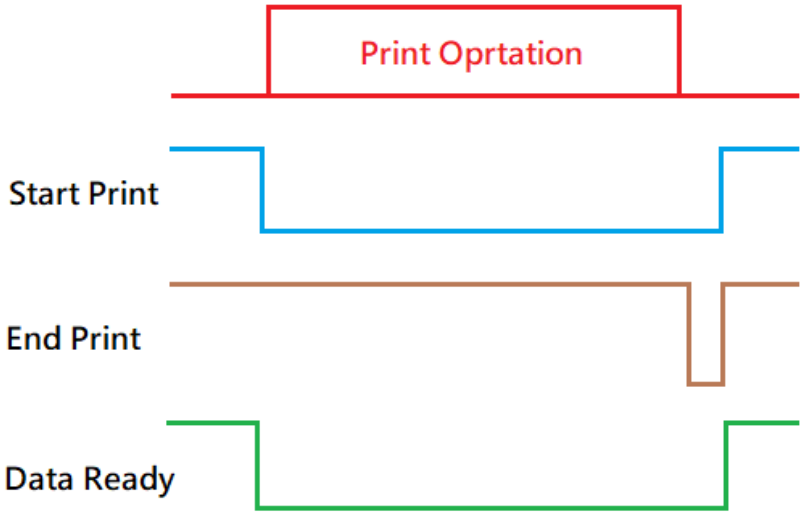


Figure 4

(2) Pin 4

Feed:

a. The signal is make the printer feed action; the distance is determining the internal setting.

b. When during feed processing, the output pin of Data Ready will active and disable till the end of feed.

c. The timing chart is as Figure 5

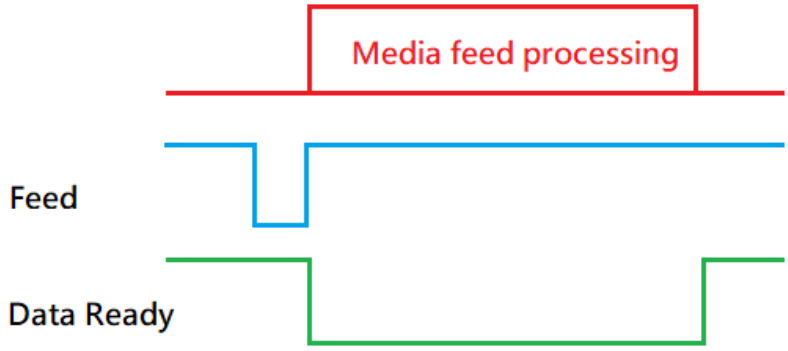


Figure 5

(3) Pin 5

Pause:

a. The signal is make the printer pause action; it is toggle (on/off) mode when printer needs temporary stop or back to standby state.
b. When during pause processing, the output pin of Data Ready will active and disable till the pause active again.
c. The timing chart is as Figure 6

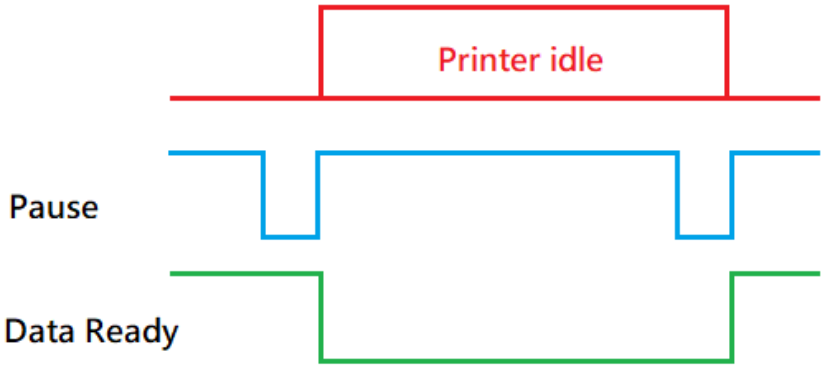


Figure 6

(4) Pin 6

Re-Print:

a. This signal active make the printer start to do previous print job again, it is active low.
b. When print job was finished, the output pin of End Print will send a pause (500ms), and the external device should disable the Start Print signal.
c. The output pin of Data Ready will follow the “Start Print” signal to external device.
d. Timing chart is as Figure 7.

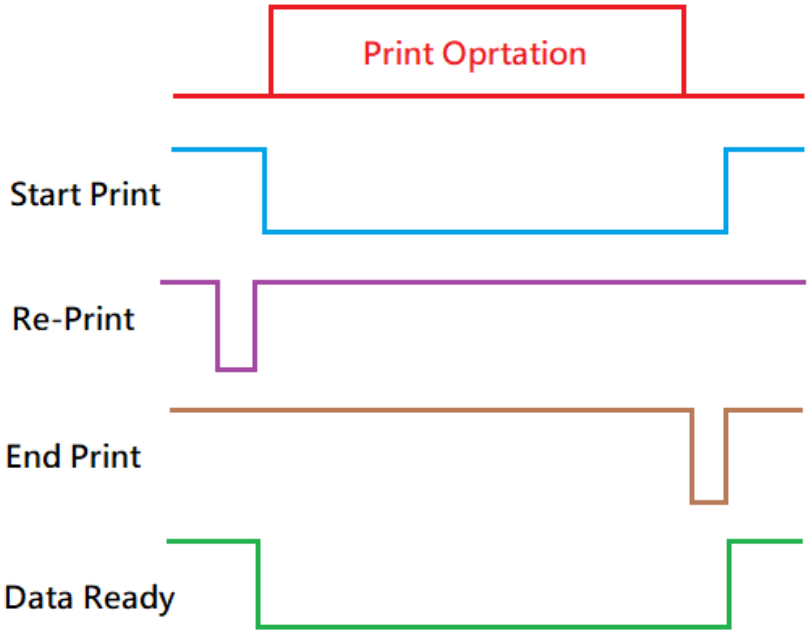


Figure 7

3.2 There are 6 output pins for printer's application; the timing chart is as Figure 8.

(1) Pin 10

Serv_Req:

a. The signal will active when printer is during normal printing process.
b. The timing is same as printer's printing period.

(2) Pin 11

End Print:

a. It indicates the printer's status and active when print job was done.
b. The action timing is fixed to 500ms.

(3) Pin 12

Media out:

a. It indicate the media status and active when media (paper) out happened.
b. This signal will be cleared when "Re-Print" signal received, and if the status of media out was still exist, it will back to the last situation and waiting to remove this issue.

(4) Pin 13

Ribbon out:

a. It indicate the ribbon status and active when ribbon out happened.
b. This signal will be cleared when "Re-Print" signal received, and if the status of ribbon out was still exist, it will back to the last situation and waiting to remove this issue.

(5) Pin 14

Data Ready:

a. It indicate the printer's status and active when printer in idle state.
b. In this state, printer could accept input signal to start print job.

(6) Pin 15

OPT Fault:

a. It indicate all of the printer's error status, when it active, no function could be executed, please do the troubleshooting process.

b. If need to restore the printer function after faults remove, send the "Re-Print" signal (Start Print also synchronous) to do the undone print job, or do last print job again.

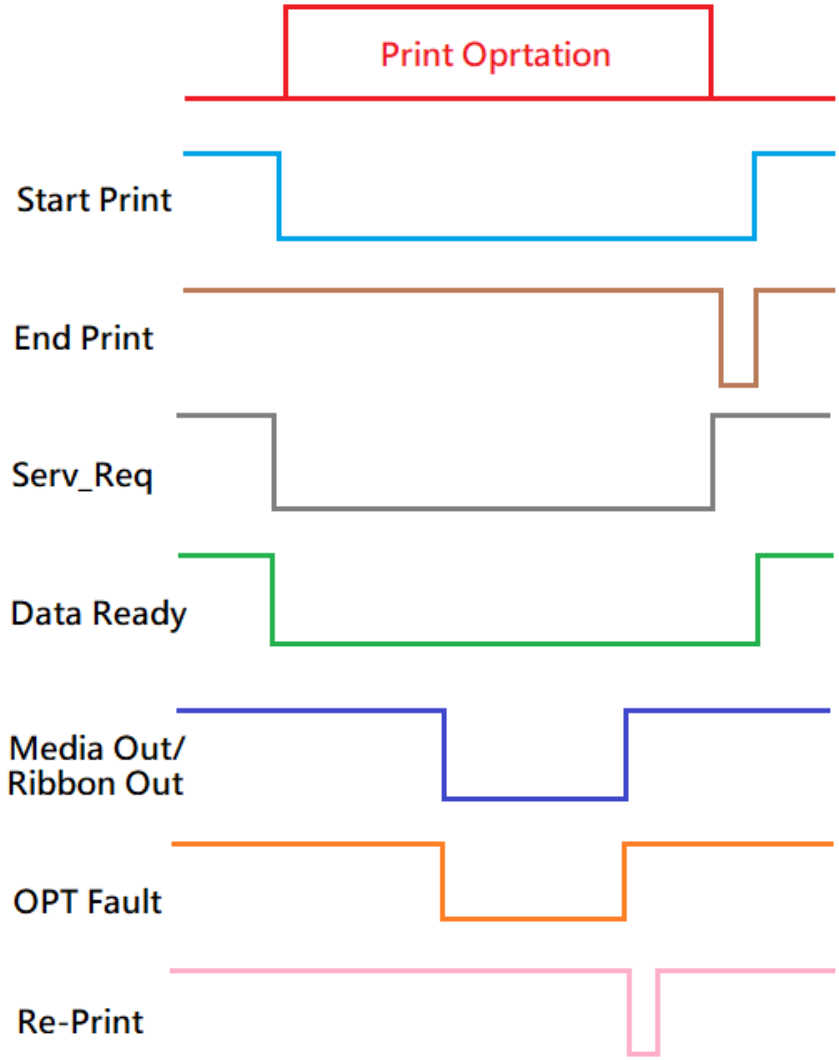


Figure 8

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