X-2300E/X-3200E Series

Technical Manual

Rev.1.01

Table of contents

1. GENERAL INTRODUCTION

1.1. Scope

This manual contains the information necessary for the proper maintenance of X-2300E/X-3200E series printer of ARGOX. Most of the information included relates to hardware and mechanical parts.

1.2. Printer description

The ARGOX X-2300E/X-3200E series printer is a high-performance low-cost direct thermal and thermal transfer label printer. Its user-friendly design and affordable price set new standard for the heavy duty label printer in retail, office and industrial applications. The printer is designed with the most efficient memory management technology -*True Speed,* prints up to 5 or 6 inches /second when bundled with its smart printer driver, the user can easily print a label by using any Windows applications, e.g. Microsoft Word, Bar Tender, Printer Utility and Font Utility under Windows 2000/NT/XP/Vista/7. All popular bar codes and fonts are resident in the printer memory to handle versatile application .It also provide a PS/2 keyboard interface for standalone operation which enables the user to control the printer by using a simple PS/2 keyboard .

The solidly designed mechanism allows quick and easy media and ribbon loading. The optional Dispenser and Cutter provide the alternatives of fan-fold label and continuous media handling.

1.3. Related manuals

- User’s manual
- Programmer’s manual
- Ethernet Printer User’s Manual

2. PRINTER SPECIFICATION

2.1. Printing

Model	X-2300E	X-3200	X-3200E
Emulation	PPLA/PPLB and PPLZ		
Resolution	203 DPI (8 dots/mm)	300 DPI (12 dots/mm)	
Interface	RS232, USB, CENTRONICS, Ethernet, PS/2,	RS232, USB, CENTRONICS,PS/2	RS232, USB, CENTRONICS, Ethernet, PS/2,
Print method	Thermal transfer and direct thermal		
Max print width	Max 4.09" (104mm)	Max 4.16" (105.7mm)	
Max print length	Max 100" (2540mm)	Max 50" (1270mm)	
Print speed	Up to 6” (152.4mm) per second	Up to 5” (127mm) per second	
Memory	16M bytes DRAM (13M user available), 8M bytes FLASH (6M user available)		
Ribbon	Ribbon wound ink-side in or ink-side out available		
Media Sensors	Reflective (movable) x 1, See-through (movable) x 1, Head Open Switch x 1		
RTC	RTC on board (with CR2032 battery; 3V)		
CPU	32 bit RISC microprocessor		
Panel	3 LEDs, 3 buttons		
Display	Type 1: LCD Display 16 characters x 2-lines Type 2: LCD Display 18 characters x 2-lines or 9 Chinese word x 2-line		

2.2. Media and Ribbon

Item	Description
Media size	Max width 4.4” (112 mm)
	Min width 1” (25.4 mm)
	Thickness .0025”~. 01” (.0635mm ~. 254mm)
	8” (203mm) OD on a 3” (76mm) ID core 7” (178mm) OD on a 1.5” (38mm) ID core
Ribbon type	Wax, Wax/Resin, Resin (Ribbon wound ink-side in or ink-side out)
Ribbon size	Ribbon width – 1"~4” (25.4~101.6mm)
	Ribbon roll – max OD 3” (76 mm)
	Ribbon max length – WAX 360M, Resin 300M
	Core size - ID 1” core (25.4 mm)
Media type	Roll-feed, die-cut, continuous, fan-fold, tag, ticket in thermal paper or plain paper

2.3. Fonts

2.3.1. Internal Font

Programming Language	PPLA
Internal fonts	9 fonts with different point size 6 fonts with ASD smooth font. Courier font with different symbol sets.
Symbol sets (Code pages)	Courier font symbol set: Roman-8, ECMA-94, PC, PC-A, PC-B, Legal, and PC437 (Greek), Russian.
Font size	1x1 to 24x24
Character rotation	0, 90, 180, 270 degree, 4 direction rotation

Programming Language	PPLB
Internal fonts	5 fonts with different point size
Symbol sets (Code pages)	8 bits code page : 437, 850, 852, 860, 863, 865. 7 bits code page: USA, BRITISH, GERMAN, FRENCH, DANISH, ITALIAN, SPANISH, SWEDISH and SWISS. (300 dpi only supports 437,850,852,860,863,865)
Font size	1x1 to 24x24
Character rotation	0, 90, 180, 270 degree, 4 direction rotation

Programming Language	PPLZ
Internal fonts	8 (A~H) fonts with different point size. 8 AGFA fonts: 7 (P~V) fonts with fixed different point size (can't scale). 1 (0) font with scaling point size.
Symbol sets (Code pages)	USA1, USA2, UK, HOLLAND, DENMARK/NORWAY, SWEDEN/FINLAND, GERMAN, FRANCE1, FRANCE2, ITALY, SPAIN, MISC, JAPAN, IBM850.
Font size	1x1 to 10x10
Character rotation	0, 90, 180, 270 degree, 4 direction rotation

2.3.2. Font Utility

The function of converted files is extended. It supports ASCII and Asia fonts; the soft-font supports ASCII and the Argox supports ASCII and Asia fonts. The following context will detail to user

.

I. Option:

Before downloading and converting fonts, user must set related in **Option page**.

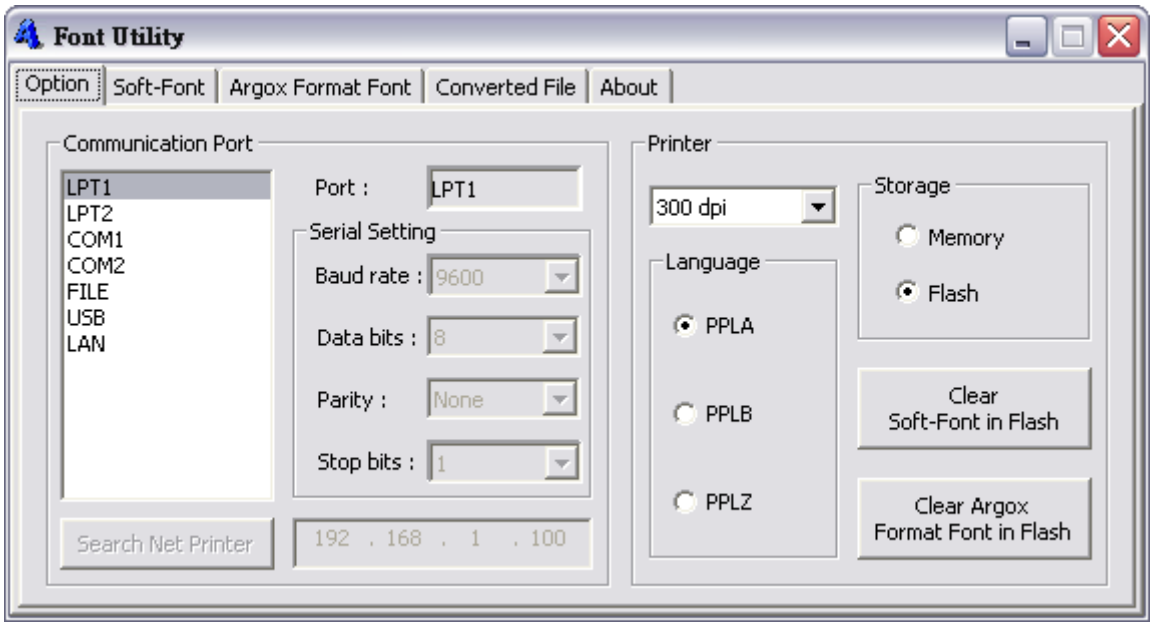
1. **Communication:**

   User can choose interface for download and related setting in this option.

2. **Printer:**

   First, user must choose correct dpi and language, because each dpi has different file size and each language has different formats.

   The storage can let fonts to be saved in memory or flash (if fonts are not saved in flash, after restarting the font will be cleared). User can clear soft-font or Argox format font in flash individually.



II. Soft-Font:

The converted range is from 0~255 in soft-font

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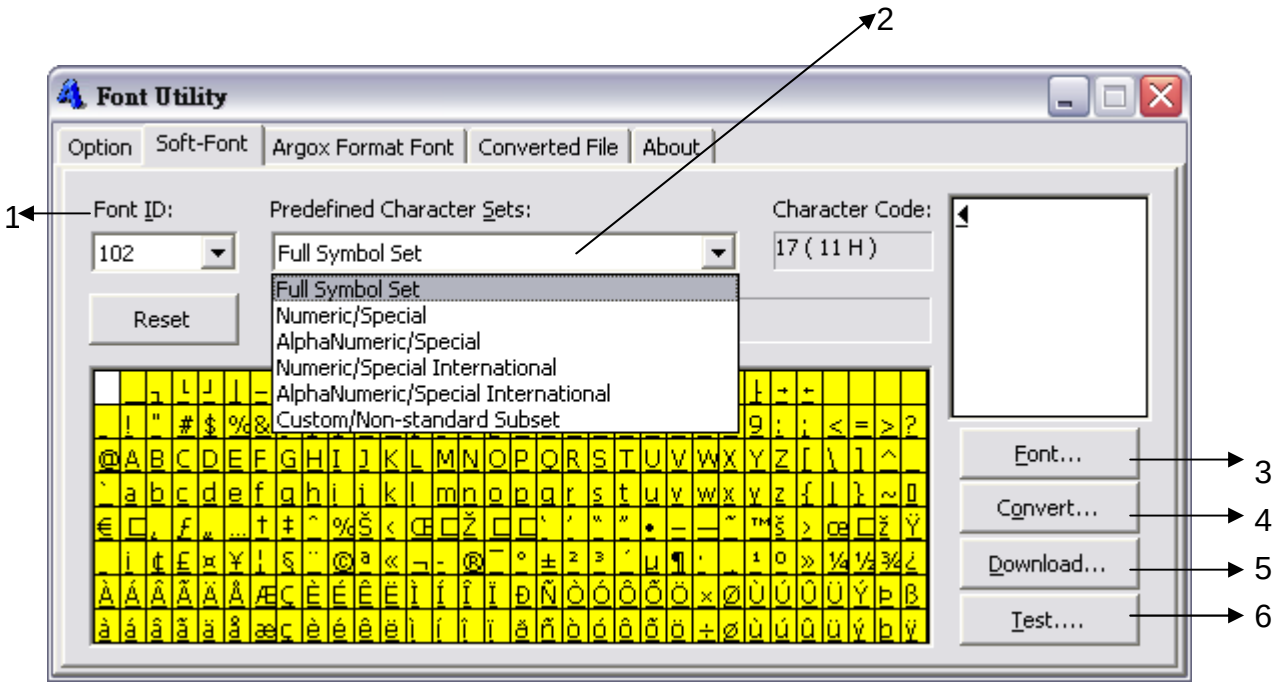
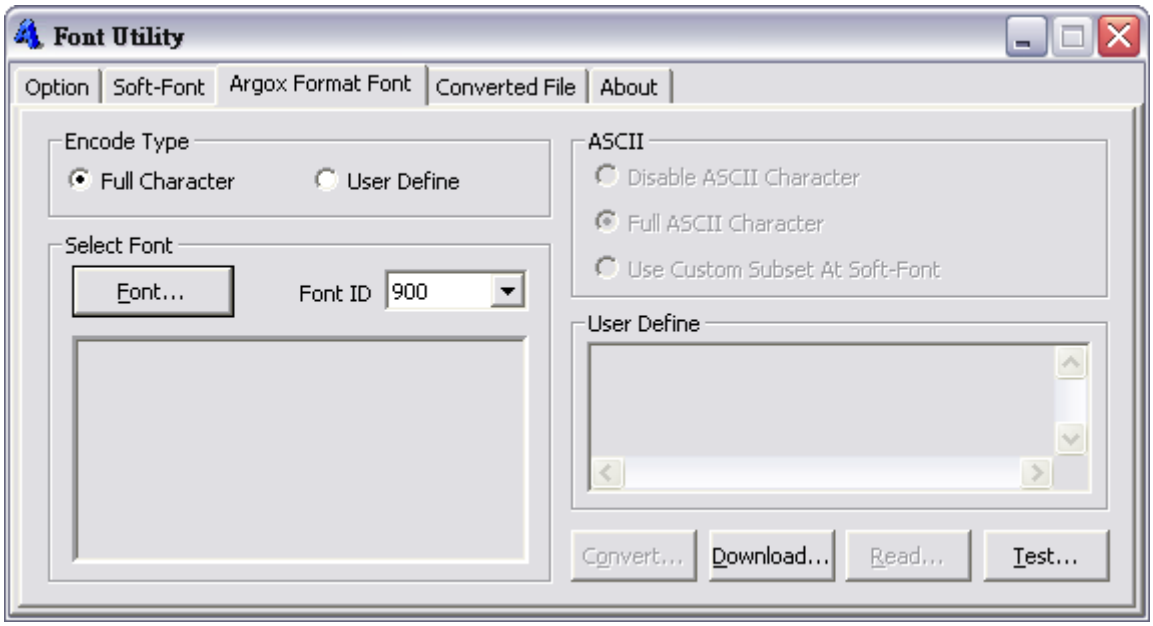
1. **Font ID**: for identifying fonts when programming.
2. **Predefined Character Sets:** user can choose the range they need from this table and the yellow part represents the final characters chosen by user. User can also use mouse's right/left button to delete/add characters.
3. **"Font…":** user can change fonts' size, type and script.
4. **"Convert…"**: this is for user to convert fonts. The converted file can save as another file. In different language; the font will be converted to its own format.
5. **Download…**: download soft-font files.
6. **Test…**: in this part, user can get a test file to test fonts which are saved in printer.



III. Argox Format Font

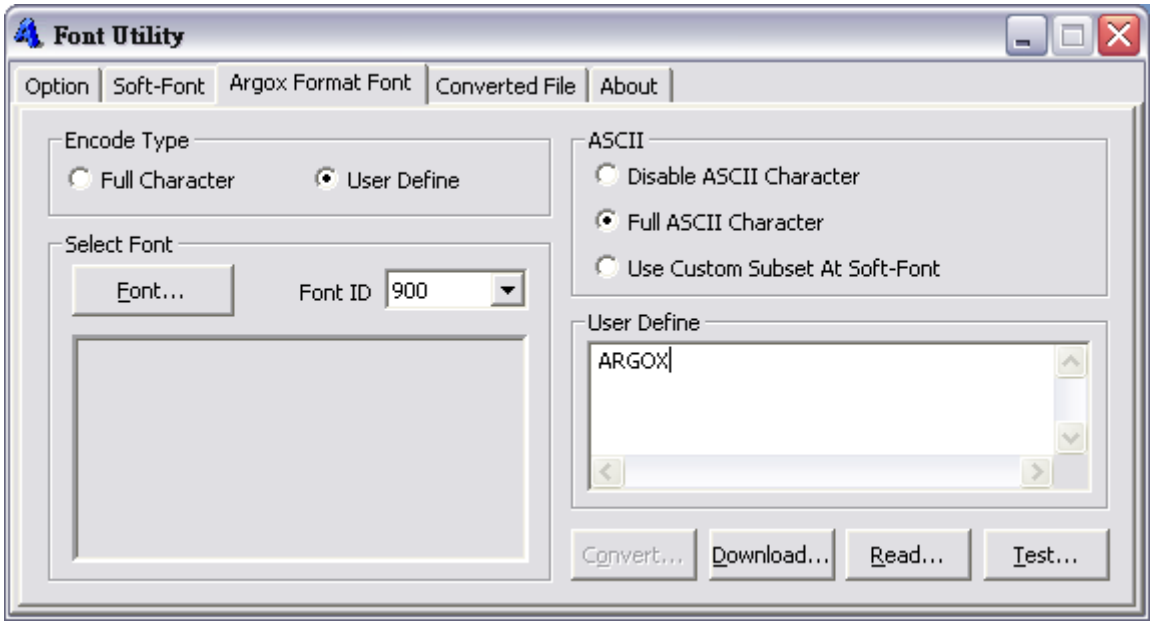
Argox Format Font supports Asia Fonts. There are two ways (Full character and User define) to decide characters range, then to convert Argox Format Font.
It has font format for all language.

1. **Full Character**: this function can convert all characters of scripts, so different scripts have different characters count.

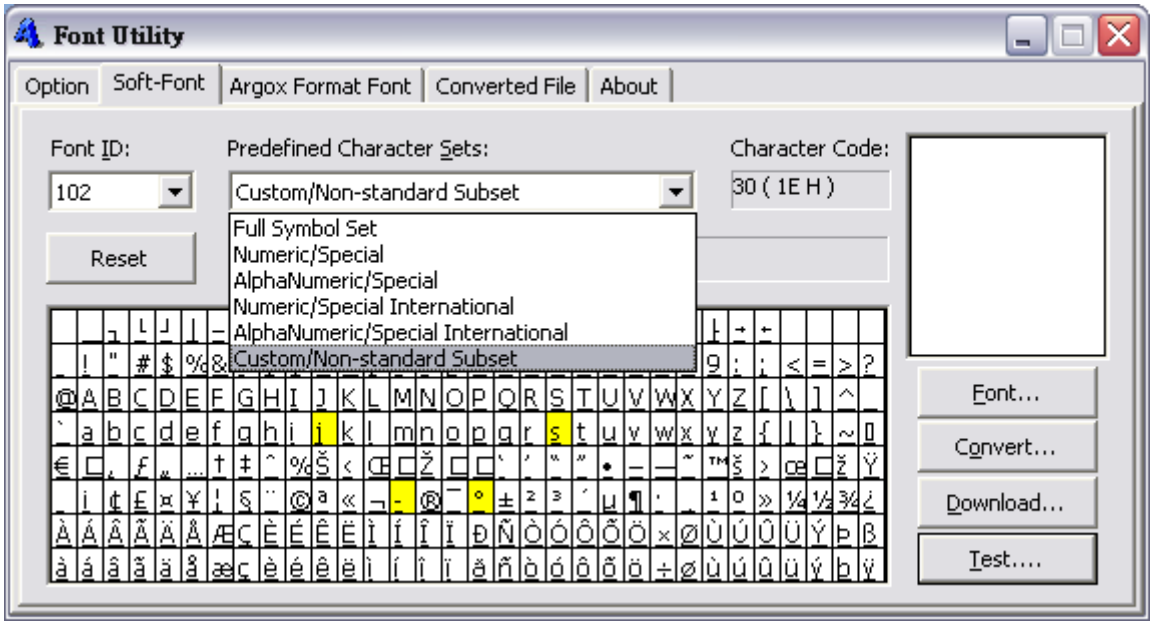


2. **User Define:** all characters of scripts maybe cause memory full. If user downloads all words, but the font's sizes are too large, user can through "User Define" function to define converted characters range that contain both "ASCII" item and "User Define" item to be mixed total characters.

ASCII:
It only decide 0~255 range.
"Disable ASCII Character": the converted files will not include 0~255 characters.
"Full ASCII Character": the converted files will included 0~255 characters.



"Use Custom Subset At Soft-Font": the range reference "Soft-Font"->"Predefined Character Sets"->"Custom/Non-standard Subset" contents. The converted range is chosen by user.



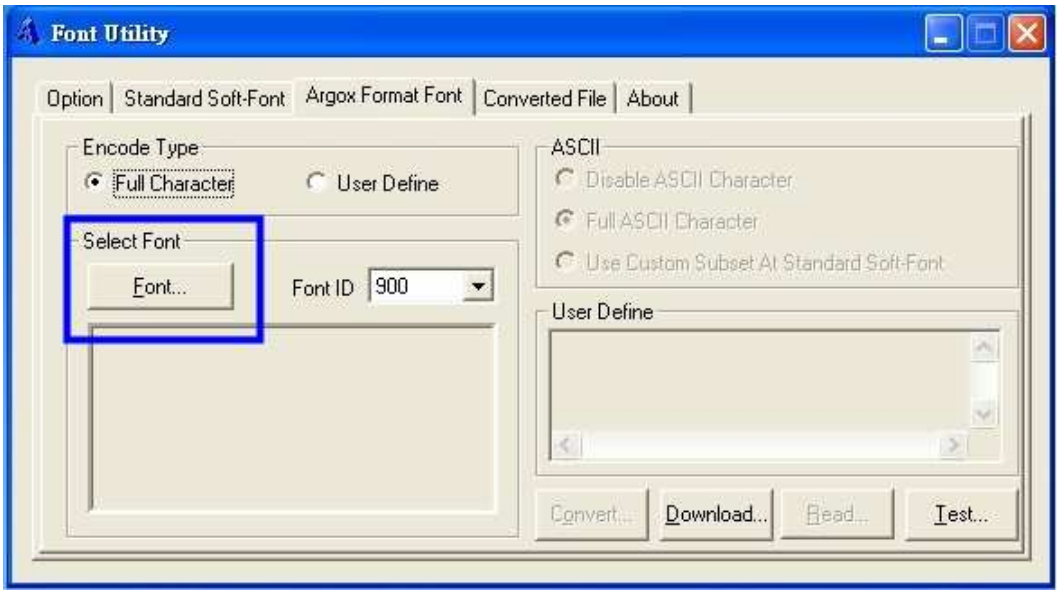
User Define:

It decide 0~65535 range.

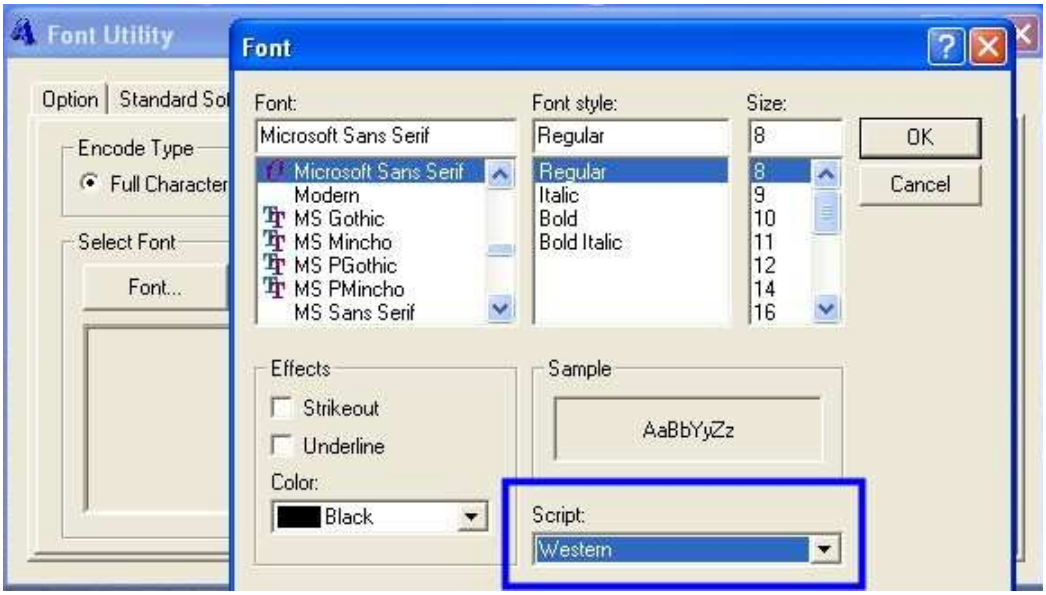
User can input any character or load file context from "Read…" to multi-edit. The context of multi-edit will be converted characters.

IV. Example-Full Character

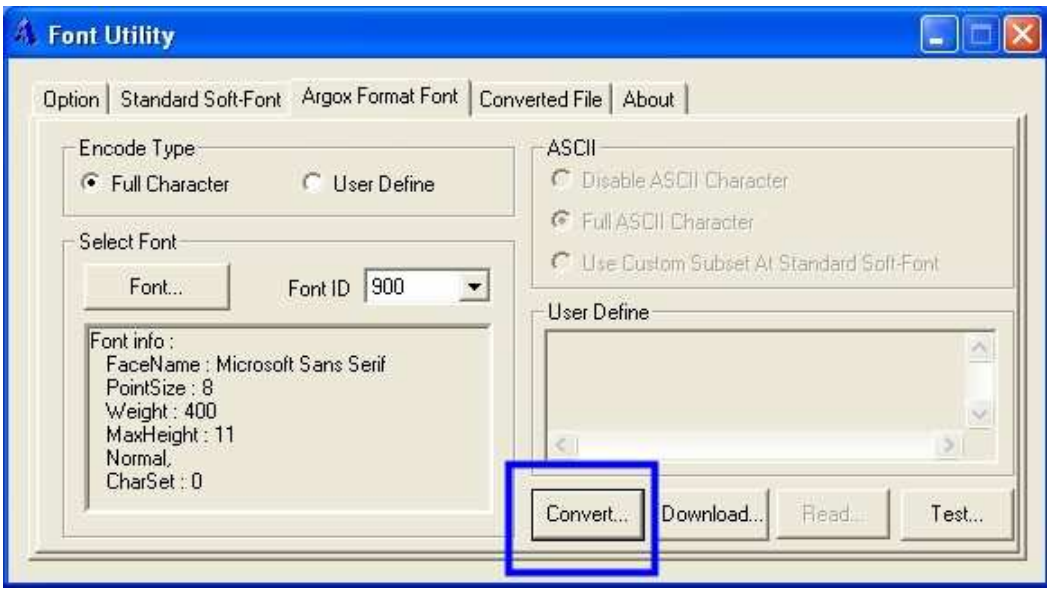
1. Select【Font】



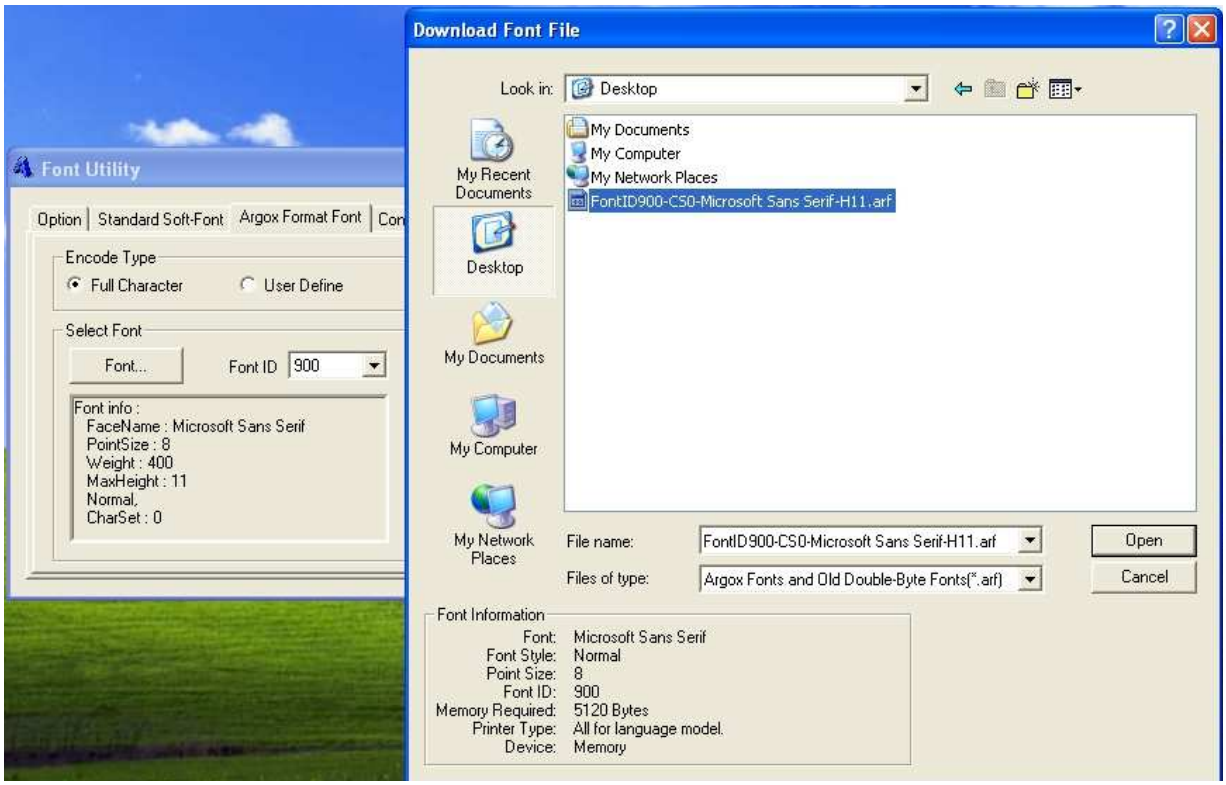
2. Choose language what from【Script】list.



3. Convert the file.



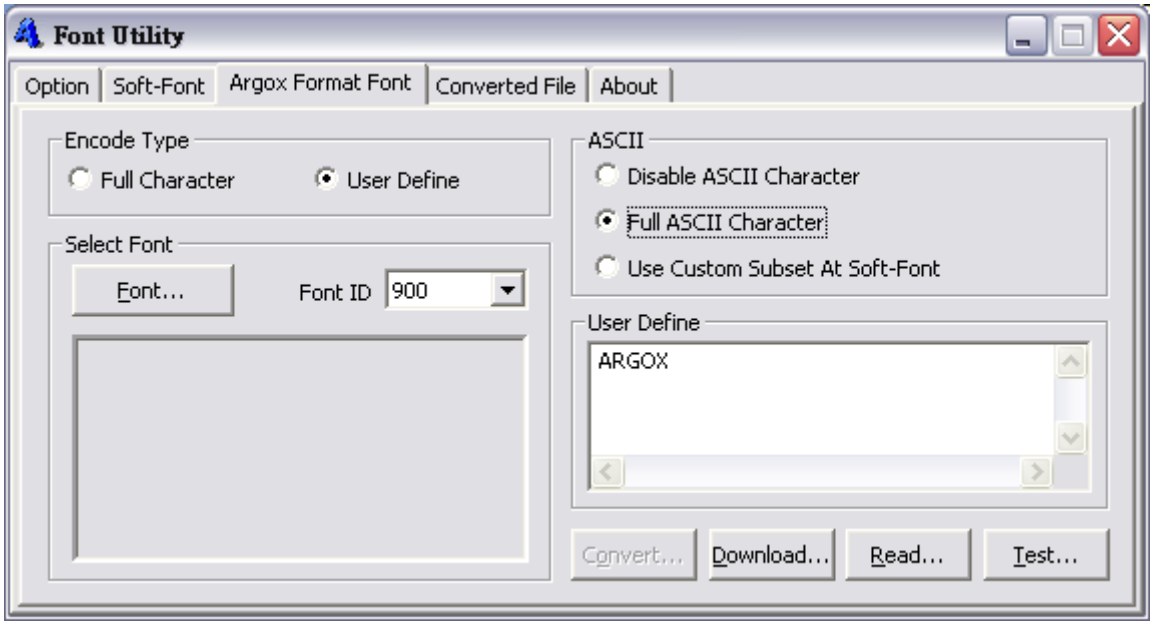
4. Download the converted file finally.



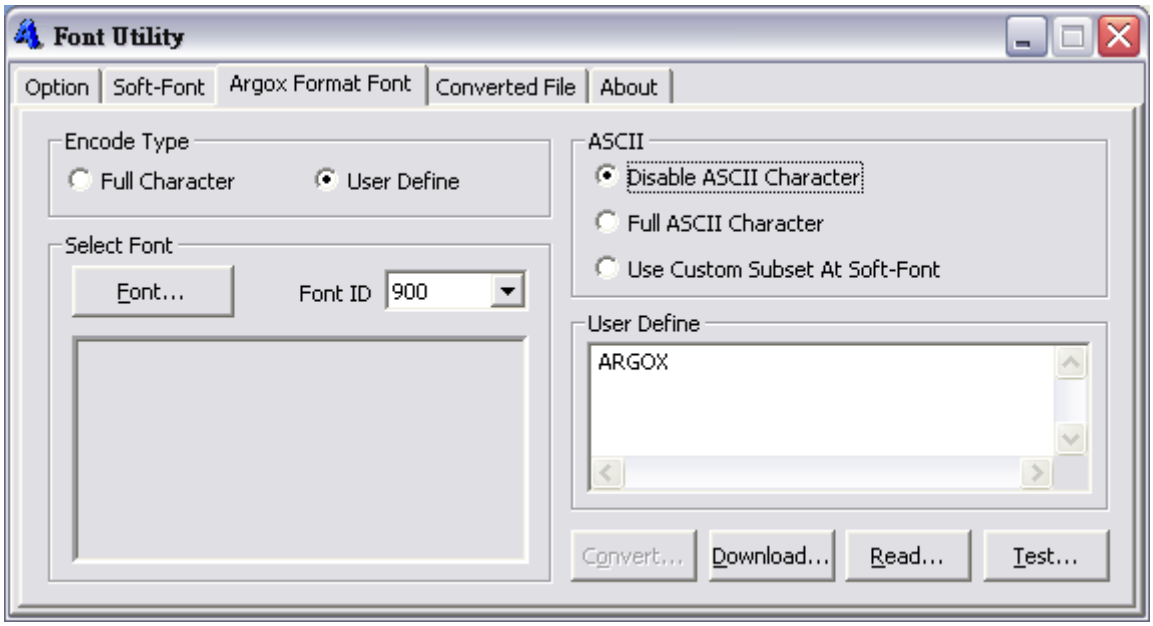
V. Example-User Define

1. **In user define mode**: user can key in or load file context from “Read…” to multi-edit.

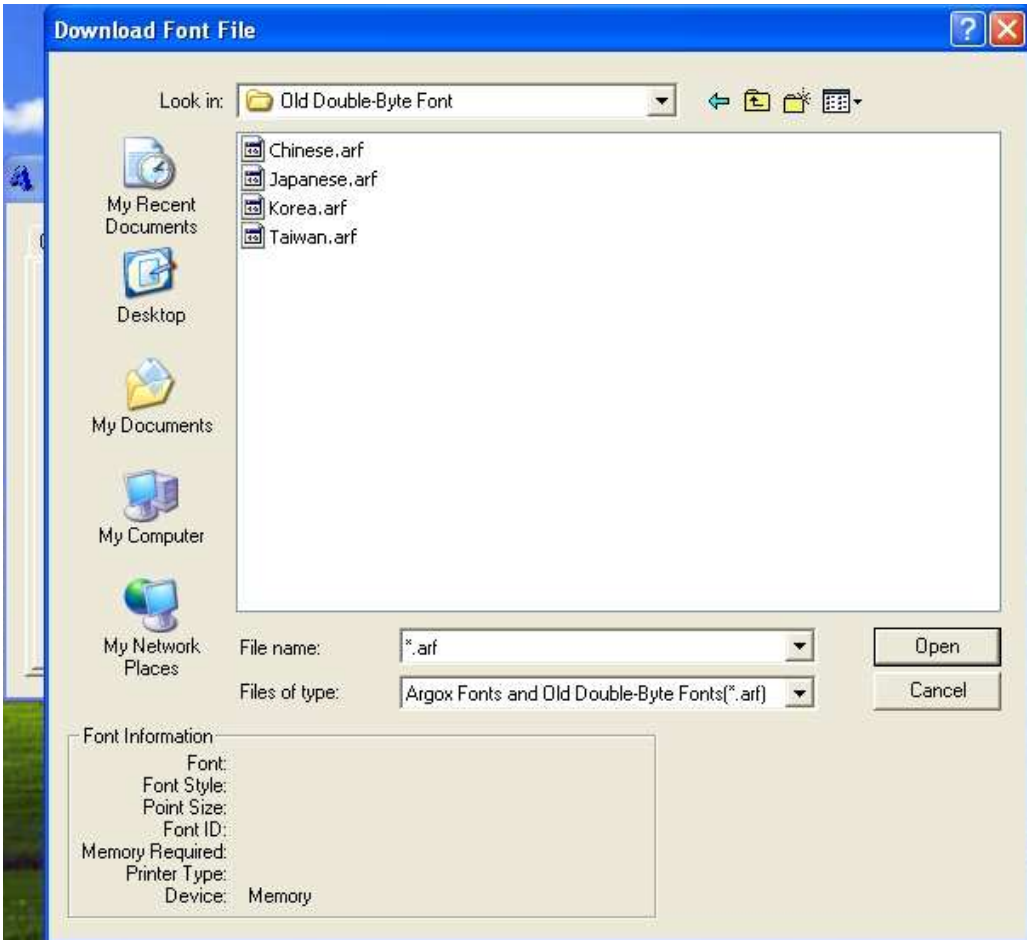
   Take this picture for example; both ASCII characters and “ARGOX” that total 255 words can download into printer.



If user can’t download all character (it can avoid memory full), user can only key in some words just they need, but that will not included ASCII characters. *Take this picture for example, user only download “ARGOX” into printer.*



2. User can download Asia Font (like Font Card or Converted files) by pressing 【Download】button, then choose what Asia Font that you need.



2.4. Bar code

Programming Language	PPLA	PPLB	PPLZ
1 Dimensional Bar Codes	Code 39 UPC-A UPC-E Code 128 subset A/B/C EAN-13 EAN-8 HIBC Codabar Plessey UPC2 UPC5 Code 93 Postnet UCC/EAN Code 128 K-MARK UCC/EAN Code 128 Random Telepen FIM UCC/EAN code 128 Interleave 2 of 5 (Standard/with checksum/with human readable check digit) GS1 Data bar (RSS)	Code 39 UPC-A UPC-E German Postnet Matrx 2 of 5 UPC-Interleaved 2 of 5 Code 39 with check sum digit Code 93 EAN-13 EAN-8 (Standard, 2 /5digit add-on) Codabar Postnet Code128 subset A/B/C Code 128 UCC (shipping container code) Code 128 auto UCC/EAN code 128 (GS1-128) Interleave 2 of 5 Interleaved 2 of 5 with check sum Interleaved 2 of 5 with human readable check digit German Postcode Matrix 2 of 5 UPC Interleaved 2 of 5 EAN-13 2/5 digit add-on UPCA2/5 digit add-on UPCE 2/5 digit add-on GS1 Data bar (RSS)	Code39 UPC-A UPC-E Postnet Code128 subset A/B/C Interleave 2 of 5 Interleaved 2 of 5 with check sun Interleaved 2 of 5 with human readable check digit Code 93 Code 39 with check sun digit EAN-8 Codabar EAN-13 Plessey GS1 Data bar (RSS)
2 Dimensional Bar Codes	MaxiCode PDF417 Data Matrix (ECC 200 only) QR code Composite Codes	MaxiCode PDF417 Data Matrix (ECC 200 only) QR code Composite Codes	MaxiCode PDF417 Data Matrix (ECC 200 only) QR code Composite Codes

2.5. Graphic

Programming Language	PPLA
Graphics	PCX, BMP, IMG, GDI and HEX format files

Programming Language	PPLB
Graphics	PCX , binary raster, BMP and GDI

Programming Language	PPLZ
Graphics	GRF, Hex and GDI

2.6. Electrical and Operating environment

Electrical : 100~240VAC, 50-60 Hz, 5A
Environment : Operating 40 F ° ~ 100°F (4° C ~ 38°C)
Storage -67°F ~ 120°F (-20°C ~ 50°C)
Humidity : 10%~90% (no condensing)

2.7. Physical dimension

Weight : 11kgs (24.6lbs)
Size : W9.8” x H16.0” x D10.2” (W250 x H260 x D410mm)

2.8. Agency list

CE, cTUVus, FCC class A, CCC

2.9. Communication

Parallel interface: Centronics parallel ports

Serial interface: RS-232

USB interface: USB 2.0 Full-Speed

PS/2 keyboard: Standard IBM PC PS/2 keyboard interface

Ethernet interface: 10/100M Ethernet port

2.9.1. Parallel Interface Specification

The serial interface of the X-2300E/X-3200E series printer is standard Centronics port with standard 36-pin connector located at the rear of the printer. A standard parallel cable can be used for the interconnection between the host controller and the label printer.

2.9.2. Serial Interface Specification

Serial interface of X-2300E/X-3200E series printer is a RS-232C port with standard 9-pin (DB9-S) connector located at the rear of the printer.

X-2300E/X-3200E series printer employed “Flow Control” mechanism with either RTS/CTS or X-on/X-off (control characters are DC2 and DC4).

Programmable parameters of the serial interface on the X-2300/X-3200 series printer are as the following:

Speed: 2400, 4800, 9600, 19200, 38400, 57600, 115200 bauds
Parity: Odd, Even or None.
Data Bits: 7 or 8 bits.
Stop Bit(s): 1 or 2 bits.
Factory Default Parameters: 9600 bauds, no parity, 8 data bits, 1 stop bit.

Pin	Signal	Description
1	Data Set Ready, DSR	Shorted to Pin - 6
2	Received Data, RxD	Input. Serial “Received Data”
3	Transmitted Data, TxD	Output. Serial “Transmitted Data”.
4	Data Terminal Ready, DTR	
5	GND	Signal Ground
6	NC	
7	Request to Send, RTS	Output. Used as the control signal for “H/W Flow Control “

8	Clear to Send, CTS	Input. Used as the control signal for “H/W Flow Control”
9	+5V	Output. Pin 9 is reserved for KDU (keyboard device unit)

Table 2.1

Note:

For recommended connection details between host and printer, please refer to Appendix A of the User’s Manual.

2.9.3. USB Interface Specification

Argox X-2300E/X-3200E series label printer provides a standard USB interface which conforms to USB 2.0 full-speed specification. It increases data transfer rate between the host controller and Argox X-2300E/X-3200E series printer and dramatically enhances the performance.

This port complies with USB 2.0 Full-Speed communication.

Pin	Signal	Description
1	VBUS	5V
2	D -	Differential data signaling pair -
3	D +	Differential data signaling pair +
4	GND	Ground

Table 2.2

2.9.4. PS/2 Interface Specification

Argox X-2300E/X-3200E series label printer provides a standard IBM PC PS/2 keyboard interface which allows the user to control the printer with a standard PS/2 keyboard. The scan code set 2 is used and can’t be changed.

For detail information of operation, please refer to the user’s manual.

The PS/2 keyboard interface on the printer side is a female, 6 pins, and mini. DIN connector.

Pin No.	Direction	Description
1	IN/OUT	DATA
2	-----	N.C.
3	-----	GROUND
4	-----	+5V
5	IN/OUT	CLOCK
6	-----	N.C.

Table 2.3

2.9.5. Ethernet Interface Specification

The following port complies with Ethernet communication.

Pin	Signal
1	Transmit+
2	Transmit-
3	Receive+
4	Reserved
5	Reserved
6	Receive-
7	Reserved
8	Reserved

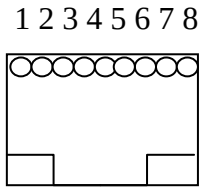


Table 2.4

3. CONTROLS AND INDICATORS

3.1. Front panel

READY indicator

The READY indicator remains ON when the AC power switch is in ON position except the following conditions:

- The printer is at PAUSE state.
- Receiving data from host.
- Out of ribbon, out of media, canceling a print job or printer fault.

MEDIA indicator

The MEDIA indicator will remain ON under normal operation. It will start to blink and indicates the printer is out of media or fail to detect the gap of media.

RIBBON indicator

When the ribbon detection is enabled by using keys with LCD, the RIBBON indicator is ON for the normal operation and the Blinking indicates the printer is out of ribbon.

When the ribbon detection is disabled, the ribbon indicator is OFF and the printer will print without ribbon detection.

LCD display—

16 and 18 characters by 2 rows LCD display are designed to display the printer status; label count left and indicate the error message to the user. It is also used to display the input character from PS/2 keyboard for stand-alone operation. For detail information, please refer to the user's manual.

Note:

When the TPH temperature is too hot, the thermal protection function will be touched. The MEDIA LED blinks and shows "Print Head Heat" on LCD. The printing job will start until the temperature goes down.

FEED/CONFIG. Key

The FEED/CONFIG. key forces the printer to feed one label when printer is idle (not printing) or if in PAUSE state.

Holding down the FEED/CONFIG. Key then turning on the power switch, the printer will perform a self test and a configuration report will be printed.

PAUSE/CALIBR. Key

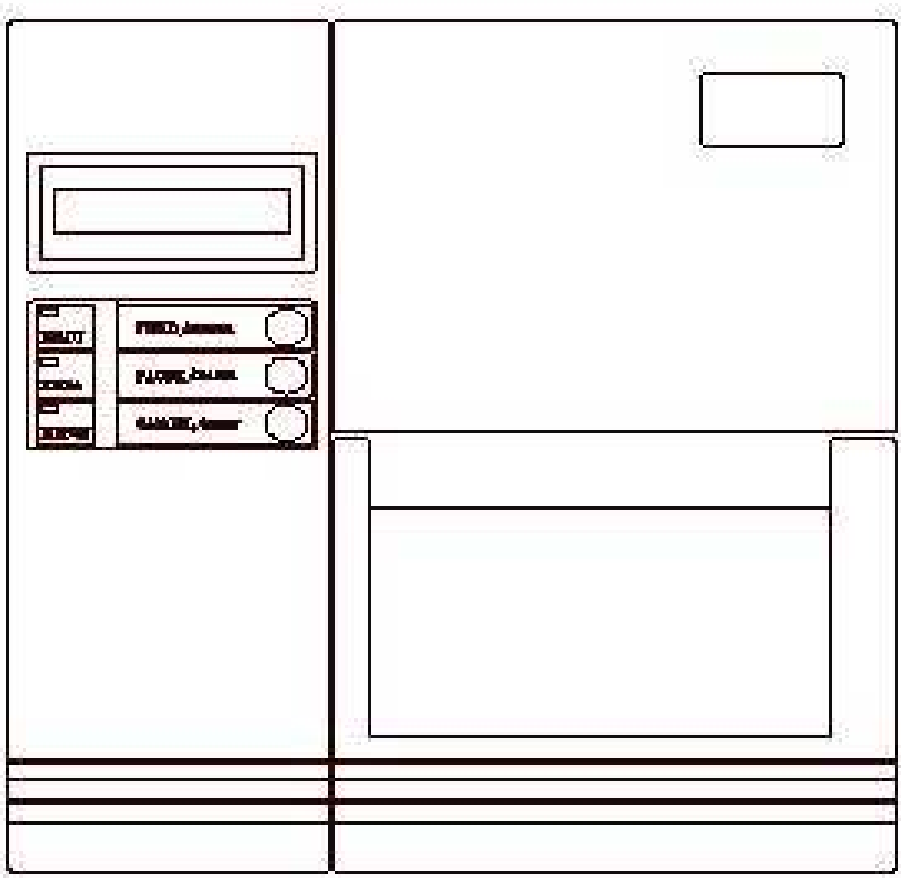
The PAUSE/CALIBR. key stops and restarts the printing process in normal operation. If the PAUSE key is pressed while printing is in progress, the printing stops once current label is completed. Press this key again to restart the printing.

Holding down the PAUSE/CALIBR. Key then turning on the power switch, the printer will perform the media sensor calibration.

CANCEL/RESET Key

The CANCEL/RESET key interrupts and deletes the current printing job. If there is an error indication occurs, pressing this key to cancel the error indication.

Holding down the CANCEL/RESET Key then turning on the power switch, the printer will perform a system reset; all the parameters which are stored in flash will be rest to default value.



Front Panel

There are three buttons, each with two basic functions.

Button	**Function 1** (Press the button)	**Function 2** (Press the button and power switch together)
FEED	Feed a label	Perform self test & print configuration report
PAUSE	• Pause printing • Press again to resume printing	Perform a media calibration
CANCEL	• Interrupt and delete a print task • Force printer to continue after an error is solved.	Reset FLASH settings

Table 3.1

3.2. LCD Setting

LCD Display Language

LCD language:
ENGLISH (default setting), FRENCH, GERMAN, ITALIAN, SPANISH, PORTUGUESE, CHINESE.

To select a language:

1. Press the PAUSE and CANCEL buttons at the same time.
2. Hold both buttons for about 3 seconds and release.
3. The language selection screen appears.

LANGUAGE
ENGLISH

4. Press the FEED button for the next language.
5. Press the CANCEL button to select and set the language.

Press PAUSE or the PAUSE+CANCEL buttons to exit the language selection screen and enter normal standard mode.

Change LCD Setting From Panel

User may change settings using the buttons on the front panel printer models, in addition to changing settings via software commands.

Change settings via buttons on panel:

Buttons	Function
PAUSE+CANCEL	Press to enter setting mode. (Don't press over 1 second) Press again to exit setting mode and return to normal mode.
FEED	Press to show next parameter.
PAUSE	Press to show next setting item.
CANCEL	Selects and saves a parameter to permanent FLASH memory. Unless changed via panel or command the parameter is saved even if you restart the printer.

Table 3.2

Note: Do not change settings during printing or sending printing data.

LCD Function Setting Procedure

The following procedure is an example of setting procedure to direct thermal printing mode:

LCD indicating	LCD setting steps
READY (203,PPLB)	After printer power in on, LCD will indicate as shown at the left.
Step 1 ⇩	Press both PAUSE + CANCEL buttons. Then release the buttons to enter settings.
PRINT MODE THERM. TRANSFER*	LCD will then prompt LCD function selections; default settings include the "*" sign. For example, the first option of print modes is thermal transfer.
Step 2 ⇩	Keep press FEED button until LCD prompts the function setting needed.
PRINT MODE DIRECT THERMAL	For example, the second option of print modes is direct thermal.
Step 3 ⇩	Press CANCEL button to store the setting.
PRINT MODE DIRECT THERMAL *	The option selected will now include the "*" sign.
Step 4 ⇩	Press PAUSE button to continue the other settings.
Back to standard printing mode	After LCD function settings are completed, press both PAUSE + CANCEL and then release them to exit from

	settings.
READY (203,PPLB)	Now printer is in normal printing mode.

Table 3.3

LCD Function Settings and Parameters

Item	Range	Factory Default	Remarks
PRINT MODE	DIRECT THERMAL/ THERM.TRANSFER	THERM. TRANSFER	
AUTO-CAL. MODE	MODE 1 MODE 2 MODE 3 MODE 4	MODE 1	Mode 1: Printer performs Auto Calibration after printing the first label, if label height differs from parameters in printer's flash. Mode 2: Printer performs Auto calibration when print head is closed. Mode 3: Printer finds the first label gap when print head is closed. Mode 4: Mode 1/2/3 all disabled. Manual calibration is needed.
CONTROL CODE SET	STANDARD ALTERNATIVE 1 ALTERNATIVE 2 ALTERNATIVE 3	STANDARD	Available only in PPLA printer language.
CUT PEEL OFFSET	-15 ~ 50 mm	0 mm	To adjust cut and peel positions.
PRINT OFFSET	-8 ~ 15 mm	0 mm	Controls vertical print positions.
TPH VER OFFSET	-9~9 mm (PPLA/PPLB) -3~3 mm (PPLZ)	0 mm	To adjust offset of vertical print position.
RECOVER PRINT	ENABLE, DISABLE	DISABLE	Will not reprint after recovering from media-out or ribbon-out errors.
CUTTER INSTALLED	NO YES	NO	If “YES: is selected, printer will then enter CUTTER TYPE and CUT MODE settings.
CUTTER TYPE	ROTARY-NORMAL ROTARY-REVERSE	ROTARY- NORMAL	Available only when CUTTER INSTALLED is set to “YES”.

	GUILLOTINE-FULL GUILLOTINE-PART		ROTARY-REVERSE is to recover from paper jam in cutter mode.
CUT MODE	NORMAL CUTTER W/O BACK	NORMAL	Available only when CUTTER INSTALLED is set to “YES”.
PEELER INSTALLED	NO YES	NO	
READER INSTALLED	NO YES	NO	Available only in PPLB printer language.
WIN. CON. LEN.	0 ~ 254 mm	0 mm	Available only in Windows with bundled printer driver and for continuous media.
BASE SPEED(IPS)	0 ~ 4 IPS	0 IPS	Available only in PPLA and PPLB printer languages.
COUNTING	DOWN UP	DOWN	
MEDIA SENSER TYPE	REFLECTIVE SEE-THROUGH	SEE-THROUGH	To select for different media types. After changing sensor setting, make sure to calibrate before printing.
BACK FEED	DISABLE ENABLE	DISABLE	Available only in PPLA and PPLB printer languages. Once “ENABLE” is selected, printer enters BACK DISTANCE setting.
BACK DISTANCE	10~40 mm	21 mm	Available only when BACK FEED is enabled.
BASE DARKNESS	0~99 (PPLA) -28~28 (PPLB)	0	Available only in PPLA and PPLB printer languages.
ABS. DARKNESS	0~30	0	To select darkness. Available only in PPLZ printer language.
TRIM. DARKNESS	-30~30	0	To fine-tune darkness. Available only in PPLZ printer language.
BAUD RATE (RS232)	600 / 1200 / 2400/ 4800 / 9600 / 19200 / 38400 / 57600 / 115200	9600	Should be as same as setting of host.
PARITY (RS232)	NONE EVEN ODD	NONE	Should be as same as setting of host.
LENGTH	8 DATA BITS	8 DATA BITS	Should be as same as setting of

(RS232)	7 DATA BITS		host.
CLEAR FLASH	NO YES	NO	When “YES” is selected, all the label forms, soft fonts, and graphics stored will be deleted.

Table 3.4

Ethernet Setting and Parameters

	LCD Function Display	Function Options	Description
1	DHCP	DISABLE	If printer is not connected to a router, with DHCP disabled, settings of IP ADDRESS, SUBNET MASK, and DEFAULT GATEWAY settings will be available on LCD. If DISABLE is changed to be ENABLE, LCD will prompt “ETHERNET CARD UPDATE FINISH…” Then please reboot the printer.
		ENABLE	If printer has been connected to a router, IP address will be assigned automatically by DHCP server after power on. If ENABLE is changed to be DISABLE, and then again set back as ENABLE, LCD will prompt “ETHERNET CARD UPDATE FINISH…” Then please reboot the printer.
2	IP ADDRESS	xxx.xxx.xxx.xxx	xxx range:0~255 When DHCP is disabled, default IP address is 192.168.1.100. If “_” sign appears, it means that the DHCP setting is disabled. If not, DHCP setting is enabled. 1. FEED/CONFIG. : change contents. (i.e. from 000.000.000.000 to 255.255.255.255) 2. PAUSE/CALIBR. : shift “_”sign position. (i.e. from 255.255.255.255 to
3	SUBNET MASK	xxx.xxx.xxx.xxx	
4	DEFAULT GATEWAY	xxx.xxx.xxx.xxx	

			255.255.255.255) 3. CANCEL/RESET.: view next function option. ("_" sign must be on the third word, for example, xxx). 4. To change IP ADDRESS or SUBNET MASK, enter DEFAULT GATEWAY setting, press CANCEL button once; LCD will prompt "ETHERNET CARD UPDATE FINISH…" 5. Restart the printer. *Note: All settings are valid, if IP ADDRESS, SUBNET MASK and DEFAULT GATEWAY settings are complete and printer is restarted.*
5	MAC ADDRESS	yyyy-yyyy-yyyy	yyyy range:0000~FFFF

Table 3.5

3.2. Rear panel

PS/2 keyboard connector

For PS/2 standard keyboard connect.

RS232 connector (serial port)

Connector for serial port applications and, usually, it is connected to the COM port of a PC.

USB connector

For USB port connection. Mostly it is connected to the USB port of a PC.

CENTRONICS connector

For parallel port connect. Mostly it is connected to the printer port of a PC.

Ethernet port (RJ-45)

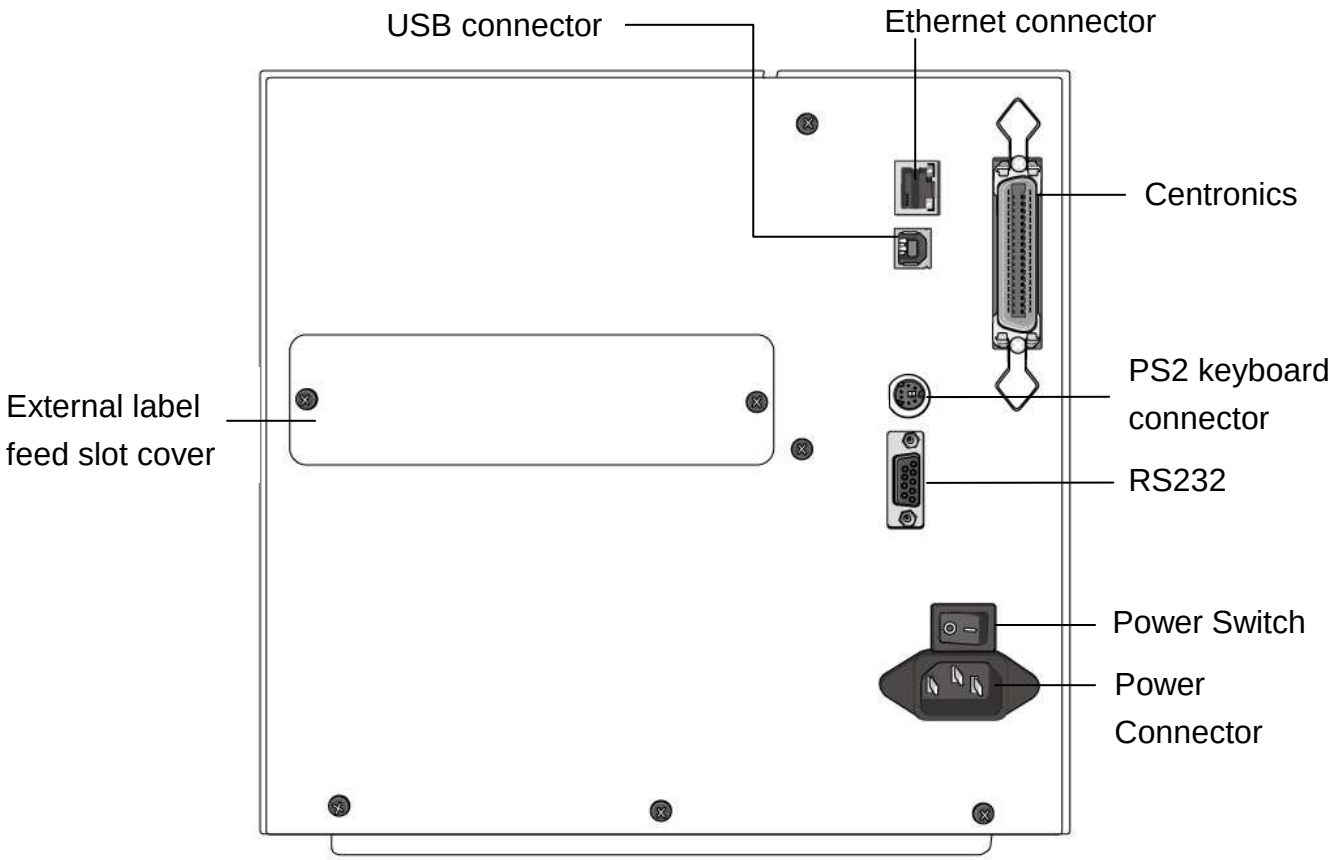
This connector is for Ethernet Card application; it is convenient to use several printers by Ethernet network at the same time.

Power switch

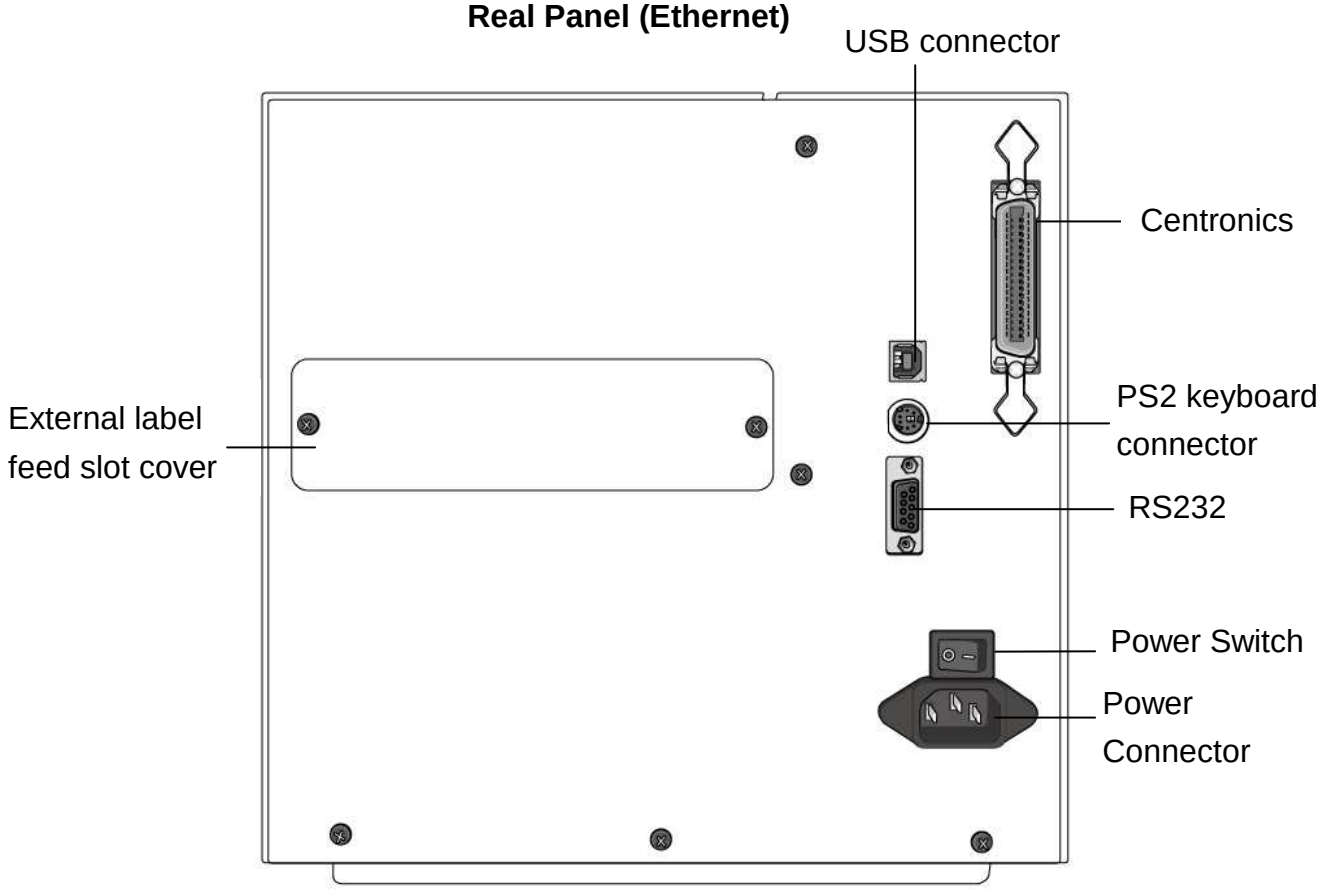
Controls application of AC power to printer. Turning the printer ON while holding down certain front panel key will cause the printer to perform the self test, calibration or system reset. The power should be turned OFF to connect or disconnect any internal cable.

AC power socket

For AC power connection.



Real Panel (Ethernet)



Real Panel

4. OPTIONS

4.1. Cutter mechanism

Optional cutter is for cutting labels or tickets. Back feed or without back feed is included for cutting. There are two cutters for user to choose. Please refer to the Table2.4.

Cutter	Thickness	Remark
A2+ Rotary Cutter (regular)	0.06mm~0.20mm	
Guillotine Cutter	0.06mm~0.12mm	The label for cutting is suggested to be at least 20mm in height.

Table 4.1

4.2. Dispenser and Rewinder

Dispenser and rewinder provides the automatic peel-off and backing paper take-up function.

4.3. Super (Add-on) Card

Super card can be used as add-on card to recover the printer in crashed condition.

4.4. External Media Stacker

External media stacker provides 8” OD label.

4.5. Argokee

ArgoKee provides “standard alone operation” function.

5. SETUP and DIAGNOSITC

5.1. Inlet power voltage and grounding

TheX-2300E/X-3200E series printer is designed for both 110VAC and 220VAC outlet. The line voltage should not lower than 110 VAC or higher than 240 VAC and the printer should be connected to a properly grounded receptacle.

5.2. Perform the self test

Once the printer is first installed, a self test should be performing. To perform the self test, please follow the procedure:

- Turn off the power
- Load the media and ribbon properly
- Press and hold the FEED key then turn on the power.
- Release the FEED key after the printer starts to print. The message “Self Test…” should be displayed on the LCD display if it is installed.
- The configuration report should be printed out as Figure 5.1.
- To return the printer to normal operation, please turn the power OFF and ON again or press the CANCEL key for one second, otherwise the printer will enter dump mode, all input data will not be interpreted.

Contents and Information of X-3200 “PPLB Self Test Label” are as the following:

1. **Version Information**

   This includes firmware version and date information.

2. **Standard RAM Size**

   This message shows standard RAM size in the printer.

3. **Available RAM Size**

   This message shows available memory can be used to hold the downloadable graphics, forms and soft fonts.

4. **Flash Type**

   This message shows what flash type in printer.

5. Available Flash Size

This message shows available flash can be used to hold the downloadable graphics, forms and soft fonts.

6. Font Symbol Set

This message shows symbol set for font.

7. Print Mode

It is either TT (Thermal Transfer with ribbon) mode or DT (Direct Thermal without ribbon) mode.

8. Sensor type

This message shows the sensor type such as reflective sensor.

9. Label-less Calibration Value

Used to check the printer perform label-less calibration or not. If not, Ref. should be 2000 and See. should be 8500.

10. No. of DL Soft Fonts

This message shows the numbers of soft fonts downloaded in printer.

11. RTC Time

This message shows time that RTC records.

12. Int. fonts

This message shows what kind of Asia font downloaded in printer.

13. Cut Count

The message will show how many labels the printer cuts off.

14. Print Length Meter

It keeps the length printed in meters. With this, you may check the print head warranty. The value will not be reset even you replace the TPH or any components.

15. RS232 Protocols

It contains data frame of RS-232 interface: baud rate, parity, data bit, and stop bit.

16. Check Sum

Used to check the firmware flash is correct or not. It should be 0000.

17. Speed/Darkness

Printer speed/darkness setting.

18. Media Type

The message shows media type of this printer.

19. Print Width

The message shows print width in printer.

20. Label Length

The message shows label length in printer.

21. Backfeed Disable/Enable

This message shows backfeed disable/enable when printing.

22. Cutter Disable/Enable

This message shows backfeed disable/enable during cutter is enabling.

23. Peeler Disable/Enable

This message shows backfeed disable/enable during peeler is enabling.

24. Cutter/Peeler Offset value

This will show cutter/peeler offset information.

25. R(X,Y)=

This message shows X and Y coordinates of the origin point.

26. H. position adjust

This message shows horizontal offset about location of printing.

27. Calibration Type Mode

There are four calibration type modes; in this message you can get what mode is used.

28. DIP switch

Sw2	ON	OFF
1	No use	No use
2	DT mode	Normal
3	Factory test	Normal
4	No use	No use
5	Add on card	Normal

29. Font Image

Used to check Internal Fonts are correct or not.

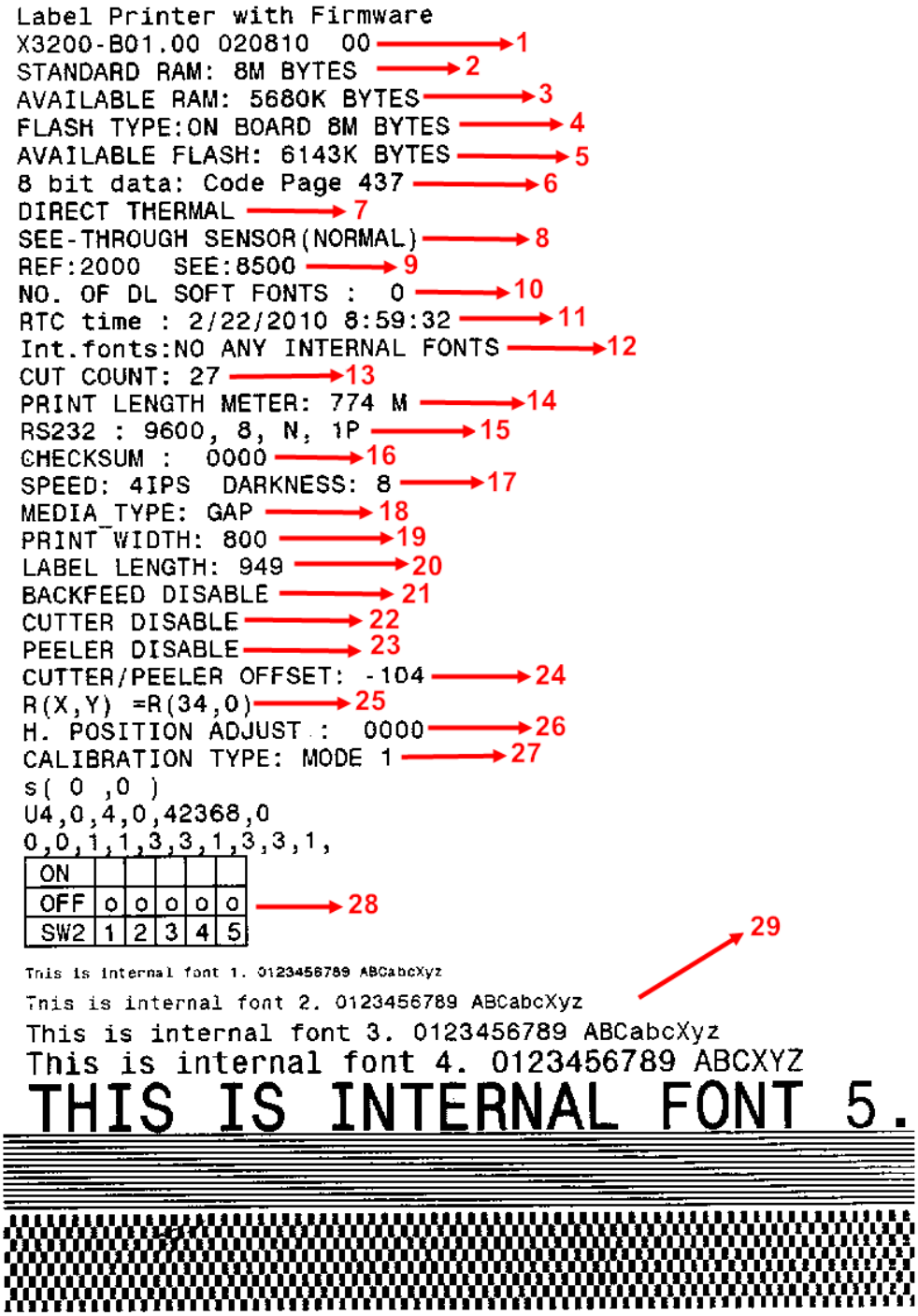

Label Printer with Firmware
X3200-B01.00 020810 00
1
STANDARD RAM: 8M BYTES
2
AVAILABLE RAM: 5680K BYTES
3
FLASH TYPE:ON BOARD 8M BYTES
4
AVAILABLE FLASH: 6143K BYTES
5
8 bit data: Code Page 437
6
DIRECT THERMAL
7
SEE-THROUGH SENSOR(NORMAL)
8
REF:2000 SEE:8500
9
NO. OF DL SOFT FONTS : 0
10
RTC time : 2/22/2010 8:59:32
11
Int.fonts:NO ANY INTERNAL FONTS
12
CUT COUNT: 27
13
PRINT LENGTH METER: 774 M
14
RS232 : 9600, 8, N, 1P
15
CHECKSUM : 0000
16
SPEED: 4IPS DARKNESS: 8
17
MEDIA_TYPE: GAP
18
PRINT WIDTH: 800
19
LABEL LENGTH: 949
20
BACKFEED DISABLE
21
CUTTER DISABLE
22
PEELER DISABLE
23
CUTTER/PEELER OFFSET: -104
24
R(X,Y) =R(34,0)
25
H. POSITION ADJUST : 0000
26
CALIBRATION TYPE: MODE 1
27
s(0 ,0)
U4,0,4,0,42368,0
0,0,1,1,3,3,1,3,3,1,
ON
OFF o o o o o
SW2 1 2 3 4 5
28
29
This is internal font 1. 0123456789 ABCabcXyz
This is internal font 2. 0123456789 ABCabcXyz
This is internal font 3. 0123456789 ABCabcXyz
This is internal font 4. 0123456789 ABCXYZ
THIS IS INTERNAL FONT 5.

Figure 5.1

5.3. Perform the curves

Once the printer cannot detect the labels correctly, the curves information should be performed. To perform the curves, please follow the procedure:

- Perform the self test. *(Please see 5.2 Perform the self test)*
- Release the FEED key until printer starts to print out curves.
- The curves report should be printed as Figure 5.2.

. Contents and Information of X-2300E “PPLB Curves” are as the following:

1. Ribbon profile

This curve can check the ribbon sensor is normal or not.

2. See-through-1 profile

This curve can check the movable see-through sensor is normal or not.

3. Reflective profile

This curve can judge media sensor can detect gap correctly or not.

4. TPH resistance profile

This message shows how many bad dots the printer has.

5. Need to enter peeler mode?

After printing curves, you can choose the printer enter peeler mode.

The command <ESC>KIE can only print out the values of sensors and TPH profile.

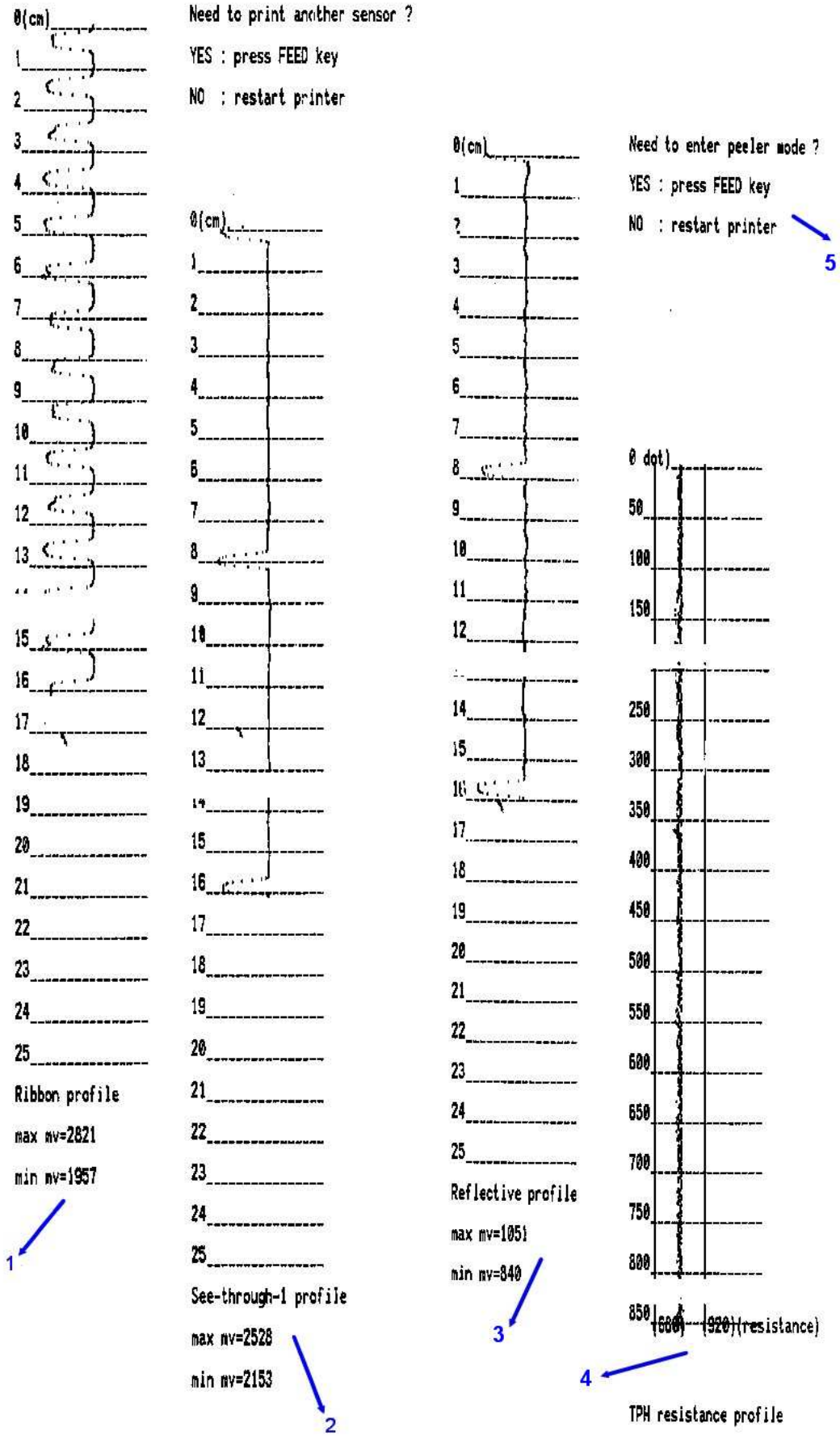

0(cm)
1
2
3
4
5
6
7
8
9
10
11
12
13
15
16
17
18
19
20
21
22
23
24
25
Ribbon profile
max mv=2821
min mv=1957
1
Need to print another sensor ?
YES : press FEED key
NO : restart printer
0(cm)
1
2
3
4
5
6
7
8
9
10
11
12
13
15
16
17
18
19
20
21
22
23
24
25
See-through-1 profile
max mv=2528
min mv=2153
2
0(cm)
1
2
3
4
5
6
7
8
9
10
11
12
14
15
16
17
18
19
20
21
22
23
24
25
Reflective profile
max mv=1051
min mv=840
3
Need to enter peeler mode ?
YES : press FEED key
NO : restart printer
5
0 dot)
50
100
150
250
300
350
400
450
500
550
600
650
700
750
800
850
(680) (920)(resistance)
4
TPH resistance profile

Figure 5.2

5.4. Printer reset

Some parameters of the printer can be reset to the factory default value.

1. Turn off the printer.
2. Press and hold the **CANCEL/RESET** key then turn on the printer.
   Release the **CANCAL/RESET** key when the message "**RESET**" is displayed on the LCD and READY indicator blinks.

When the reset procedure is completed, "**READY**" message will be displayed on the LCD and **READY** indicator will stop blinking.

The following parameters will be reset to the default value:

- Label parameters
- Printing darkness
- Printing speed
- Symbol set (language)
- Others for specific emulation

6. CALIBRATION AND ADJUSTMENTS

6.1. Media sensor position adjustment

The media sensor senses either the gap between labels or a hole or notch in the media to determine the position and length of the label or ticket stock. When using label with gap, user can position the sensor anywhere inside the gap. But when using media with notch or hole, it may be necessary to reposition the media sensor.

1. Open the side cover.
2. Release the Print head latch.
3. Loading the media properly.
4. Adjust the sensor by moving the media sensor adjustment lever left or right (look through the front of the print) checking if the media sensor position mark (Figure 6.1) is located on the top of the notch or hole of the media.
5. Closing the Print head latch.
6. Closing the side cover.

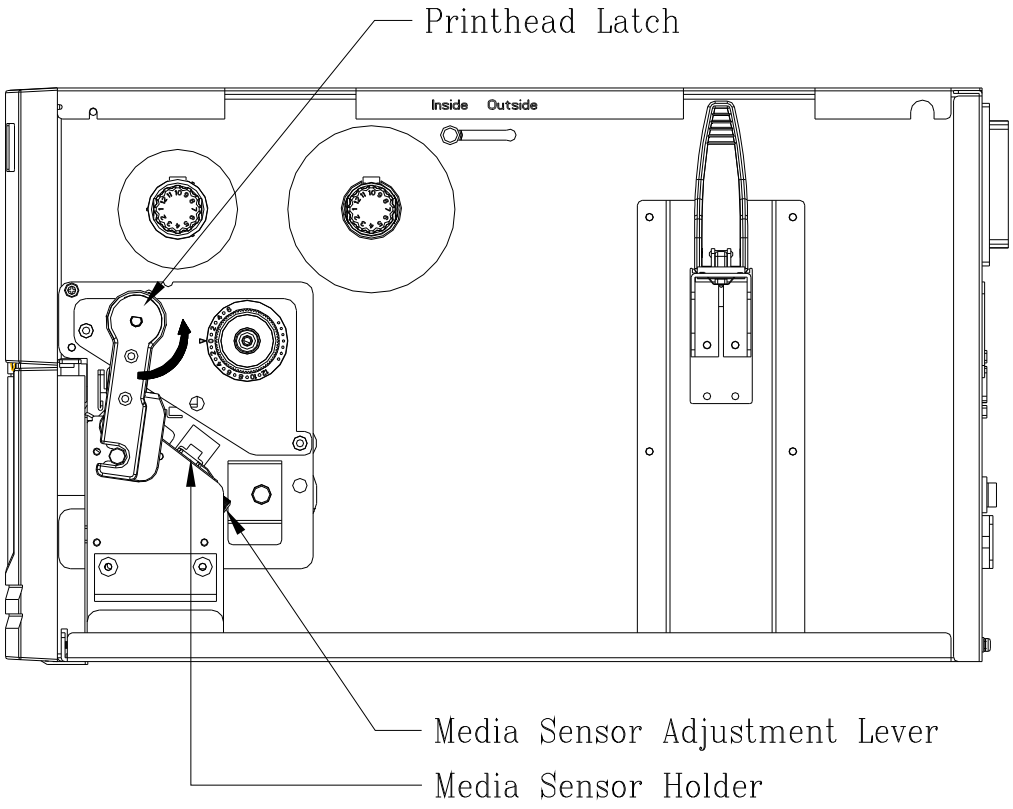


Figure 6.0

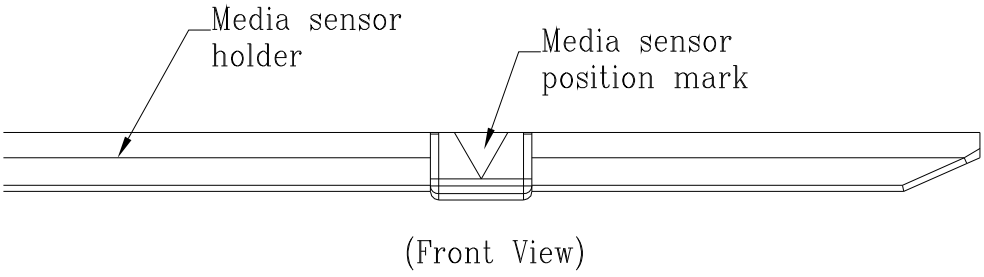


Figure 6.1

6.2.Media sensor calibration

After the first time of installation, the print media is changed or the media sensor board is replaced, the media sensor calibration must be performed.

1. Loading the media (and ribbon for thermal transfer printing) properly.
2. Moving the media sensor to proper position.
3. Press and hold down the PAUSE key then turn on the power switch.

During the media calibration, 8 inches of media will be fed out. The READY and MEDIA indicators will be blinking for few seconds during calibration is proceeding then turn ON again after the calibration is completed. Without the proper calibration, the gap detection will not stable especially for the small labels (less than 1.4 inches in height).
After the calibration, all the related parameters will be stored in the FLASH which is located on Main board.

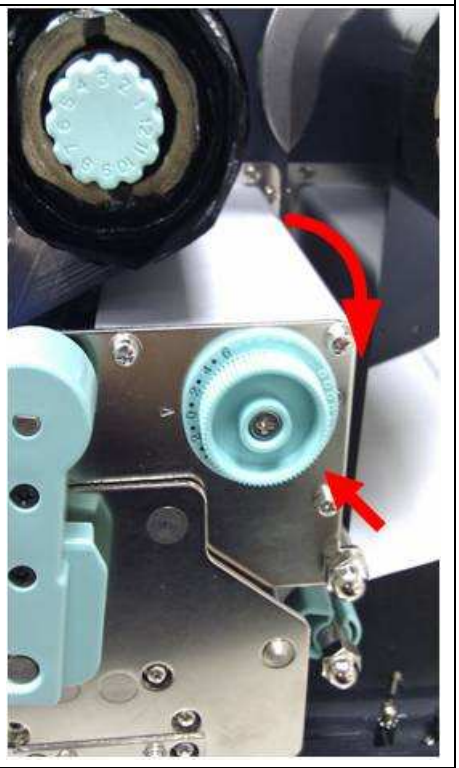
Note:
After the first time of installation or the media type is changed, this procedure must be carried out. Failure to do it, the media-empty and media-gap detection might be incorrect.

6.3. Print head pressure adjustment

Printing quality can be fine adjusted based on which area on the label the printing quality discrepancy is located.

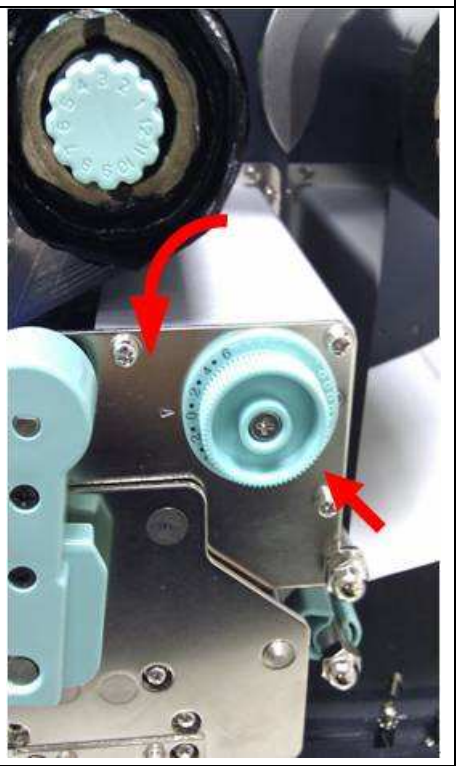
A. Right Hand Side Enhancement

If the phenomena as shown in Fig. 1 been observed, please turn the Fine Adjustment Knob clockwise slightly then try printing again to justify the printing quality improvement as shown in Fig.2. Repeat the same process until the printing quality is well balanced on both ends of the label.

Figure 1	Figure 2
	

B. Left Hand Side Enhancement

If the phenomena as shown in Fig. 3 been observed, please turn the Fine Adjustment Knob counter-clockwise slightly then try printing again to justify the printing quality improvement as shown in Fig.4. Repeat the same process until the printing quality is well balanced on both ends of the label.

Figure 3	Figure 4
	

Once the desired quality has been reached, please make note on the new setting of the Fine Adjustment Knob and the type number of ribbon been used in this printing task for future reference.

[Remark]:
Please note, as shown in Fig. 2 and Fig. 4, the Fine Adjustment Knob is set to “ 0 “ as default setting when shipped from Argox factory.

6.4. Print head print line adjustment

When the label only exhibits locally inferior printing quality and the ribbon is not wrinkled, the position of the print head shall be adjusted, and the adjusting position is shown as Fig. 1. The viewing direction is facing the machine, and using hex socket screw driver for the adjustment.

The adjusting portions for two hex socket screw locks marked in Fig. 1 are shown in Fig. 2 and Fig. 3. When the right side of the label exhibits inferior printing quality, as shown in Fig. 2, the screw at the right side shall be adjusted. When the left side of the label exhibits inferior printing quality, as shown in Fig. 3, the screw at the left side shall be adjusted. The adjusting steps are as follows:

1. Clockwise rotate the screw a half circle and test printing; observe whether the printing quality has been gradually improved or not; and stop the adjustment if the quality is improved.
2. Repeat Step 1; if the printing quality has not been gradually improved after five times, counterclockwise rotate five circles back to the original position and then proceed Step 3.
3. Counter-clockwise rotate the screw a half circle and test printing; observe whether the printing quality has been gradually improved or not; and stop the adjustment if the quality is improved.

Figure 1

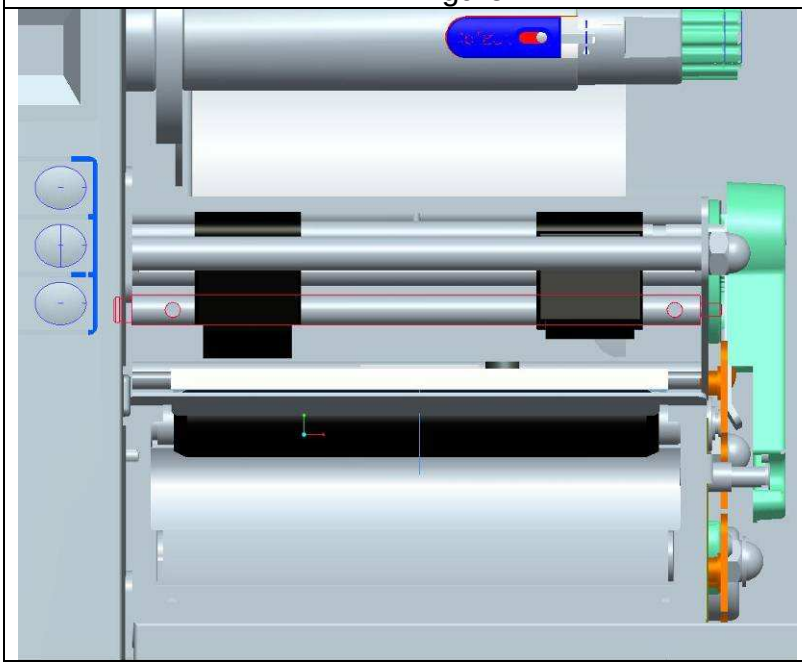


Figure 2	Figure 3
	

6.5. Ribbon tension adjustment

Both ribbon supply spindle and ribbon pickup spindle are equipped with control knobs to adjust ribbon tension. The control knobs can rotate to both directions. Rotate the control knob clockwise to increase ribbon tension; rotate it counter-clockwise to reduce ribbon tension.

If the ribbon is wrinkled at ribbon supply, rotate clockwise control knob of ribbon supply, to increase ribbon tension at ribbon supply and further improve ribbon wrinkle. However, please be noted, too much tension at ribbon supply may result in ribbon not moving smoothly. Once it happens, rotate counter-clockwise control knob of ribbon supply, to increase ribbon tension to balance the tension.

If the ribbon is wrinkled at ribbon pickup, rotate counter-clockwise control knob of ribbon pickup, to decrease ribbon tension at ribbon pickup and further improve ribbon wrinkle. If the tension is too little at ribbon pickup, ribbon will not move smoothly, and needs control knob to rotate clockwise to increase tension.

[Remark]:
The ribbon shaft has its user-friendly feature to allow users to adjust the tension of ribbon shaft by rotating the knob. User can reset to factory default tension by adjusting the ribbon shaft while the black line was aligned to the marked arrows. The default setting when shipped from Argox factory is shown as Figure 2 – the two arrows are in line with the black line.

Figure 1

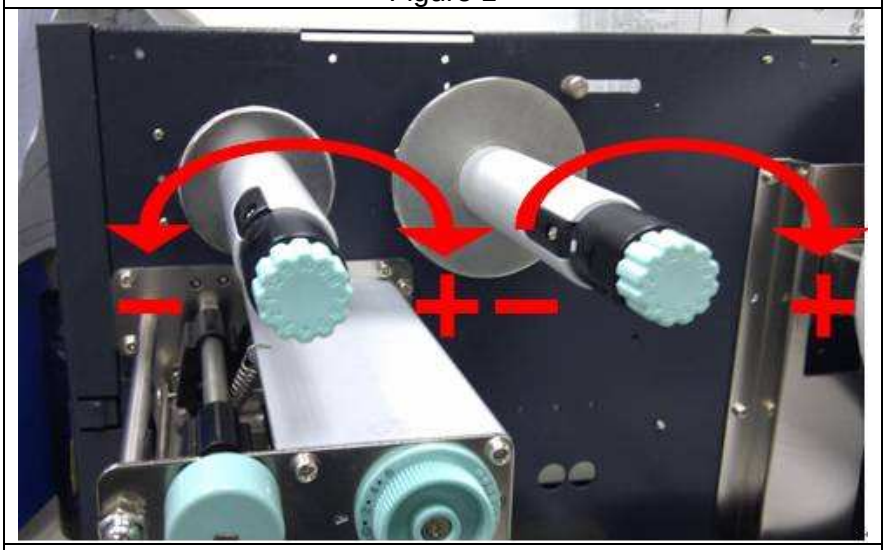
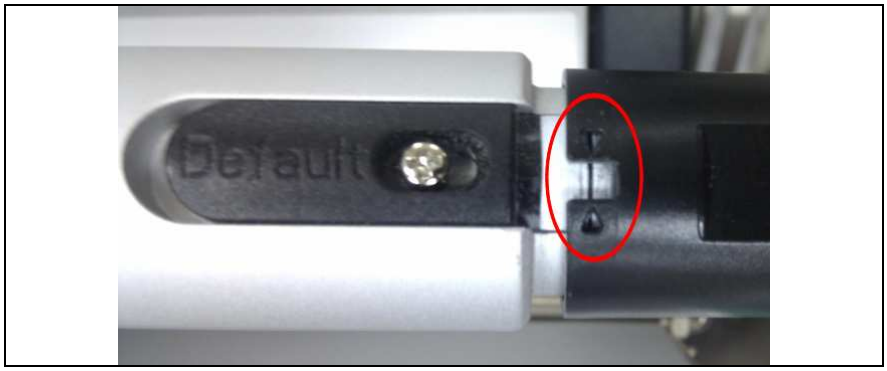


Figure 2


Default

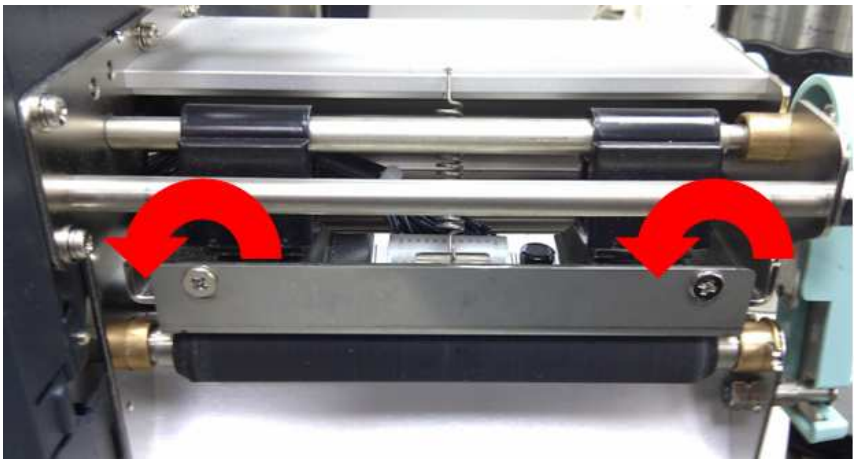
6.6. Printing wrinkle adjustment

During printing, ribbon may wrinkle and cause abnormal printing quality. The following describes how to solve ribbon wrinkle accordingly.

Figure A	Figure B
	

Once the printouts as above appear, the possible cause may be the unequal positions of Ribbon Bracket, which needs to be adjusted properly to make its heights equally the same at both sides. Steps to adjust are as below:

1. Loose the screws at both sides and rotate counter-clockwise:



2. Make sure the Ribbon Bracket is at its lowest position first; then tight up the screws by rotating clockwise.

3. Print a test page to check print quality. If the quality is improved, stop the adjustment; if not, continue with next step.

4. If the test print appears as Figure A, remain the screw at the right of Ribbon Bracket fixed, then loose the screw at the left, and gradually fine-tune upward, until the print quality gets improved.

If the test print appears as Figure B, remain the screw at the left of Ribbon Bracket fixed, and then loose the screw at the right, and gradually fine-tune upward, until the print quality gets improved.

7. OPTIONAL PARTS INSTALLATIONS

CAUTION

The printer electronics are susceptible to static discharge.
Wear an anti-static wrist and attach it to the printer chassis

7.1. Cutter Installation

Rotary cutter installation

1. Turn off the power switch.
2. Remove the top covers on both left and right sides.
3. Mount the Cutter baby board to JP15 on Main Board. (Take care of the location and direction).
4. Secure two screws (3) to fix cutter (1) on bracket (2) (Figure 7.1).
5. Remove the tear-off bracket (5) by releasing screws (4). (Figure 7.2).
6. Insert the left side of cutter bracket (7) and secure two screws (6) to the TPH module (Figure 7.3).
7. Thread the cutter cable (8) through a hole (Refer to the arrow of Figure 7.3) and route it to JP14 connector (CUTTER) on the Main Board.
8. Turn on the power switch and enable cutter from panel setting.

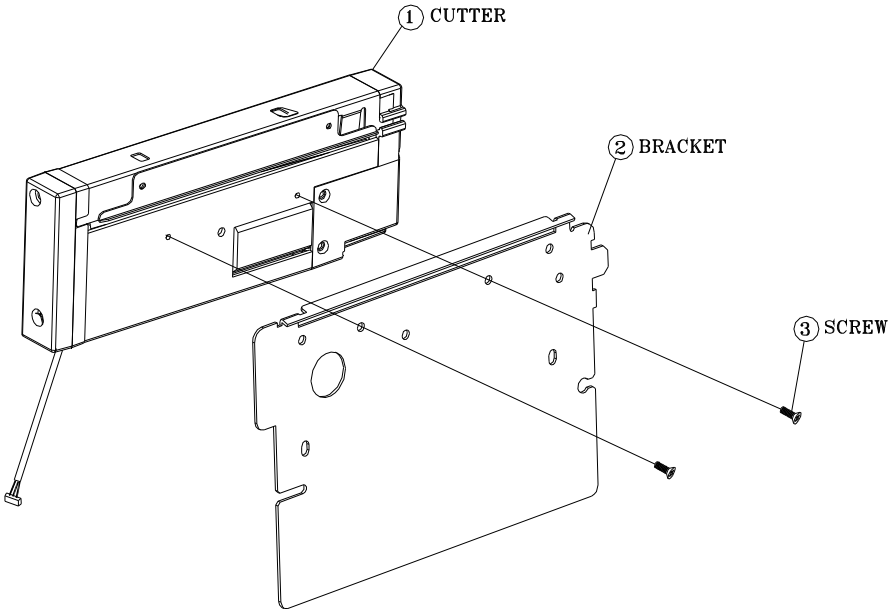


Figure 7.1

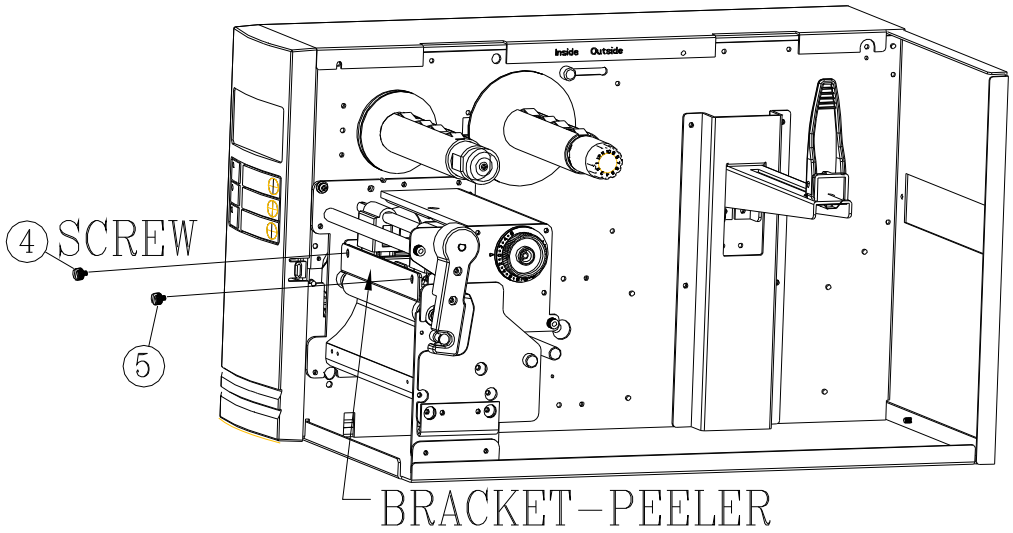


Figure 7.2

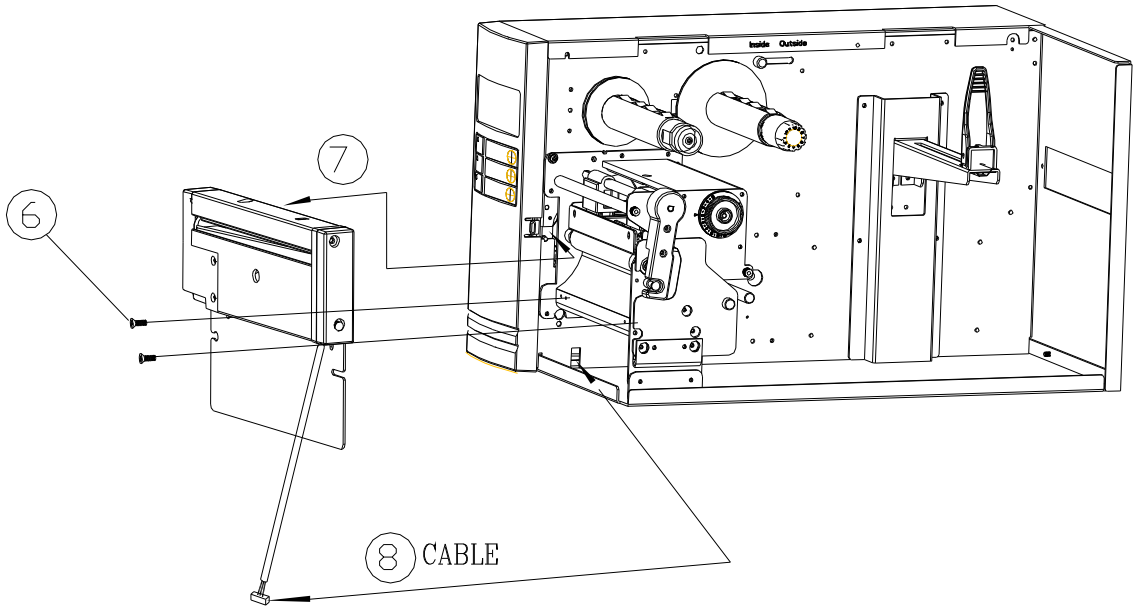


Figure 7.3

Guillotine cutter installation

1. Turn off the power switch.
2. Remove the top covers on both left and right sides.
3. Mount the Cutter baby board to JP15 on Main Board. (Take care of the location and direction).
4. Remove the tear-off bracket (5) by releasing screws (4) (Figure 7.2).
5. Thread the cutter cable (8) through a hole (Refer to the arrow of Figure 7.4) and route it to JP14 connector (CUTTER) on the Main Board.
6. Insert the left side of cutter bracket (7) and secure three screws (6) to the TPH module (Figure 7.4).
7. Turn on the power switch and enable cutter from panel setting.

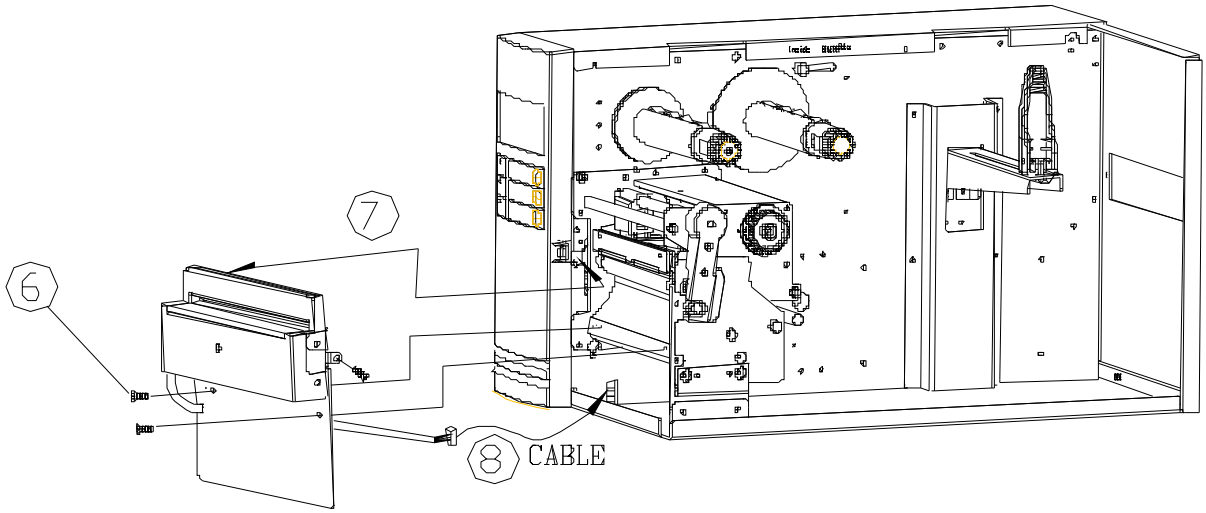


Figure 7.4

Install the media and the ribbon after the cutter is proper installed.

1. Put the media end on the roller.
2. Close the TPH latch.
3. Hold the PAUSE/CALIBR button then turn on the power switch.
4. Release the button when the cutter starts cutting.
5. After cutting the printer will feed the label for about 8 inches.

The above procedure is taken at first time after installation or cutter jam.
Normally the procedure is:

1. Put the media end on the roller.
2. Close the TPH latch.
3. Turn on the printer.
4. Press the FEED button to let the media end go through the cutter.

In general the cutter cuts the label at the center of the media gap. User may change the cutting position for special media by sending a shift command to the printer:

1. You may send a shift command.
   <ESC>KI;_
   where “-“ is a signed byte and in terms of dots. This parameter can be saved permanently in the FLASH.

2. Alternatively you may change the parameter from panel CUTTET/PEELER OFFSET.

7.2. Dispenser/Rewinder installation and adjustment

7.2.1. Installation

1. Turn off the power switch.
2. Remove the top covers on both left and right sides.
3. Assemble the related components for both left and right sides. Refer to the Figure 7.5.

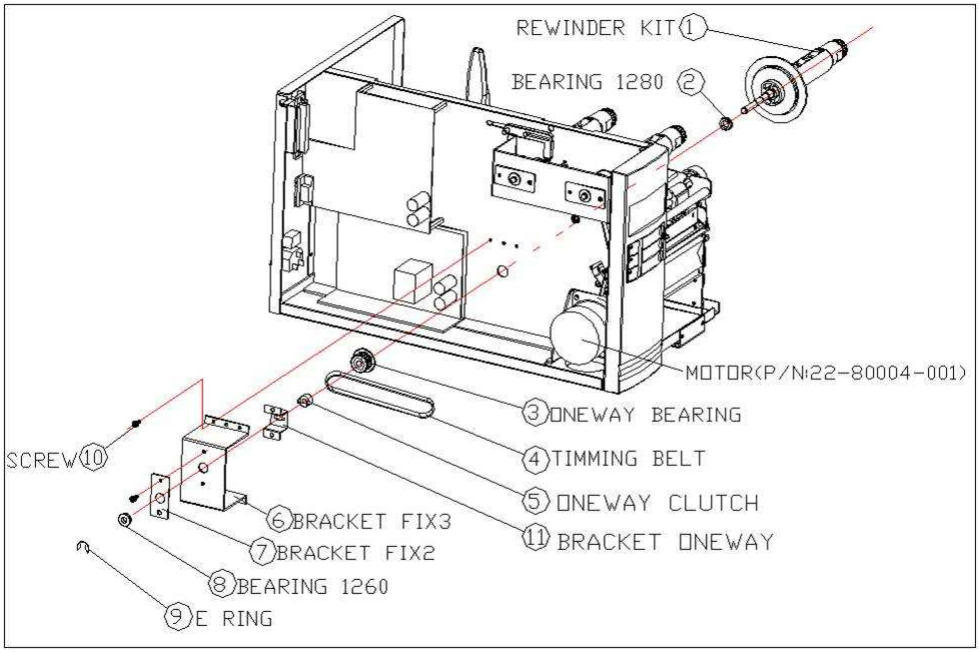


Figure 7.5

4. Connect the dispenser sensor assembly (11) to JP12 (PEELER) on main board and secure the dispenser board in front of TPH module. Refer to the Figure 7.5-1.Then secure three screws to the TPH module (Figure 7.5-2).

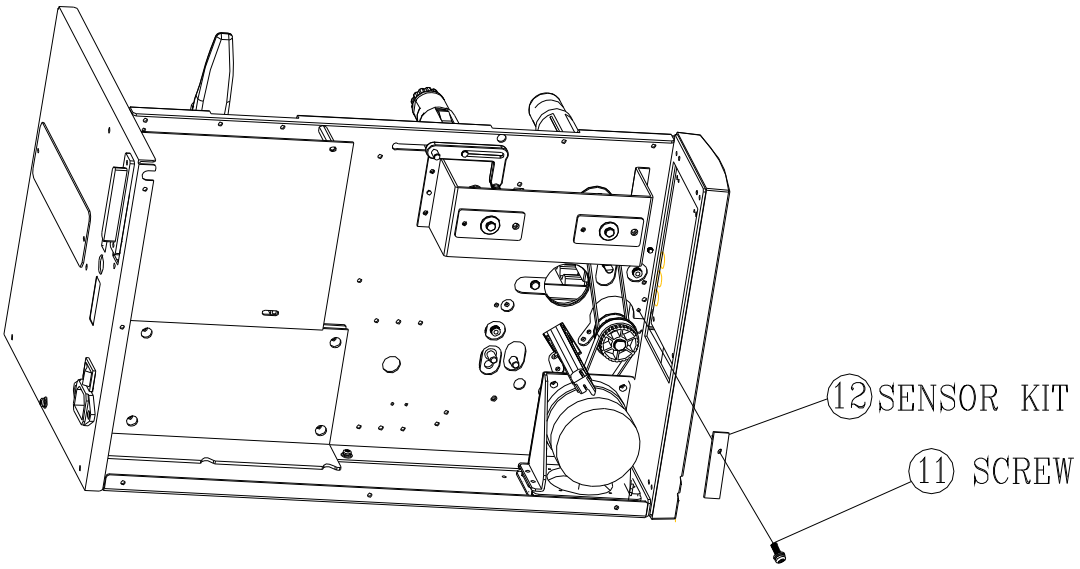


Figure 7.5-1

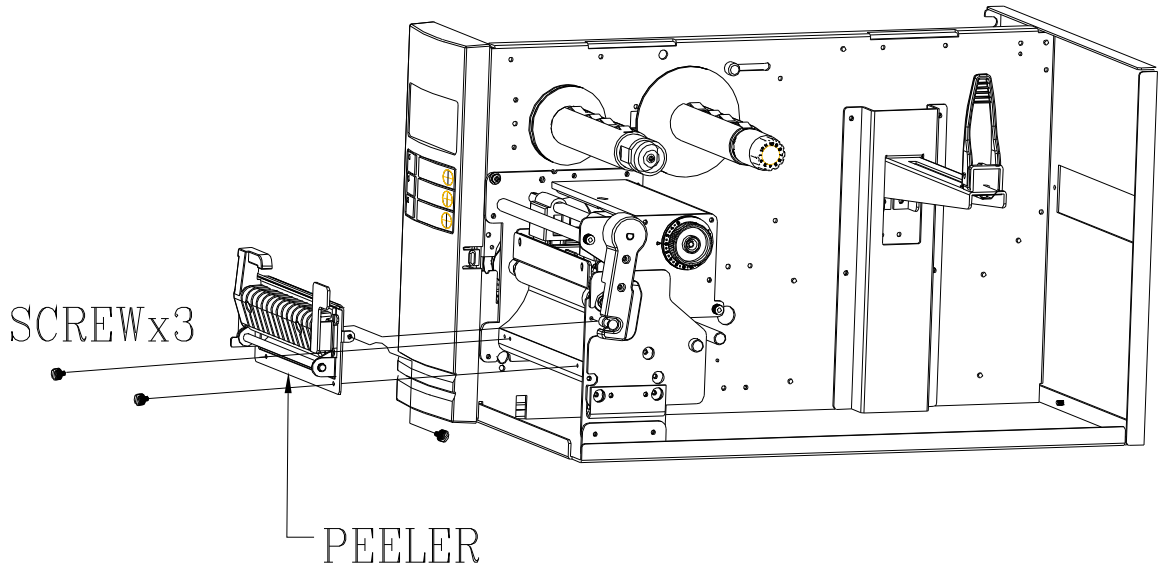


Figure 7.5-2

5. Install the ribbon and the media. As figure 7.6.

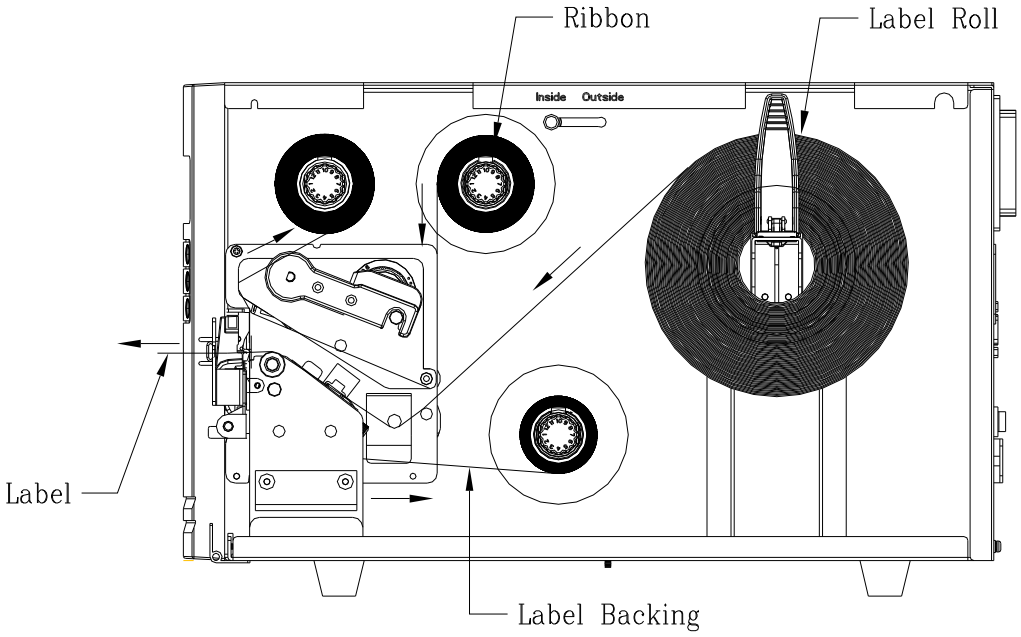


Figure 7.6

6. Turn on the power switch.
7. Select the PEELER INSTALL item on LCD and enable it.

7.2.2. Adjustment

The tension of the take-up spindle is adjustable by adjusting the screw (13) (Figure 7.7). The Spindle of the dispenser kit must be parallel with the exit media or label. To adjust the position may Loosen the two screws (14) and (15) (Figure7.8), reposition the spindle and secure the screws.

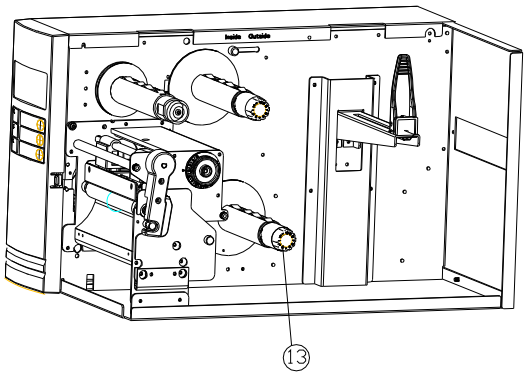


Figure 7.7

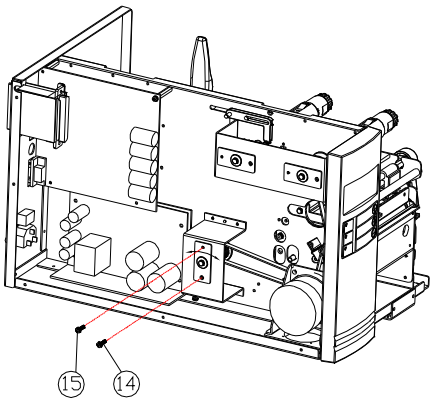


Figure 7.8

Modification for using the ribbon with outside coating

The printers are produced to use the ribbon with inside coating. It is also possible to use the outside coating ribbon by doing the following modification:

1. Pull up and hold the shaft as shown in Figure 7.9.

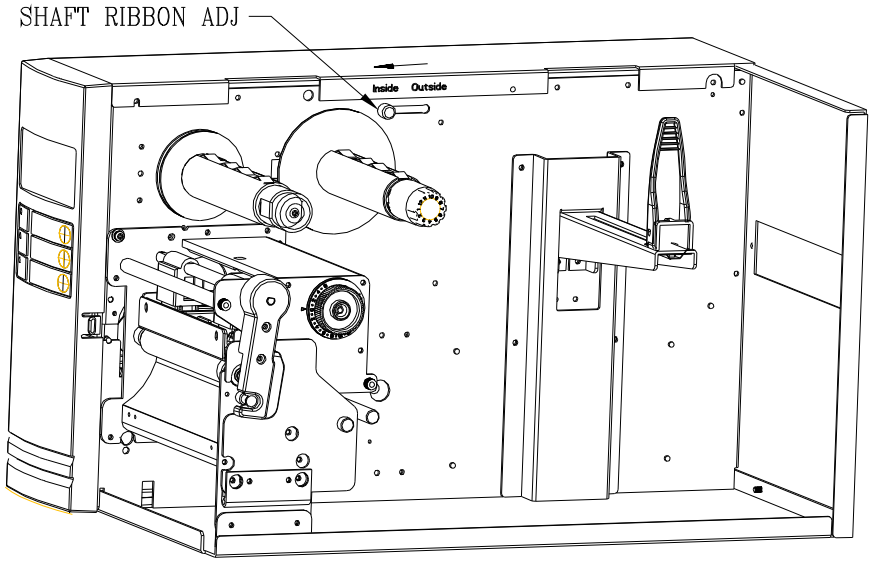


Figure 7.9

2. Shift the shaft to the position under with mark “OUTSIDE” and release the shaft. (Figure 7.10)

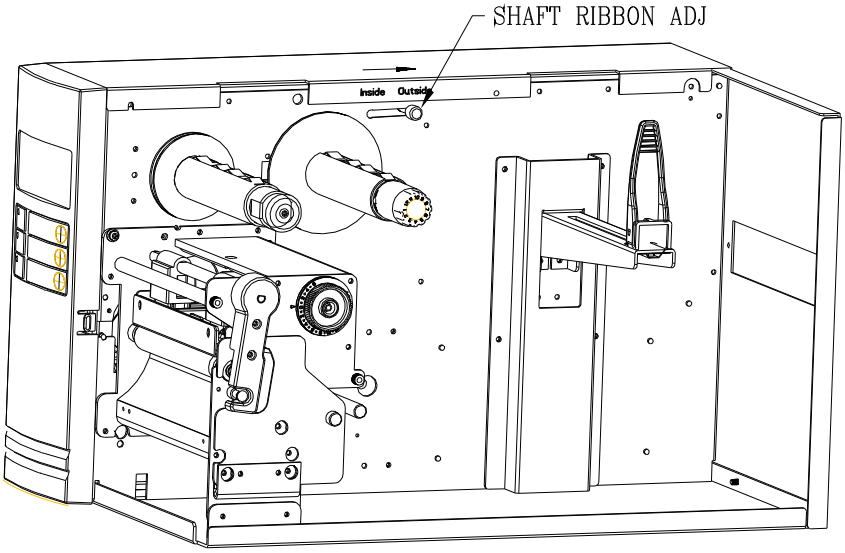


Figure 7.10

3. Readjust the tension of the ribbon supply spindle (refer to section 6.5).
4. After the modification, ribbons with outside coating can be used and the ribbon should be loaded as Figure 7.11.

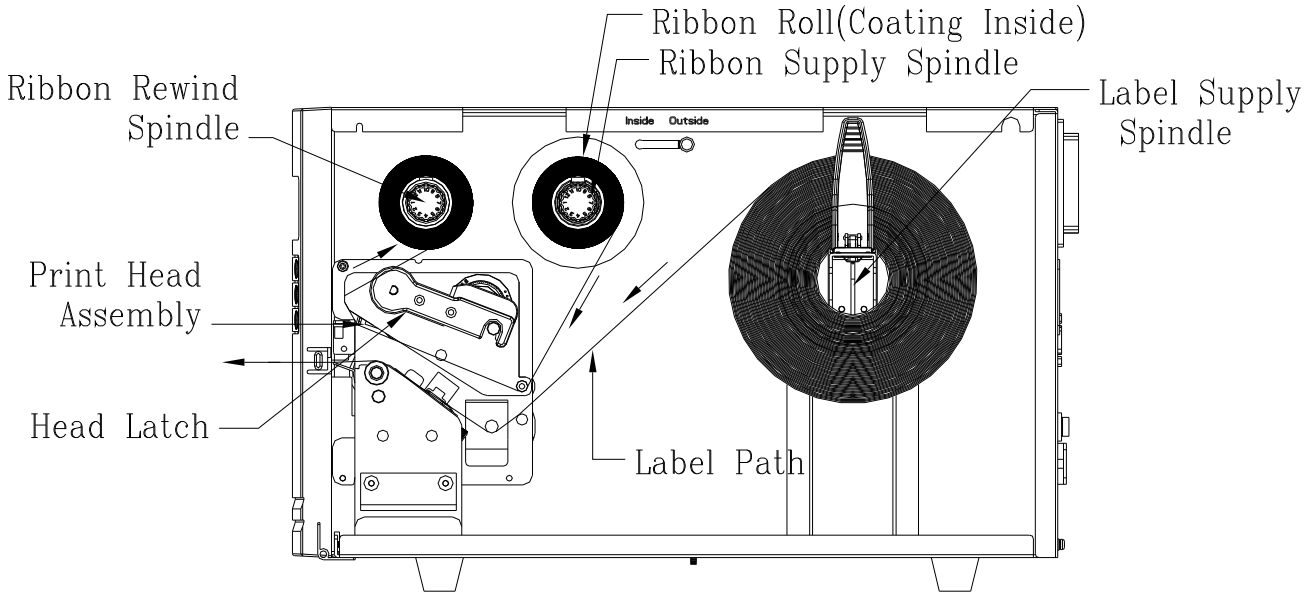


Figure 7.11

8. FIRMWARE UPGRADING

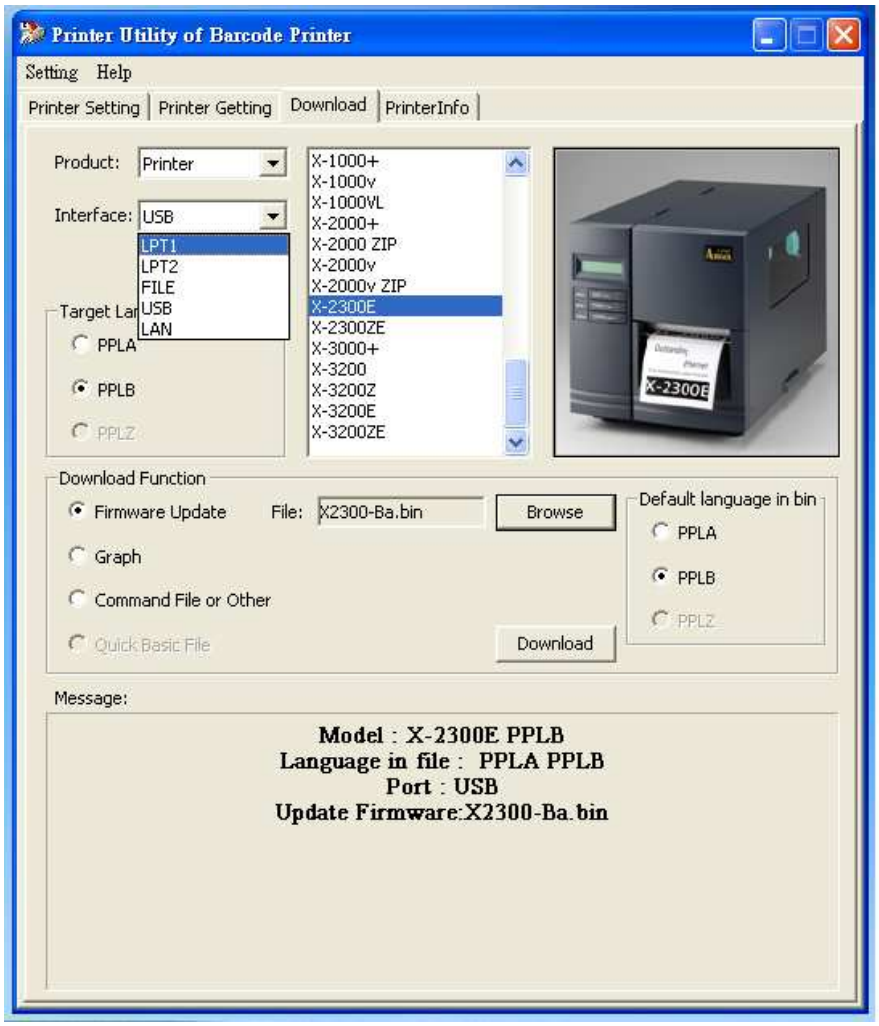
Firmware in Printer X-2300E/X-3200E series can be upgraded through the USB, Centronics and Ethernet. The following describes how to upgrade Firmware in Normal and Crashed cases.

8.1. Upgrade Firmware in Normal Case

8.1.1Upgrade Firmware with Printer Utility

Run the printer utility and let the firmware modify itself.

1. Turn on the printer and wait for 3 seconds.
2. Execute Printer Utility to upgrade firmware; select Download Tab, choose correct model name and language, click Brower to find the firmware source.



3. Wait for some seconds until LCD shows “RESTART PRINTER.”
4. Restart printer.
5. Upgrading firmware is completed.

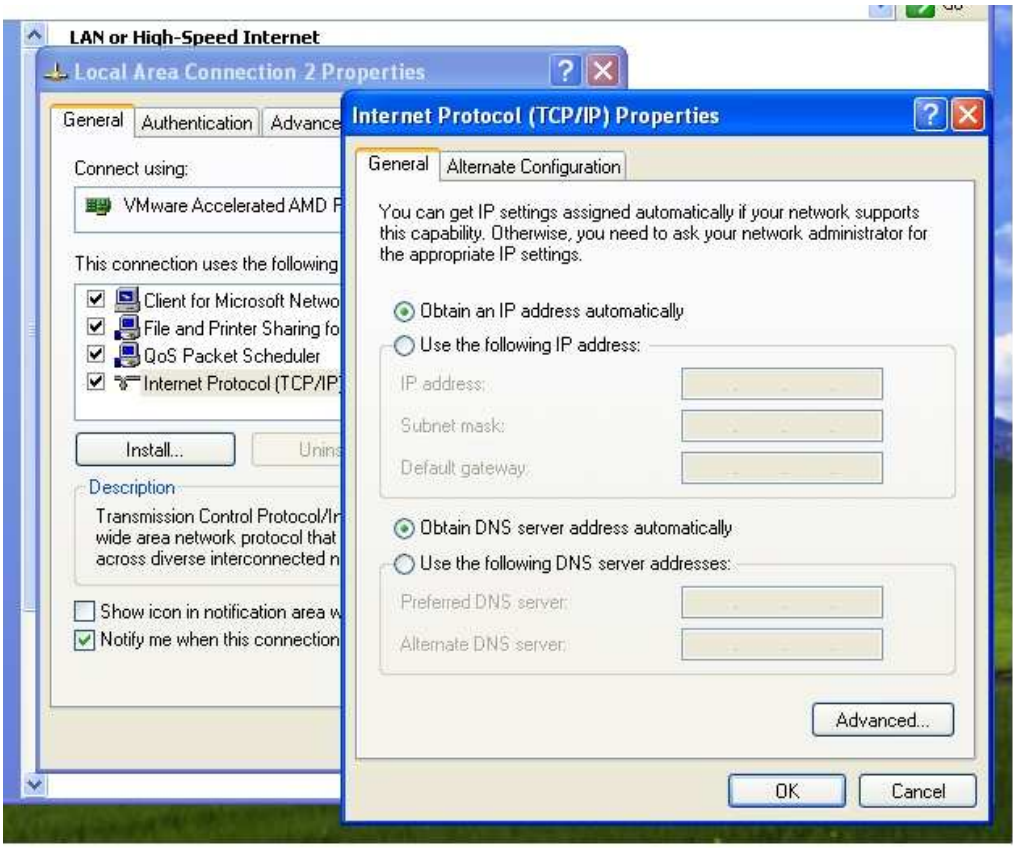
8.1.2Upgrade Firmware through Network

We will meet two conditions as following:

1. PC connects many printers (must connect Router) **(I.)**
2. PC connects one printer **(II.) (III.).**

I.

1. Connect PC and printers to a router by Ethernet cables.
2. Set the Internet Protocol (TCP/IP) contents as “Obtain IP/DNS address automatically”.

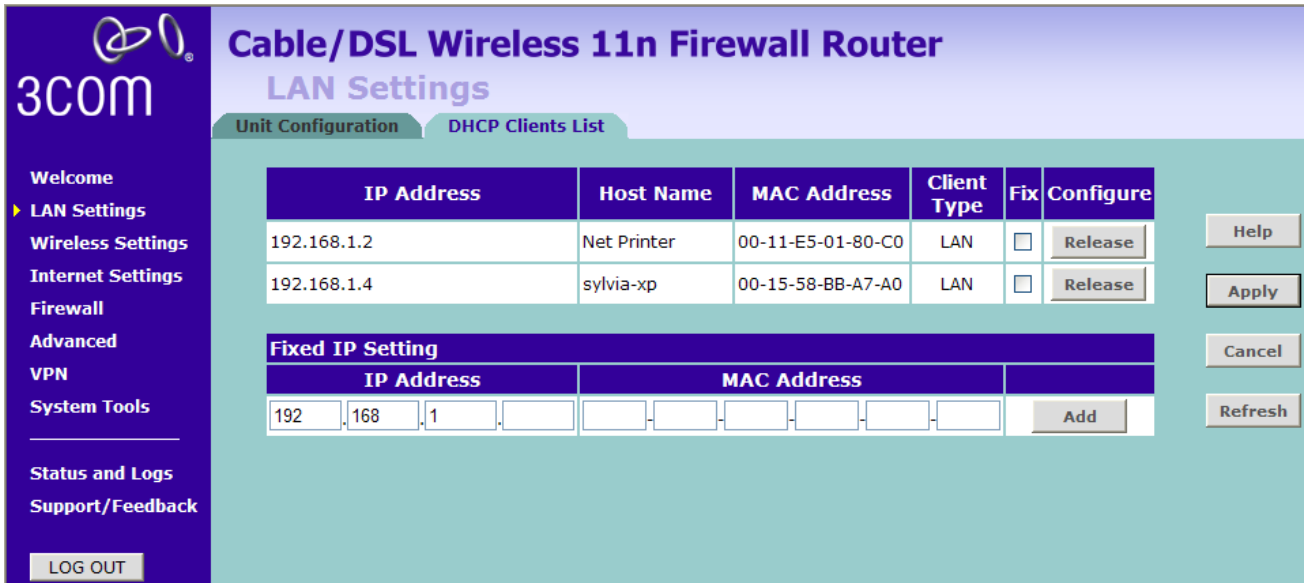


3. Open IE and key in “the default IP address for router.”

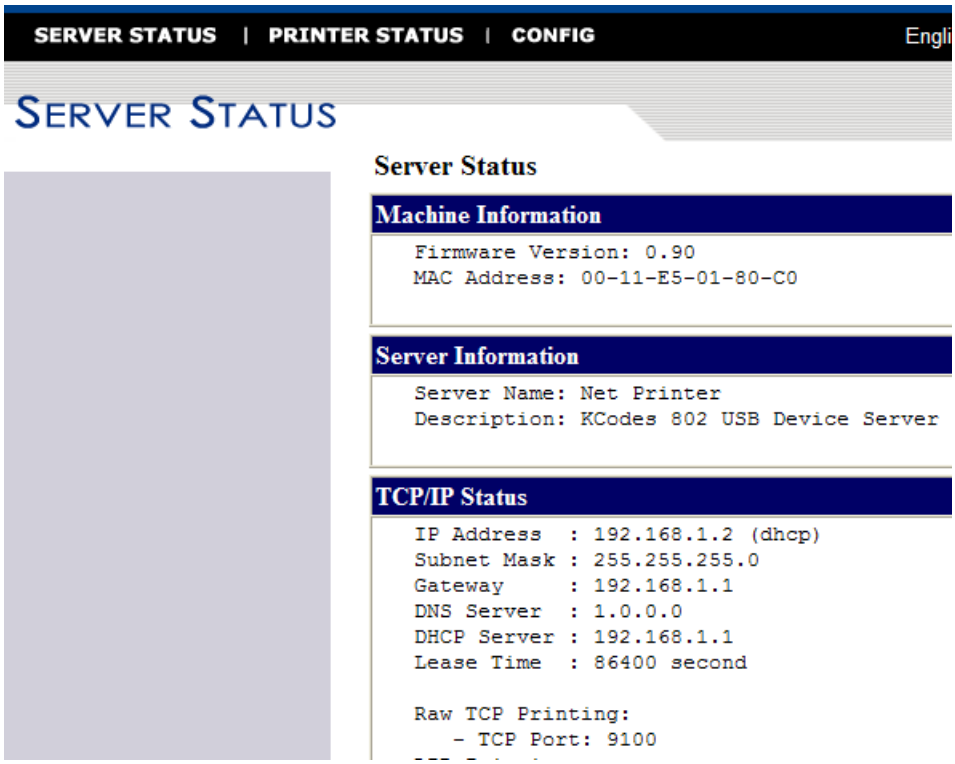
(The default IP address of router (3COM) is http://192.168.1.1)

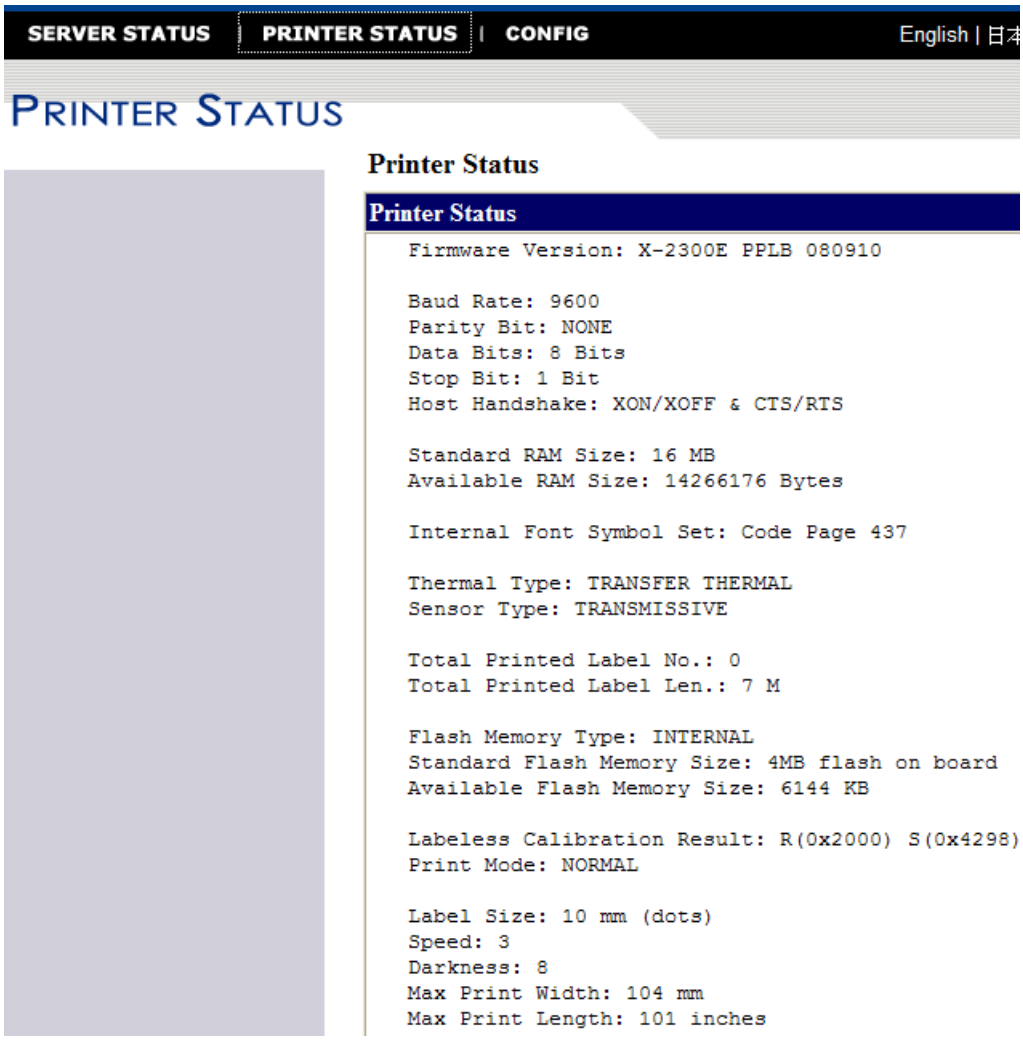
4. Enter password and log in, the result is as bellow:

5. Find out **DHCP Clients List** in **LAN Settings**, you can get the IP address of PC and printers, the result is as bellow:

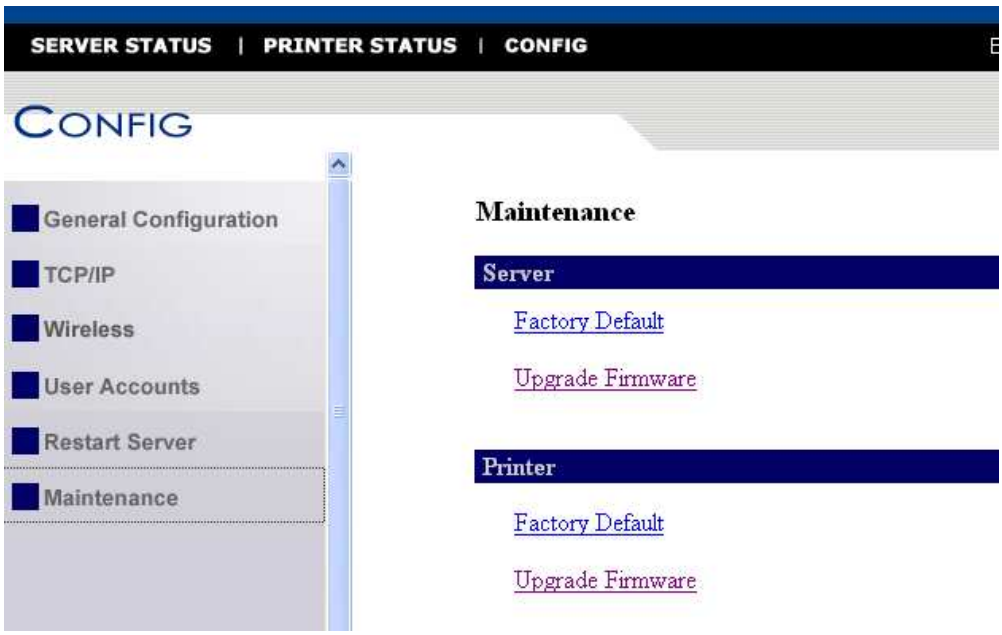


6. Open another IE and enter the related IP address(*http://192.168.1.2*), we can check the server status and the printer status, the result is as bellow:



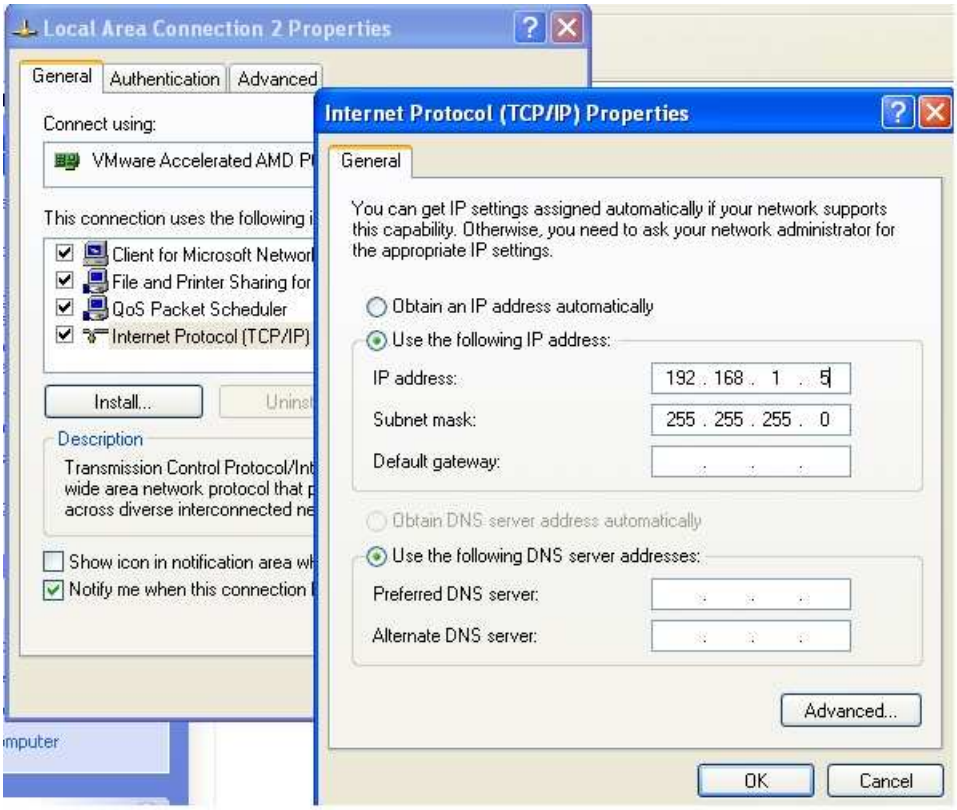


7. Click **CONGFIG**, the firmware of Ethernet card and printer can be upgraded here.

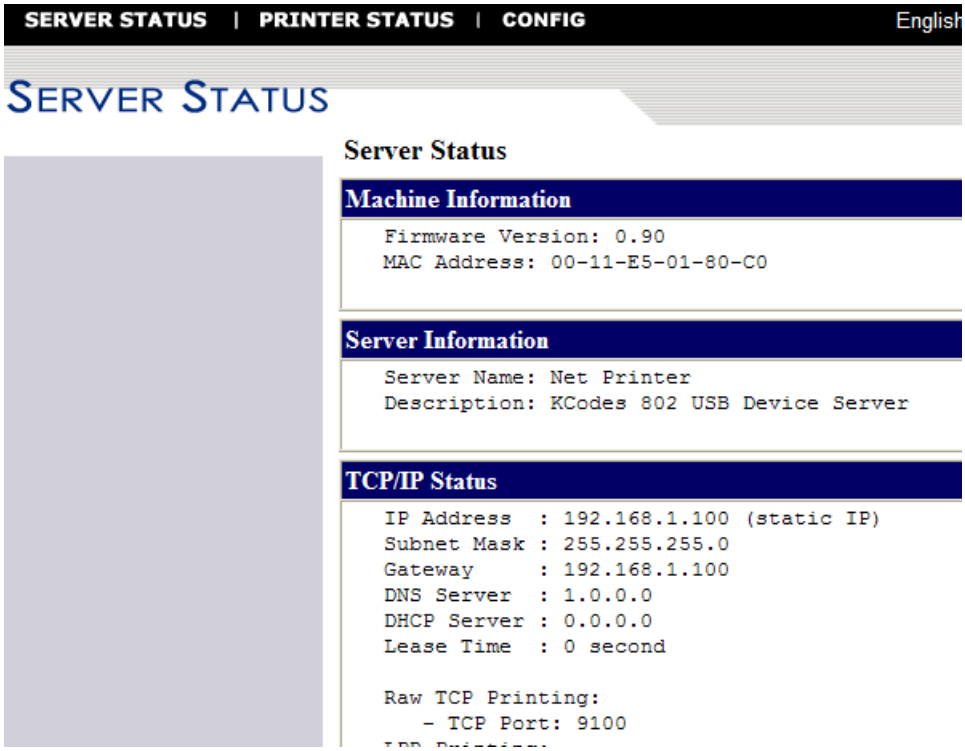


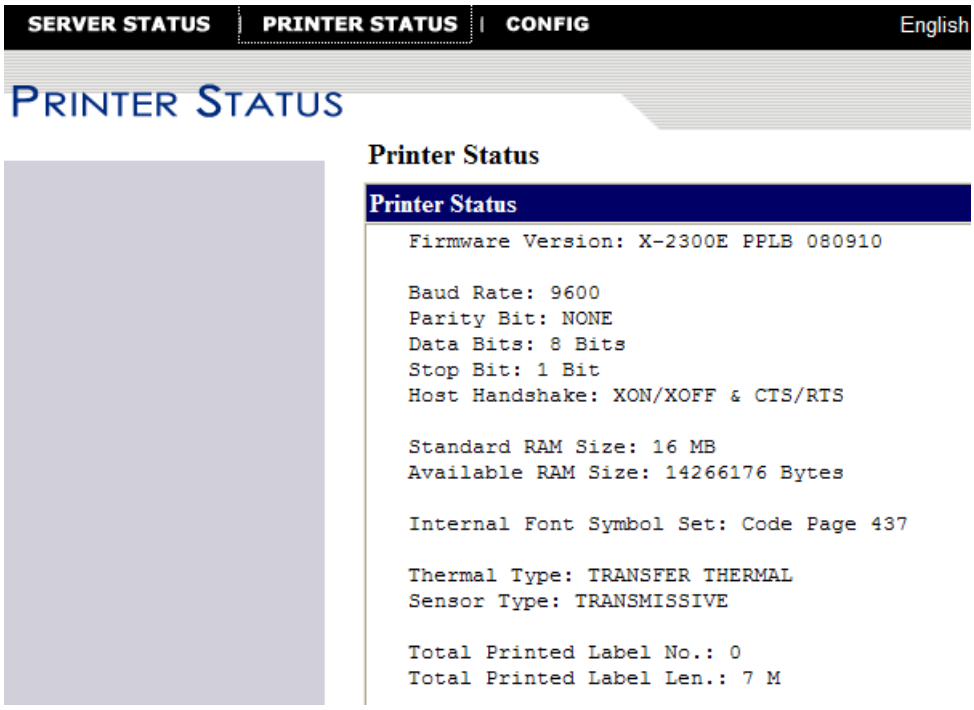
II.

1. Connect PC and printer with Ethernet cable. Then restart the printer for about 1 minute.
2. Set the Internet Protocol (TCP/IP) content. Please assign the IP address as 【192.168.1.xxx】.



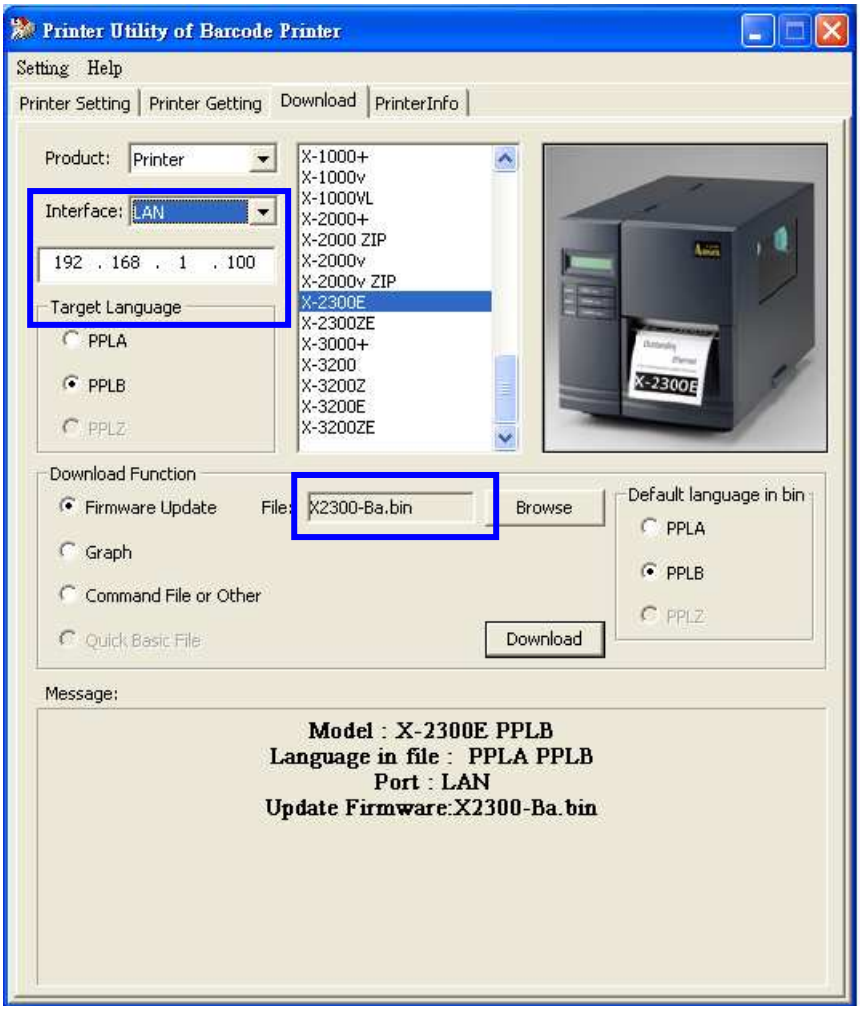
3. Open another browser and enter the specific IP address*(http://192.168.1.100)* for printer**,** we can get related status of server(Ethernet card) and printer, the result is as bellow:


SERVER STATUS | PRINTER STATUS | CONFIG English
SERVER STATUS
Server Status
Machine Information
Firmware Version: 0.90
MAC Address: 00-11-E5-01-80-C0
Server Information
Server Name: Net Printer
Description: KCodes 802 USB Device Server
TCP/IP Status
IP Address : 192.168.1.100 (static IP)
Subnet Mask : 255.255.255.0
Gateway : 192.168.1.100
DNS Server : 1.0.0.0
DHCP Server : 0.0.0.0
Lease Time : 0 second
Raw TCP Printing:
- TCP Port: 9100


SERVER STATUS | PRINTER STATUS | CONFIG English
PRINTER STATUS
Printer Status
Printer Status
Firmware Version: X-2300E PPLB 080910
Baud Rate: 9600
Parity Bit: NONE
Data Bits: 8 Bits
Stop Bit: 1 Bit
Host Handshake: XON/XOFF & CTS/RTS
Standard RAM Size: 16 MB
Available RAM Size: 14266176 Bytes
Internal Font Symbol Set: Code Page 437
Thermal Type: TRANSFER THERMAL
Sensor Type: TRANSMISSIVE
Total Printed Label No.: 0
Total Printed Label Len.: 7 M

III.

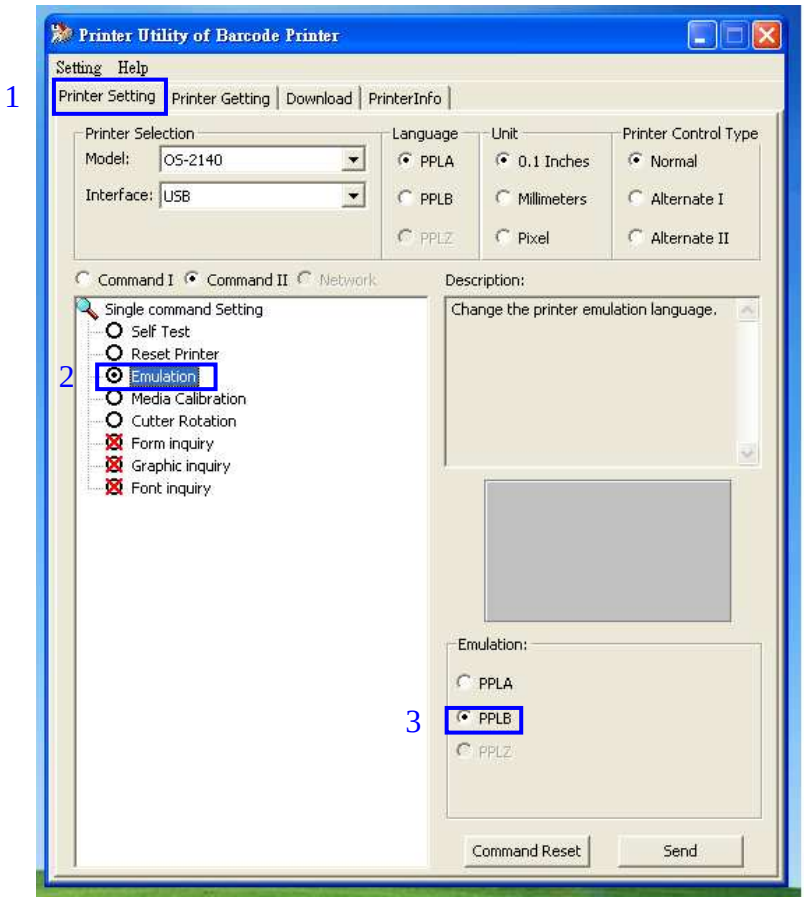
1. Choose what printer you want to upgrade firmware, and then select **LAN**.
2. Input IP Address.
3. Choose **.bin** file to upgrade firmware.



8.2. How to Transferring Emulation

In **Printer Setting** page, user can see **Command II**. **Command II** has **Emulation** function. In **Emulation** function, user can transfer printer emulation easily.

Let take OS-2140 printer for example. This printer default emulation is PPLA, if user wants to operate printer in PPLB mode, user can enter **Printer Setting** page to choose **Emulation**, then click **PPLB** in Emulation section.



8.3. Upgrade firmware in crashed case

In very abnormal case, the Boot-Up program located at BOOT sector of Flash ROM in printer might be crashed (supposedly it is impossible to happen). This will cause the printer fail to perform firmware upgrade with the above normal procedures. In this case, you might refer to below to upgrade the Firmware.

1. Please install the add-on card.
2. DIP switch on DIP 5 should be put on “ON” position.
3. Turn ON the printer and wait until all LEDs are blinking at the same tempo.
4. Turn OFF the printer.
5. Put DIP switch on DIP 5 to the “OFF” position again.
6. Turn ON the printer, if “READY” LED blinks that means the crashed case is solved.
7. If the firmware is not latest, please refer to steps in section **8.1** to upgrade the latest firmware.

8.4. Verification

To confirm that you had successfully changed the firmware you just check the self/configuration printout.

1. Turn off the printer until all the LED go OFF
2. Press the FEED/CONFIG button and turn on the printer
3. When the motor starts rotation release the button
4. Check the version code and date code, also the checksum code (must be 0000).

9. MAINTENANCE AND TROUBLE SHOOTING

9.1. Printer status indication

The printer has built-in monitors for the status. The status and error indications will be displayed on the front panel LED indicators and the LCD display if it is equipped. Generally, when a malfunction or an abnormal condition occurs, the READY LED will keep blinking and printing and communication between the host and printer will stop. To understand the problem, please check the LED indicators and LCD display on the front panel.

CAUTION

The printer electronics are susceptible to static discharge.
Wear an anti-static wrist and attach it to the printer chassis.

LCD display	Blinking LED	Description
PAUSE	READY	The printer is at pause state. Press PAUSE or CANCEL to return to normal state.
MEDIA OUT	MEDIA READY	The media is not installed or used up. Printer fails to detect the media gap.
RIBBON OUT	RIBBON READY	The ribbon is not installed or end-of-ribbon occurred. Load new ribbon to the printer. If you just use thermal media, please disable the RIBBON on LCD.
SERIAL IO ERROR	READY	The format or baud rate of the RS232 communication is inconsistent between the printer and host.
CUTTER FAILED	READY	The cutter cannot cut off the media, check the media and cutter.
MEMORY FULL	READY	The printer buffer is full caused by the loaded soft fonts, graphics or forms. Check the format of these data. Call for service
SENSOR O.R.	READY	The media sensor is out of range during calibration. Make sure the media is installed and the label sensor is put under the media.
PRINT HEAD HEAT	MEDIA	Printing job will start until the temperature of TPH goes down.

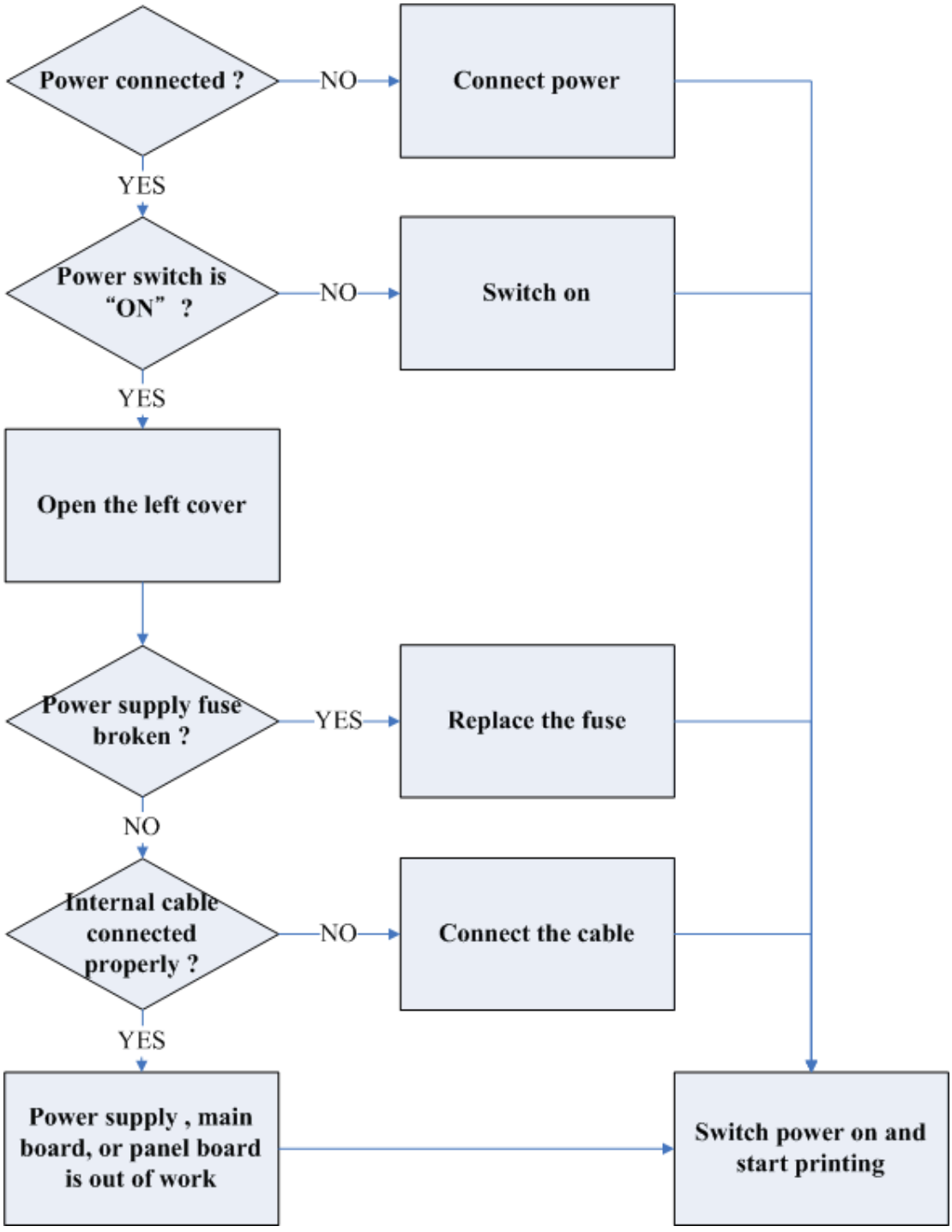
HEAD OPEN	READY	Head latch is not closed; before printing please close up head latch.

Table 9.0

9.2. Trouble Shooting

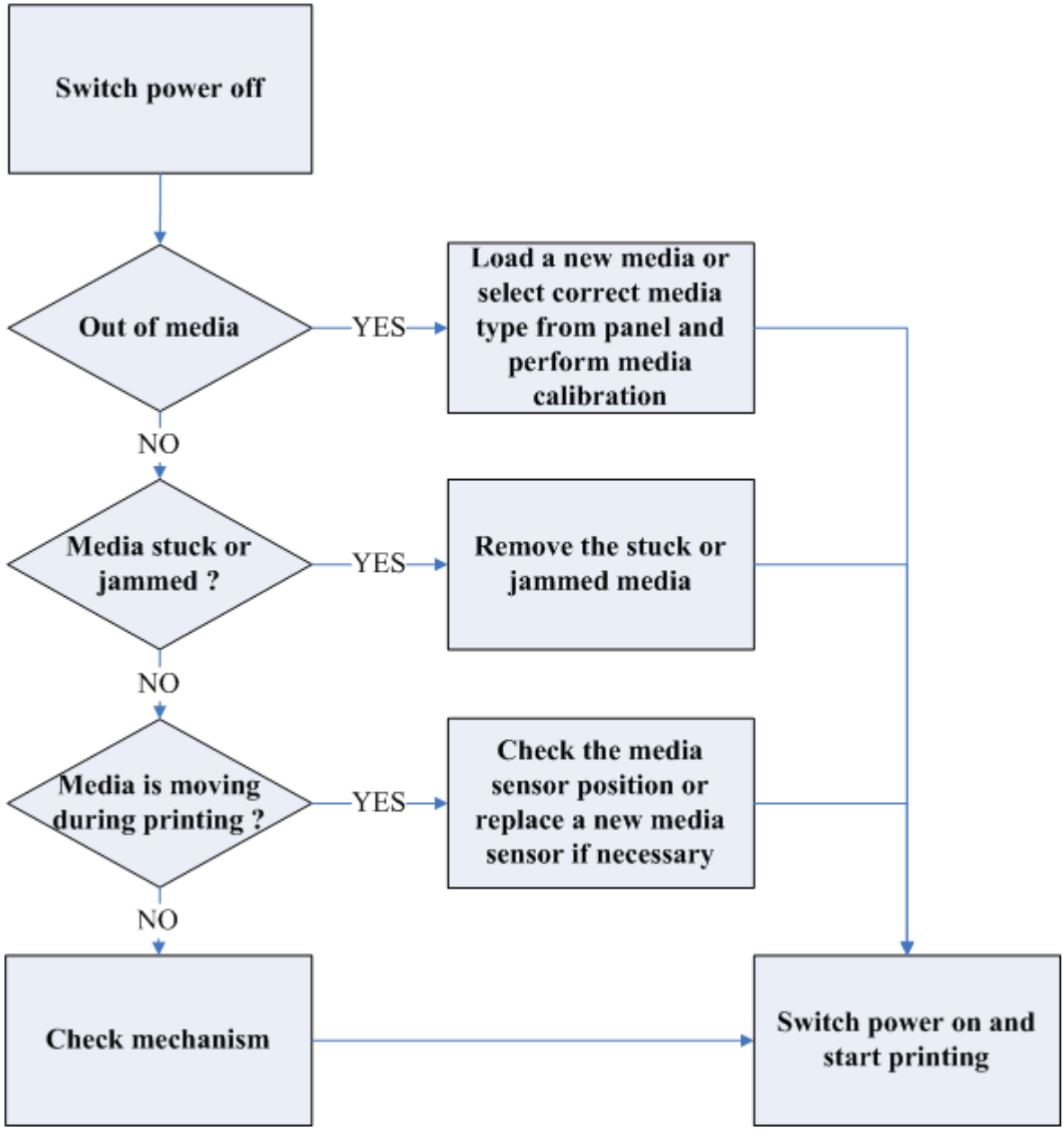
No indication:

LCD display	LED	Description
OFF	All the LED are OFF	Out of power or printer out of work



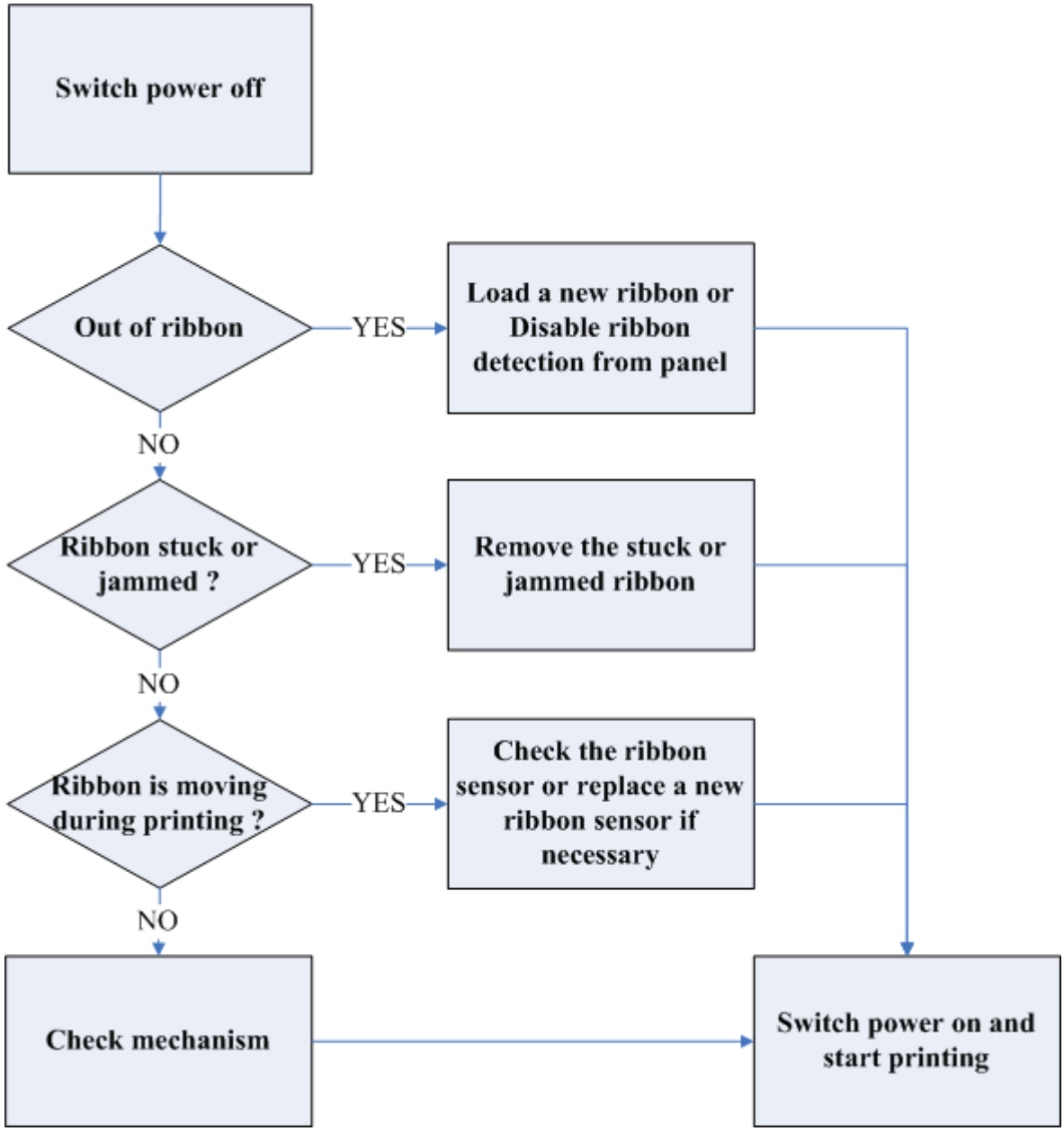
Out of media indication:

LCD display	Flash LED	Description
MEDIA OUT	MEDIA READY	The media is not installed or used up. Printer fails to detect the media gap.



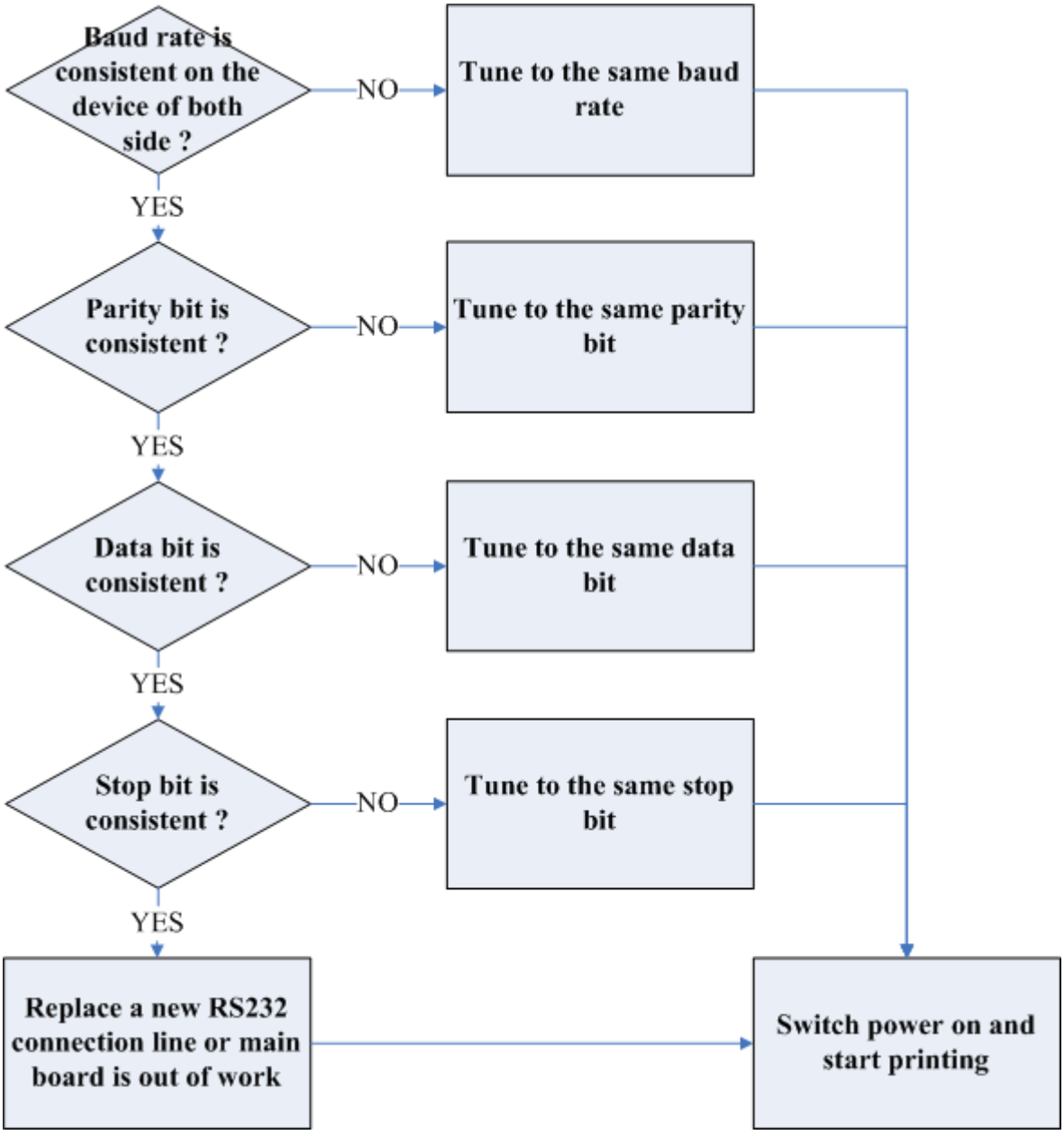
Out of ribbon indication:

LCD display	Flash LED	Description
RIBBON OUT	RIBBON READY	The ribbon is not installed or out of ribbon.



Serial port error:

LCD display	Flash LED	Description
SERIAL IO ERROR	READY	The format or baud rate of the RS232 communication is inconsistent between the printer and host.



9.3. Clearance

CAUTION

The printer electronics are susceptible to static discharge.
Wear an anti-static wrist and attach it to the printer chassis

There are some components need to be clean-up occasionally:

Thermal print head

The debris of thermal paper or ribbon may collect on the print head causing characters or bar codes to appear light or faded. To clean the print head, wet a soft paper towel with isopropyl rubbing alcohol and use the damp towel to rub the dirt from the print head surface.

To clean the print head after every roll of ribbon is recommended.

Platen roller

If the roller becomes contaminated with grit, label adhesive, or ink, printing quality may be adversely affected. To clean the roller, using a clean cloth and alcohol, wipe off any accumulated debris.

Media sensor

The dirt on the paper sensor will cause the miss or unstable detection of label gap. Clean it with bristle brush or air blow once in a while.

Note: *Switch off the power before cleaning!*

9.4. Replacement

Power supply fuse replacement

CAUTION

The printer electronics are susceptible to static discharge.
Wear an anti-static wrist and attach it to the printer chassis

1. Switch off the power and disconnect the AC power cord.
2. Open the left side cover of the printer.
3. Replace the fuse which is located at the upper right corner of the power supply with the same specification (5 amps) fuse.
4. Close the cover.

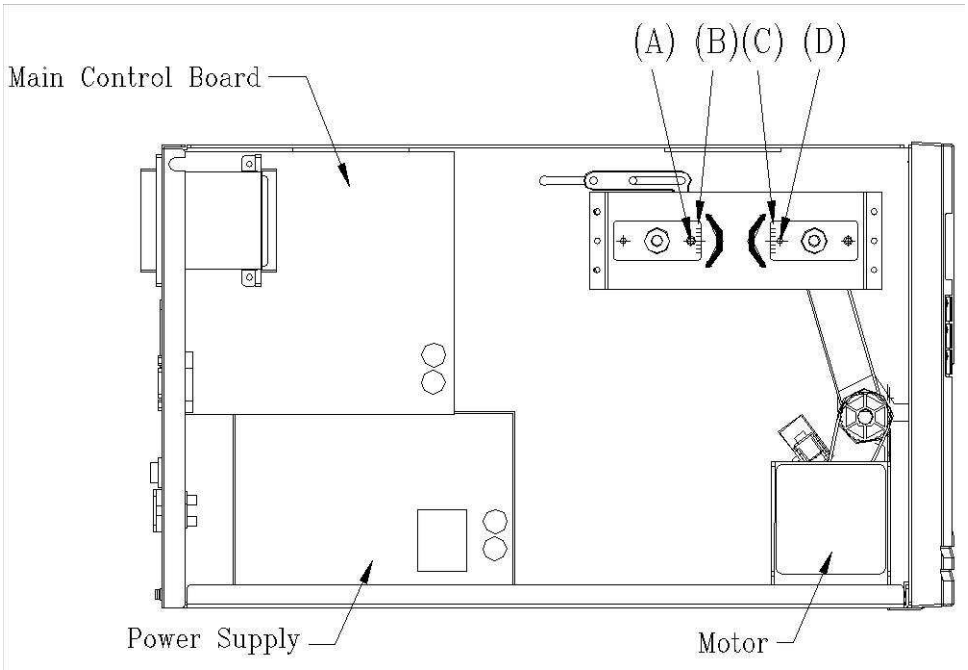


Figure 9.1

TPH (thermal print head) replacement

To replace the print head, please follow the procedure as shown on Figure 9.2, 9.3 and 9.4. It is also possible to replace the TPH without remove the print head module.

- Remove the print head cable from the print head.
- Release the screw (F) and (P).
- Remove the print head from the module.

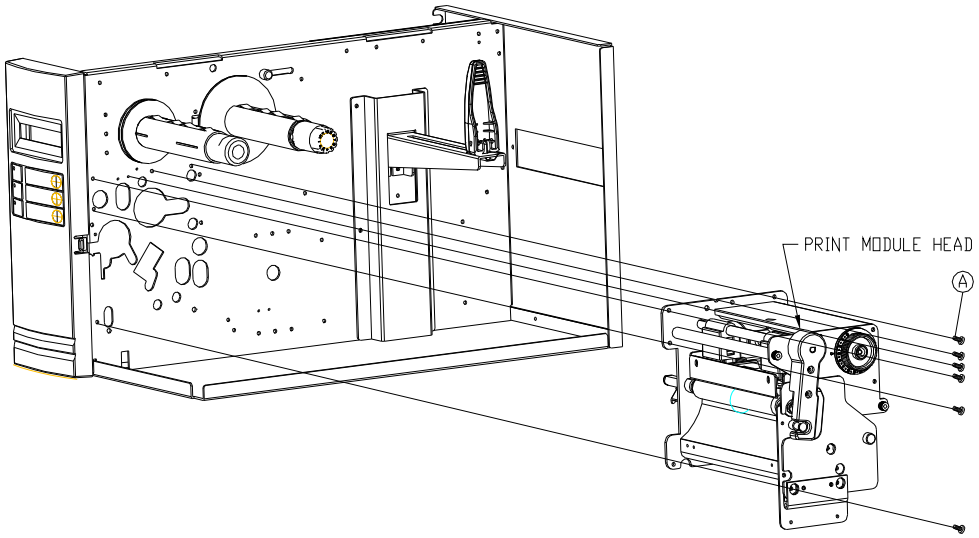


Figure 9.2

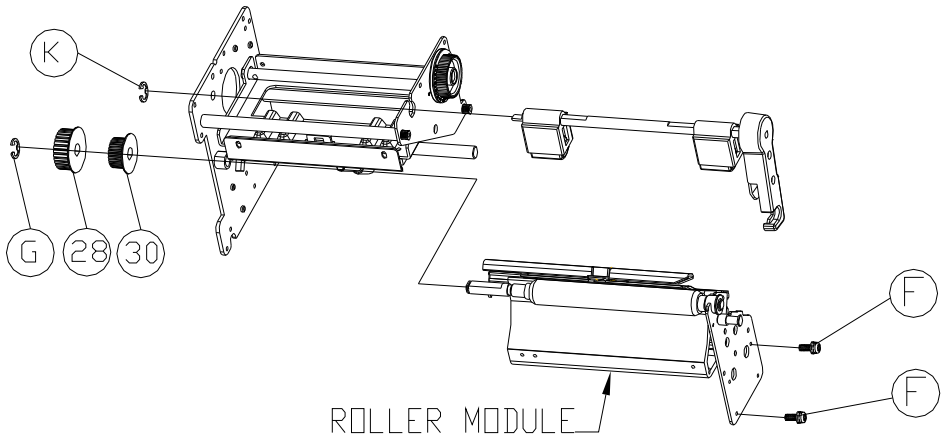


Figure 9.3

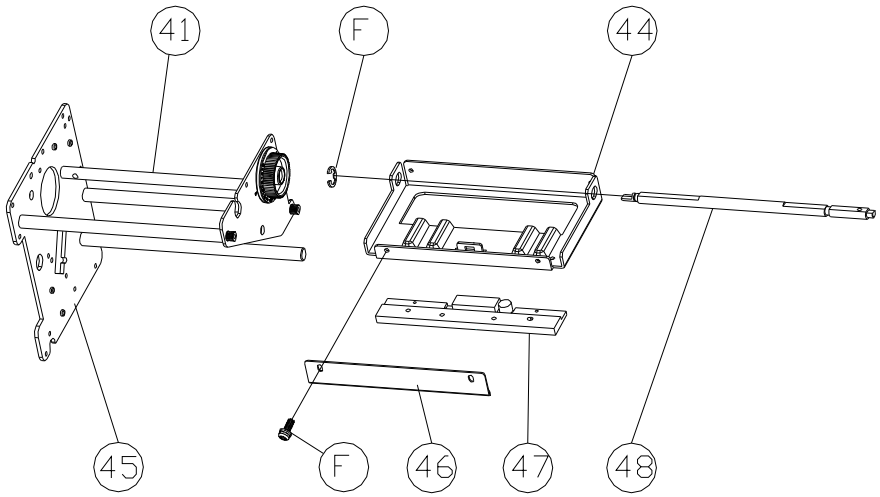


Figure 9.4

Ethernet card replacement

1. Switch off the power and disconnect the AC power cord.
2. Open the left side cover of the printer.
3. Release the 2 screws on centronics (Figure 9.5).
4. Release the 8 screws on main-board (Figure 9.6).
5. Replace the Ethernet on main-board (Figure 9.7).

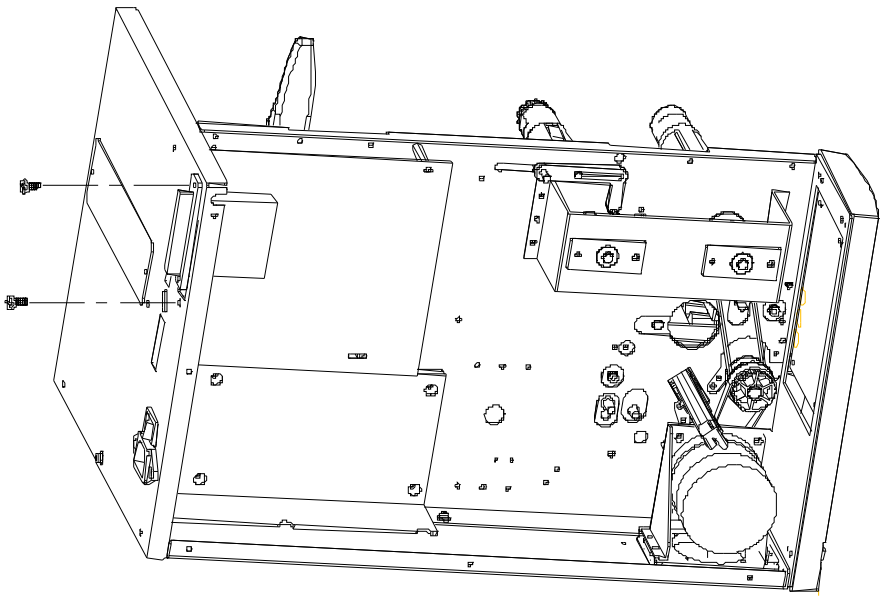


Figure 9.5

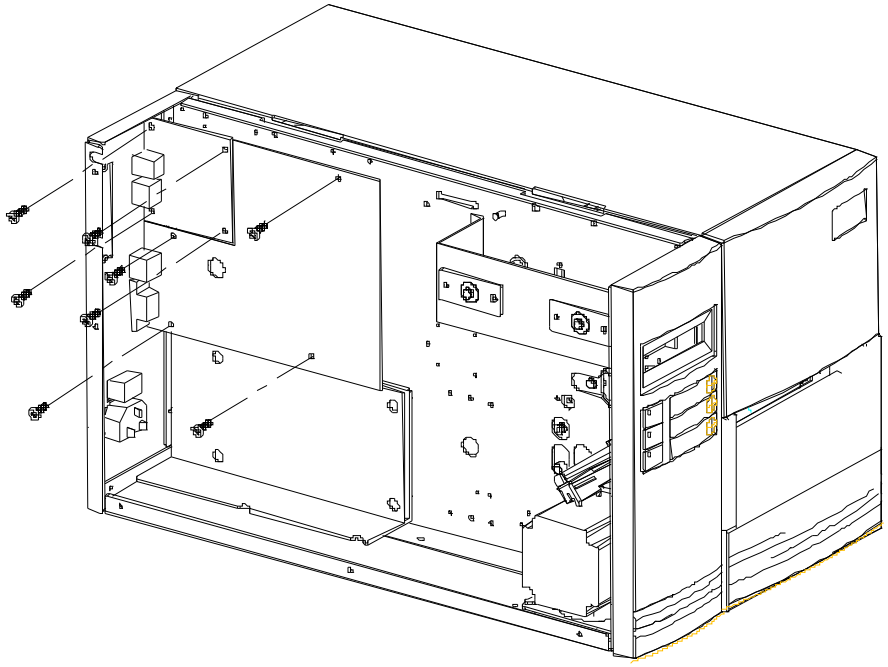


Figure 9.6

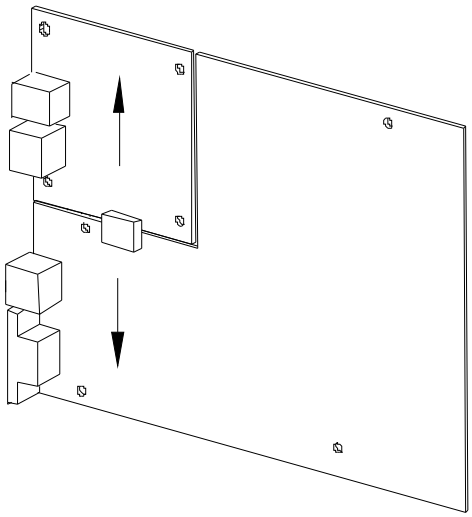


Figure 9.7

RTC battery replacement

1. Switch off the power and disconnect the AC power cord.
2. Open the left side cover of the printer.
3. Unlatch the lock on main-board and replace the battery (Figure9.8).

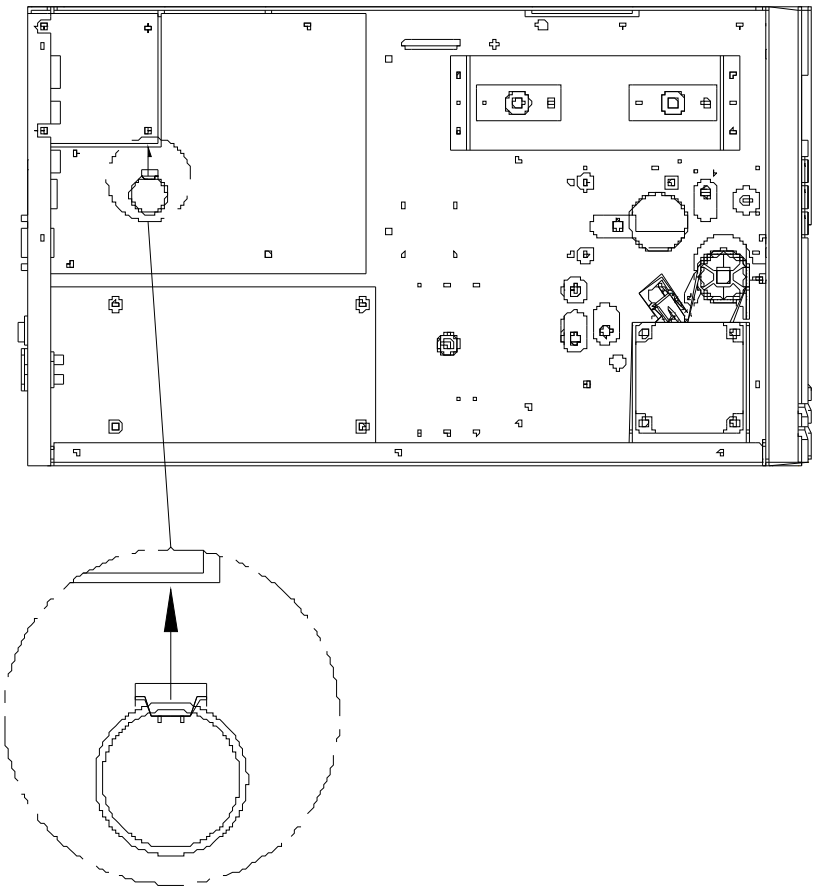
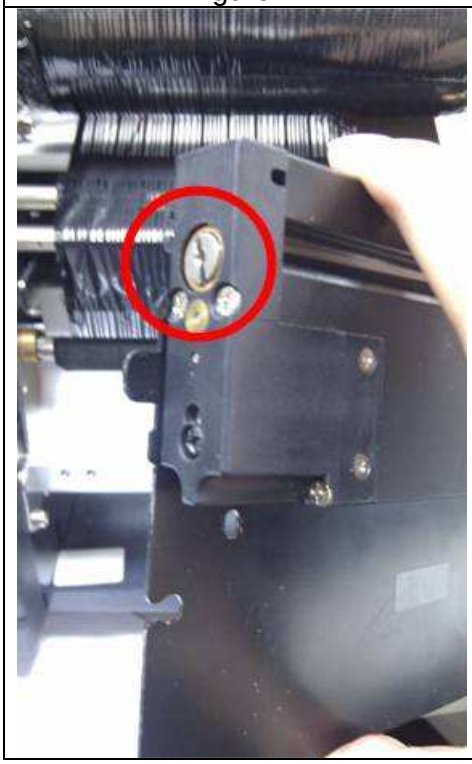
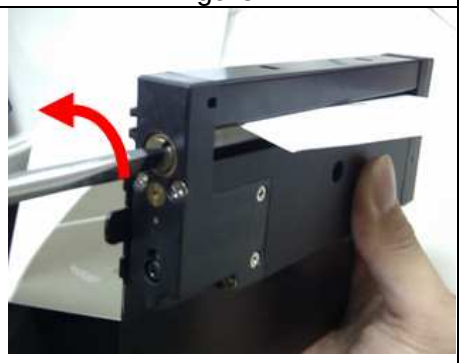


Figure 9.8

9.5. Cutter with paper jam

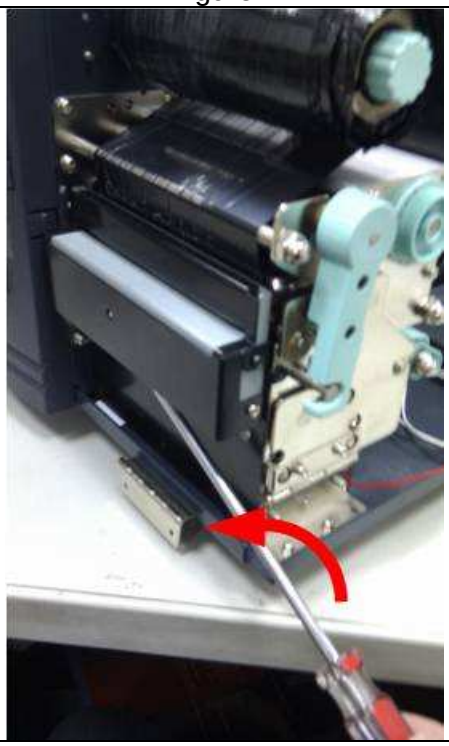
Rotary Cutter with paper jam

If there is paper jam inside rotary cutter, refer to Rotary Cutter Installation section to remove the rotary cutter. Check the Cam as marked in Figure 1, find a slotted screwdriver to turn counter-clockwise as Figure 2. During turning the Cam of cutter, release the blade from paper and them remove the paper from the cutter.

Figure 1	Figure 2
	

Guillotine Cutter with paper jam

If there is paper jam inside guillotine cutter, check in Figure 1 and find where the screw under guillotine cutter. It is to control cut actions of guillotine cutter. Find a Phillips screwdriver to lay down the blade by turning the screw counter-clockwise. Then paper can be removed from the cutter as Figure 2.

Figure 1	Figure 2
	

10. OPERATIONAL THEOREM

10.1. System block diagram

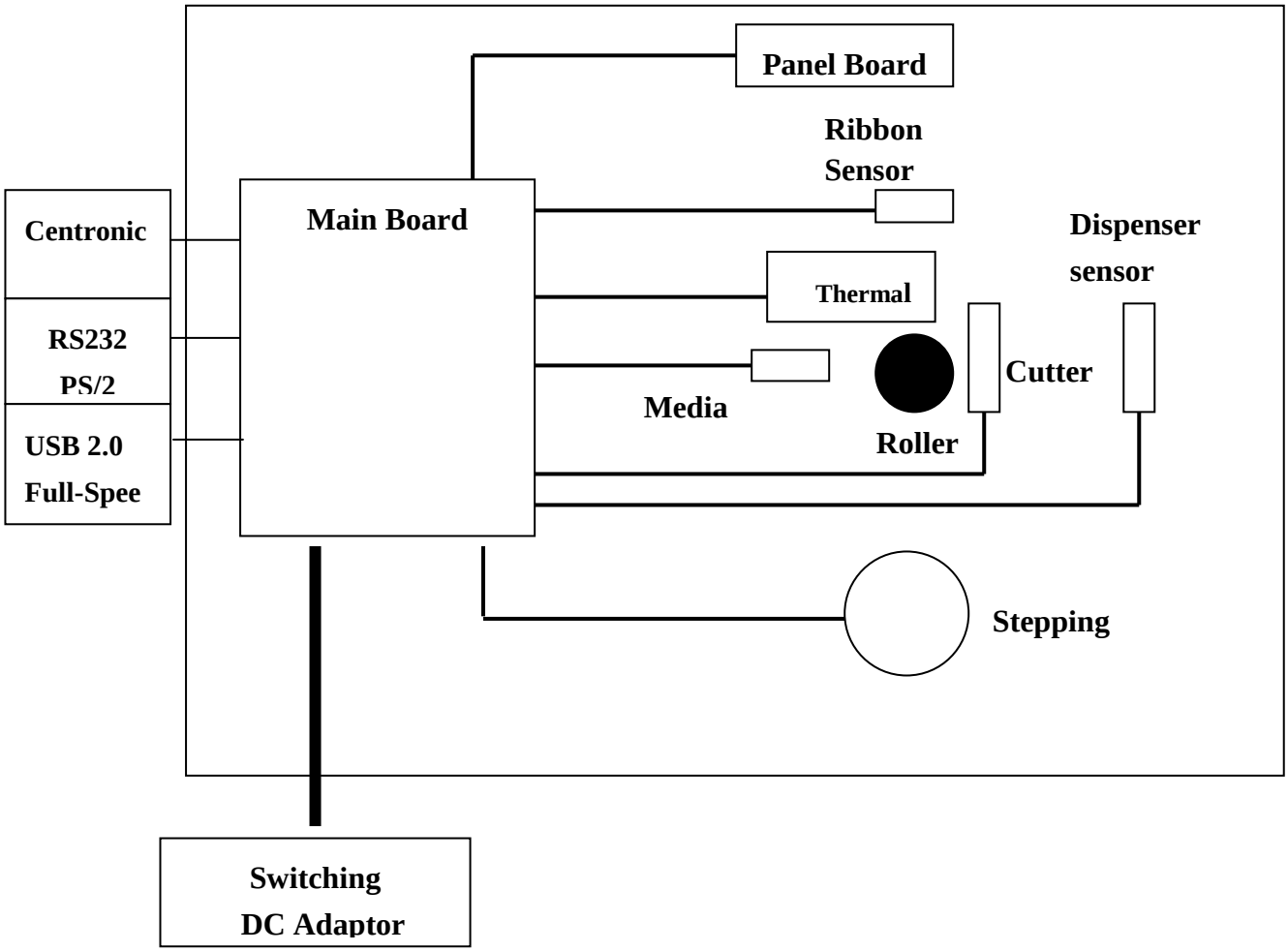


Figure 10.0

Main board

A four layers PCBA, consists of a micro-controller, FLASH ROM, SDRAM …… components required for the printing functions.

Panel board

A two layers PCBA, consist of a three push button switches, three LED indicators and one LCD module (option) for user's access, status and error indication.

Ribbon sensor

A one layer PCBA, consist of a reflective type object sensor designate for ribbon detection.

Media sensor
A one layer PCBA, consist of a reflective type object sensor designate for media/gap detection.

Thermal print head (TPH)
There are 864 heat elements consist in the TPH. Each heat element can be turn on/off individually.

Motor
A bipolar hybrid stepping motor is used for carrying label and ribbon during printing.

Dispenser and rewinder (option)
A mechanism designates for the automatic separation of label and take-up the backing paper.

Peeler sensor (option)
A one layer PCBA, consist of a see-through type object sensor designate to detect the printed label is removed or still exist.

Cutter assembly (option)
Consisting of a DC motor, a switch, gears and a rotary cutter. It is used for cutting the printed label automatically.

SPS (Switching Power supply)
The switching Power supply converts the input power (90VAC to 250VAC) to 24VDC. A 5 Amps fuse is also included in the power supply for over current protection.

Host controller
An equipment which can send the printing command to printer through RS232 serial port, Centronics parallel port or USB port. Usually a PC is connected.

10.2. Main board block diagram and description

General M/B Block Diagram

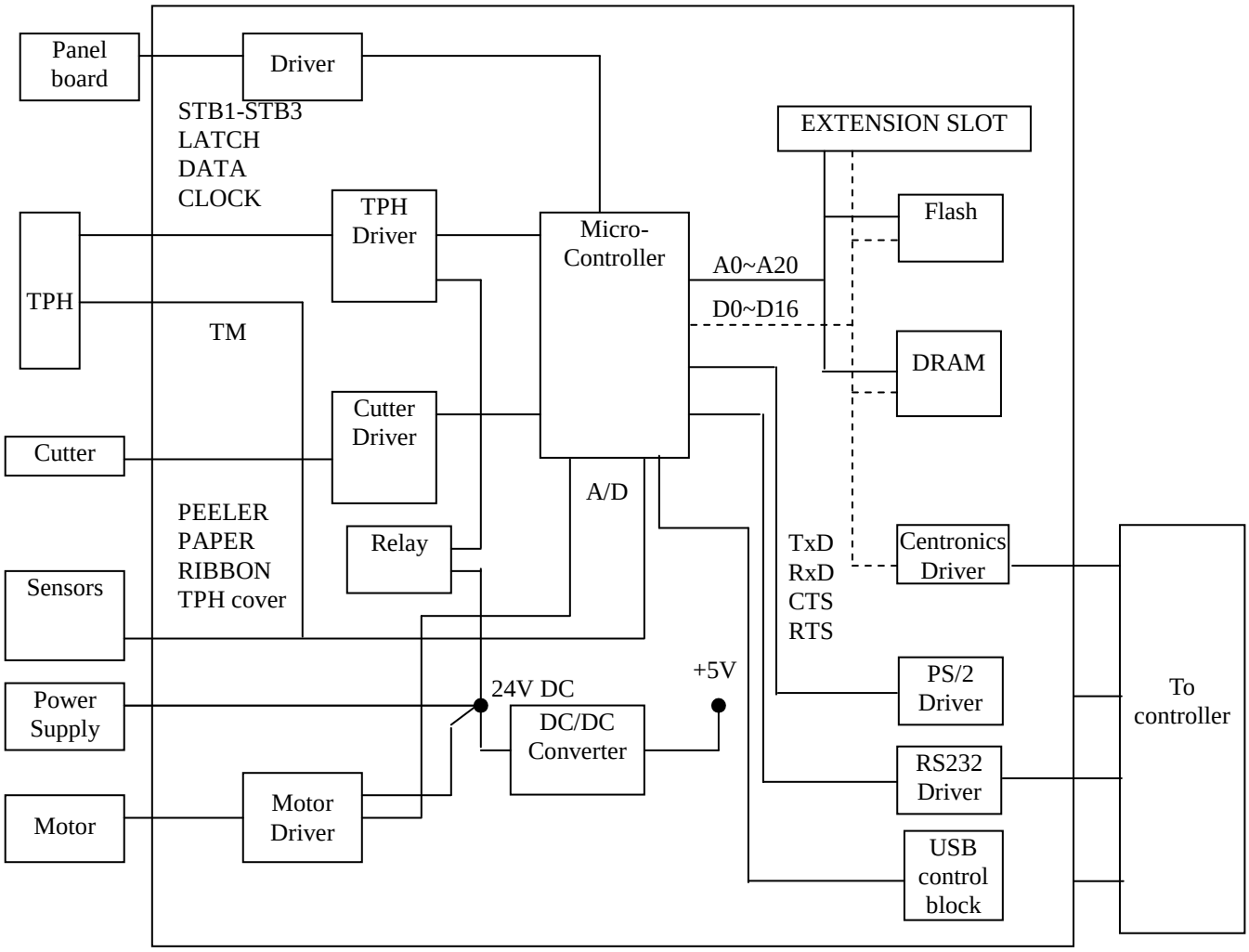


Figure 10.1

M/B with Ethernet Block Diagram

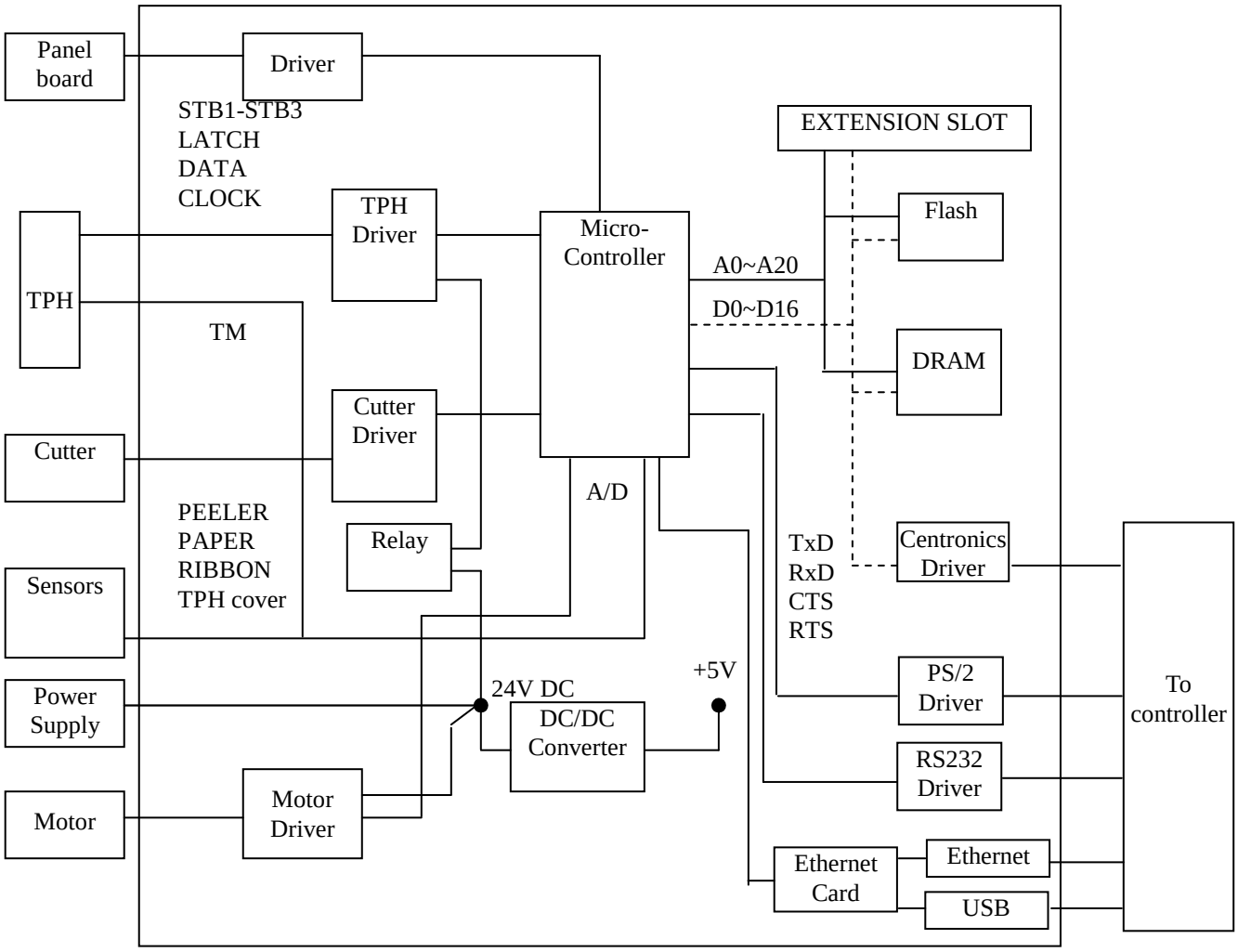


Figure 10.2

Micro-controller (U1)

A HITACHI 32 bit RISC processor is selected as the controller for this printer. The rich on-chip functions such as: Integrated timer, DMA controller, A/D convert, Serial communication interface, Pattern generator and I/O ports make the printer high performance and compact size.

FLASH memory (U22)

There is a 4M bytes FLASH on the main board to store the program, character and bar code fonts. It also saves some parameters which are stored permanently for printing, communication, ribbon and media detection and special controls.

SDRAM (U21)

A 8M bytes SDRAM is selected as the medium of storage for the printing image. In order to have fast access to the memory, 16 bits data bus width is selected.

Cutter baby board (JP15)

In order to prevent the cutter from stuck, a full bridge driver is used to control the cutter move both in forward and reverse direction.

RS232 driver/receiver (U15)

To convert the serial port signal to/from micro-controller to RS232 voltage level, a RS232 driver/receiver with integral charge pump circuit is used.

CENTRONICS interface (At Centronics board) (JP5)

Through these interface, all the data come from the host controller are latched then read by the Micro-controller.

DC/DC converter (U10, U11, U12, U13)

To convert the 24V input power to 24V, 21V, 17V (for motor), 5V, 3.3V, and 1.5V, to be used as the power supply for micro-controller, flash, SDRAM……etc.

TPH switch (Q4)

To prevent the TPH from being damaged by the unstable power condition when the printer is switched on, Q4 disconnected the power supply (24V) to the TPH. Q4 has to be activated before printing.

Extension slot (JP8)

This slot is designated for the connection of all optional extension modules (RTC Card and Add-on card).

Motor driver (U32)

In order to have enough toque and fast speed, two motor drivers are used on the main board; each one drives one phase of the bipolar stepper motor.

LED driver (U8)

To provides the sink current to turn on/off the LEDs on the Panel Board.

Keyboard interface (U16, U17, U18, U19, U20)

This interface is a bi-directional synchronize serial interface, fully compatible with

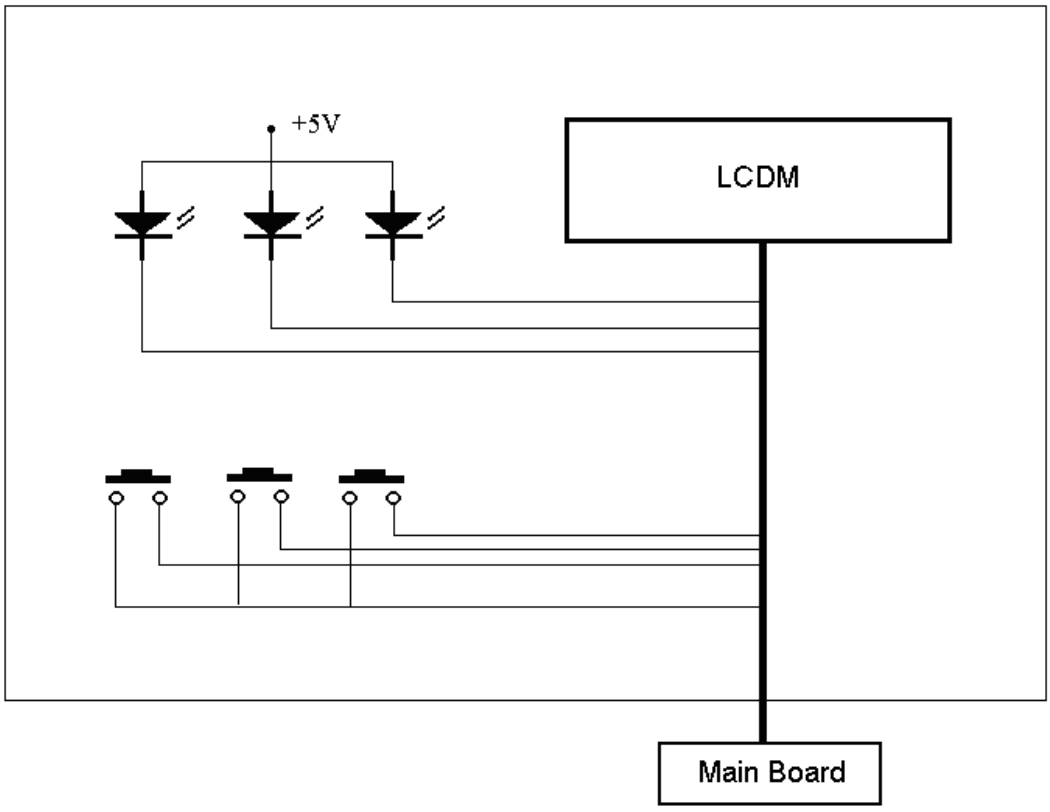
PS/2 keyboard interface of IBM PC. User may use a standard PS/2 keyboard to control the printer.

Ethernet Slot (JP1)

This slot is designate for the connection of all the optional extension modules. i.e.: Ethernet card or GPIO card.

10.3. Panel board block diagram and description

The Panel board consists of three push bottom switches, three LED indicators, and one 16X2 or 18X2 LCD display module for user's access, status and error indication.

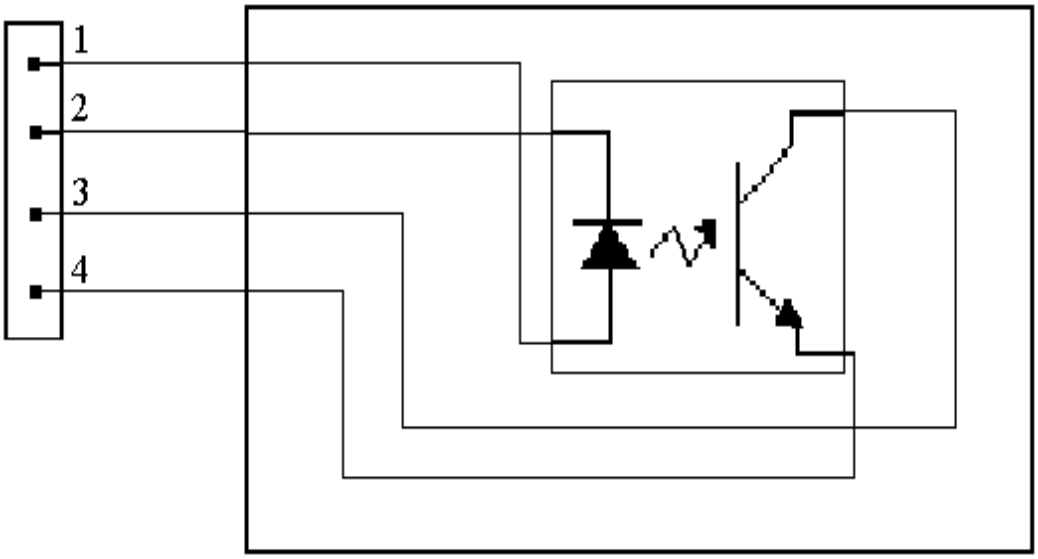


Panel board diagram

Figure 10.3

10.4. Sensor board diagram and description

The circuit of all the sensor board (Media sensor board, Ribbon sensor board and Peeler board) is identical. A reflective sensor is used for these purposes.



Sensor board diagram

Figure 10.4

10.5. Wiring diagram

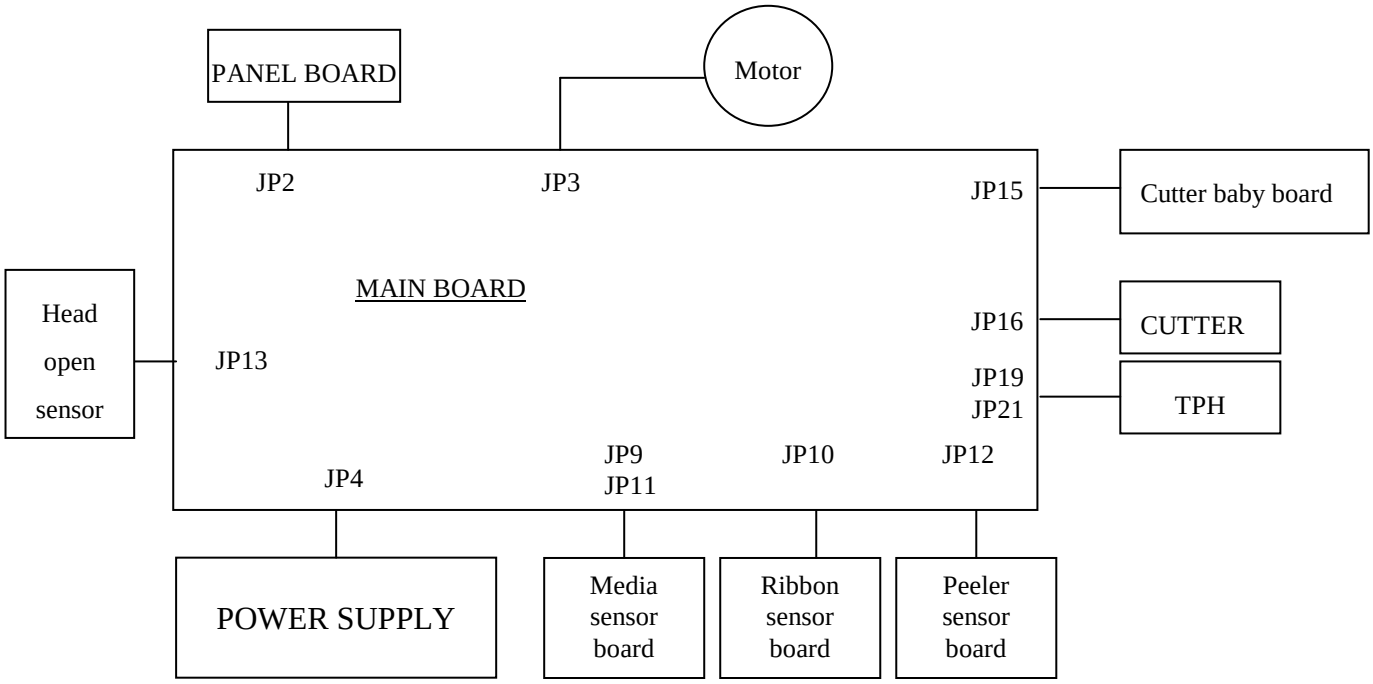


Figure 10.5

11. ETHERNET MODULE SPECIFICATION

Items	Contents
CPU	32-bits, ARM-922, 100MHz
RAM	8 MBytes (4 M * 16Bits)
ROM	4 MBytes
Ethernet	1. Port: RJ-45 Connector 2. LAN: 10/100 Mbps (Auto Detecting) 3. Protocol: ARP, IP, ICMP, UDP, TCP, HTTP, DHCP, rawTCP, LPR, IPP, SNMPTrap 4. Mode: TCP Server/Client, UDP Client 5. Setup: HTTP Browser Setup 6. Security: Setup Password
Digital I/O Port	Digital I/O * 5, USB 2.0 * 2
Firmware	Firmware On-lined Updated Via Ethernet/USB
LED Lamp	Power
Environment	Operating Temp. 0℃ ~ 70℃, Storage Temp. -20℃ ~ 50℃
Dimensions	67.8 * 64 * 17.2 mm (W * L * H)
Weight	32 g

12. ETHERNET PRINTER ADDITIONAL COMMANDS

Parameter types:

- None: no parameter is required
- Signed integer. e.g. +100 or –23
- Unsigned integer. e.g. 32
- Signed byte. Just one byte binary data. e.g.

  +3 is represented as 0x03(03H), and –1 as 0xff (0FFH).

Command	Description
<ESC>KIZA	*Enable/disable switch detection of print head open. *Syntax: <ESC>KIZAm *Parameter: m = 0; disable switch detection of print head open (default) m= 1; enable switch detection of print head open *If this function is enabling, label auto-calibration will be performed when the print head is closed.*
<ESC>KJA	Request printer status through Ethernet to show on web page Information about printer status is listed in TABLE1.
<ESC>KJB	End Job
<ESC>KJH	Enable printer to check if Ethernet card is alive or not in every second.
<ESC>KJI	Disable printer to check if Ethernet card is alive or not in every second.
<ESC>KJJ	Start Job
<ESC>KJK	*Reset printer function. *Syntax: <ESC>KJKm *Parameter: m=0 disable to reset function (default) m=1 enable to reset function *This command is for setting printer.*
<ESC>KJL	*SNMP broadcasted function setting. *Syntax: <ESC>KJLmnq *Parameter: m= 0, disable Ethernet card enquire for printer reset (default) m=1, enable Ethernet card enquire for printer reset. n= 0, disable SNMP function (default) n=1, enable SNMP function q= 1~9 seconds; the time interval which SNMP enquire printer status for. (default value:1) *This command is for Ethernet card to enquire Printer.*

<ESC>KJOETHERNET	*****Ethernet IP addresses *Syntax: <ESC>KJOETHERNETm,m,m,m,n,n,n,n,o,o,o,o,q,q,q,q,q,q *Parameter: “m,m,m,m,”: IP address “n,n,n,n,”: subnet mask “o,o,o,o,”: gateway “q,q,q,q,”: MAC address Parameters must be HEX values. *Example: IP address:192,168,0,42 (“m,m,m,m,”=”0xC0 0x2C 0xA8 0x2C 0x00 0x2C 0x2A”) *After setting Ethernet related setting or upgrading firmware, the Ethernet card will send this command to the printer. Print self-test can get the Ethernet related information.*
<ESC>KJPETHERNET	***** IP addresses setting. *Syntax: <ESC>KJPETHERNETa,a,a,a,b,b,b,b, *Parameter: “a,a,a,a,”: IP address “b,b,b,b,”: subnet mask Parameters must be HEX values. *Example: IP address:192,168,0,42 (“a,a,a,a,”=”0xC0,0xA8,0x00,0x2A) If “a,a,a,a,”=”0x00 0x2C 0x00 0x2C 0x00 0x2C 0x00 0x2C”, the setting will become DHCP (auto IP address). *You can send this command to Ethernet card through PC; print self-test can get the Ethernet related information.* *This command is for setting Ethernet card.*
<ESC>KJQETHERNET	*****Ethernet card gateway setting. *Syntax: <ESC>KJQETHERNETc,c,c,c, *Parameter: “c,c,c,c,”: Ethernet card gateway Parameters must be HEX values. *Example: Gateway:255,255,248,0 (“c,c,c,c,”=”0xFF 0x2C 0XFF 0x2C 0xF8 0x2C 0x00”) *You can send this command to Ethernet card through PC; print self-test can get the Ethernet related information.*

	This command is for setting Ethernet card.
<ESC>KJR	***** Ethernet card version. *Syntax: <ESC>KJRm,nn *Example: <ESC>KJR5,21; Ethernet card version is 5,21. *After upgrading firmware, this command will be sent from Ethernet card to the printer. You can print self-test to get Ethernet card version.*
<ESC>KJS	Start Page
<ESC>KJT	End Page
<ESC>KJU	*****Ethernet SNMP function *Syntax: <ESC>KJUmn m=0, disable Ethernet SNMP function (default) m=1, enable Ethernet SNMP function n= 1~9 seconds; the time interval which SNMP enquire printer status for. (default value:1) If n=0x0D, this indicates n=1 second. In other words, if n is not defined, n=1 second. *This command is for setting printer.*
<ESC>KJV	Printer aging test
<ESC>KJW	*****Enquire emulation function *Syntax: <ESC>KJWmnop m= total emulation items; m=3~9(0x33~0x39) *Maybe printer has more emulation in the future.* n= PPLA emulation; n=0(0x30), PPLA emulation is not exist n=1(0x31), PPLA emulation is used. o= PPLB emulation; o=0(0x30), PPLB emulation is not exist o=1(0x31), PPLB emulation is used. p= PPLZ emulation; p=0(0x30), PPLZ emulation is not exist p=1(0x31), PPLZ emulation is used. *If user sends <esc>KJW to enquire emulation through Ethernet card, the printer returns <esc>KJW3011; This represents printer supports 3 emulations but only PPLB and PPLZ are in printer now.*
<ESC>KJX	Make printer LEDs blink after the following conditions: 1. Finishing upgrade Ethernet card. 2. Complete IP address, subnet mask and gateway setting.
<ESC>KJYA	***** IP Address setting

<table>
<tr><td></td><td>(Data transfer form printer to Ethernet card)
*Syntax: <ESC>KJYAa,a,a,a,b,b,b,b,c,c,c,c
*Parameter: “a,a,a,a,”: IP address
“b,b,b,b,”: subnet mask
“c,c,c,c”: Ethernet card gateway
Parameters must be HEX values.
*Example:
IP address:192,168,0,42
(“a,a,a,a,”=”0xC0 0x2C 0xA8 0x2C 0x00 0x2C 0x2A 0x2C”)

If “a,a,a,a,”=”0x00 0x2C 0x00 0x2C 0x00 0x2C 0x00 0x2C”, the setting will become DHCP (auto IP address).</td></tr>
<tr><td><ESC>KJYB</td><td>* IP Address setting
(Communication between PC and printer)
<ESC>KJYBm,a,a,a,a[,b,b,b,b,c,c,c,c]
*Parameter:
Parameter m is setting mode; all parameters of address must be in HEX format.
<table>
<tr><th>Parameter</th><th>m</th><th>a,a,a,a</th><th>b,b,b,b</th><th>c,c,c,c</th></tr>
<tr><td rowspan="7">Mode</td><td>0x31</td><td>Gateway</td><td>Ignored</td><td>Ignored</td></tr>
<tr><td>0x32</td><td>Subnet Mask</td><td>Ignored</td><td>Ignored</td></tr>
<tr><td>0x33</td><td>Subnet Mask</td><td>Gateway</td><td>Ignored</td></tr>
<tr><td>0x34</td><td>IP Address</td><td>Ignored</td><td>Ignored</td></tr>
<tr><td>0x35</td><td>IP Address</td><td>Gateway</td><td>Ignored</td></tr>
<tr><td>0x36</td><td>IP Address</td><td>Subnet Mask</td><td>Ignored</td></tr>
<tr><td>0x37</td><td>IP Address</td><td>Subnet Mask</td><td>Gateway</td></tr>
</table></td></tr>
</table>

TABLE1: PARAMETER ID

Parameter	ID (4 bytes)	Length (bytes)	Setting
All Parameter	0	0	
Firmware Version	2	24	(Max. to 24 characters)
Printer Resolution	5	4	0: 203 4:100 1: 300

			2: 600 3: 900	
Standard RAM Size	7	4	4GB	
Available RAM Size	8	4	4GB	
Standard Flash Memory Size	9	4	0: 2MB 1: 1MB 2: 4MB 3. 8MB 4. 16MB 5. 32MB 6: 64MB 7: 128MB 8: 256MB 9: 512MB	A: 1GB B: 2GB C: 4GB D: 8GB E: 16GB
Available Flash Memory Size	10	4	4GB	
DT/ TT	11	4	0: DT mode 1: TT mode	
Media Sensor Type	12	4	0: Reflective 1: See Through1 2: See Through2	
Print Mode	14	4	00000000: Normal 10000000: Backfeed Enable 20000000: Cutter Enable 30000000:Peeler Enable	
Cut Offset	16	4		
Peel Offset	17	4		
Vertical Offset	18	4		
Horizontal Offset	19	4		
TPH Offset	20	4		
Print Width	21	4	10 ~ 108 (mm)	
Print Length	22	4	100 (inches)	
Darkness	23	4	1 ~ 15 (0~30)	
Speed	24	4	1 ~ 12	

Inter Font Symbol Set	27	4	ab00 total: 4bytes a: 1=7 bit b: 1~19 0=8 bit (see table2 and show symbol set)
Total Printed Label NO.	28	4	(Only F20L have)
Total Printed Label Length	29	4	
Labelless CAL. Result	31	4	abcd : total 4 bytes ab: reflective empty value cd: see through empty value
Label Size	32	4	
Origin Coordination Shift	33	4	
External Card	34	4	RTC card :0x3000000 Chinese font:0x2010000 Taiwan font :0x2020000 Korean font :0x2040000 Japanese font 0x2080000
Flash Module	36	4	0:External 1:Internal 2: Internal
Serial COMM.	40	8	abcd 0000 total: 8 bytes a (Baud Rate) b (Parity) c (Data Bit) d (Stop Bit) a: 0: 9600 1: 2400 2: 4800 3: 19200 4: 38400 5: 1200 6: 115200 7: 57600 8: 600

			b: 0: NONE 1: EVEN 2: ODD c: 0: 8 BITS 1: 7 BITS d: 0: 1 BIT 1: 2 BITS

TABLE 2

8 bit data (a=0)	Symbol Set (Code page)	7 bit data (a=1)	Symbol set
b=0	English (437)	b=0	USASCII
b=1	Latin 1 (850)	b=1	British
b=2	Slavic (852)	b=2	German
b=3	Portugal (860)	b=3	French
b=4	Canadian/French (863)	b=4	Danish
b=5	Nordic (865)	b=5	Italian
b=6	Turkish (857)	b=6	Spanish
b=7	Icelandic (861)	b=7	Swedish
b=8	Hebrew (862)	b=8	Swiss
b=9	Cyrillic (855)		
b=10	Cyrillic CIS 1(866)		
b=11	Greek (737)		
b=12	Greek 1 (851)		
b=13	Greek 2 (869)		
b=14	Latin 1 (1252)		
b=15	Latin 2 (1250)		
b=16	Cyrillic (1251)		
b=17	Greek (1253)		
b=18	Turkish (1254)		
b=19	Hebrew (1255)		

13. ETHERNET PRINTER STATUS/ACTIVITY INDICATORS

13.1 Ethernet Module Status/Activity indicators

LED Status	Description	
Both Off	No Ethernet link detected.	
Green	Speed LED	On: 100 Mbps link Off: 10 Mbps link
Amber	Link/Activity LED	On: link up Off: link down Flash: activity

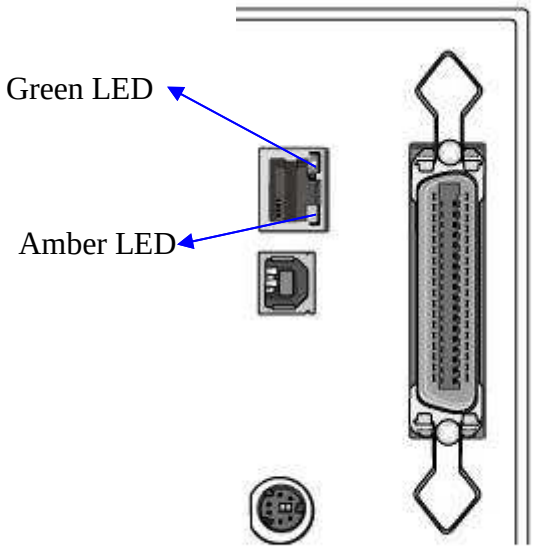


Figure 13.1

13.2 Ethernet Printer Status/Activity indicators

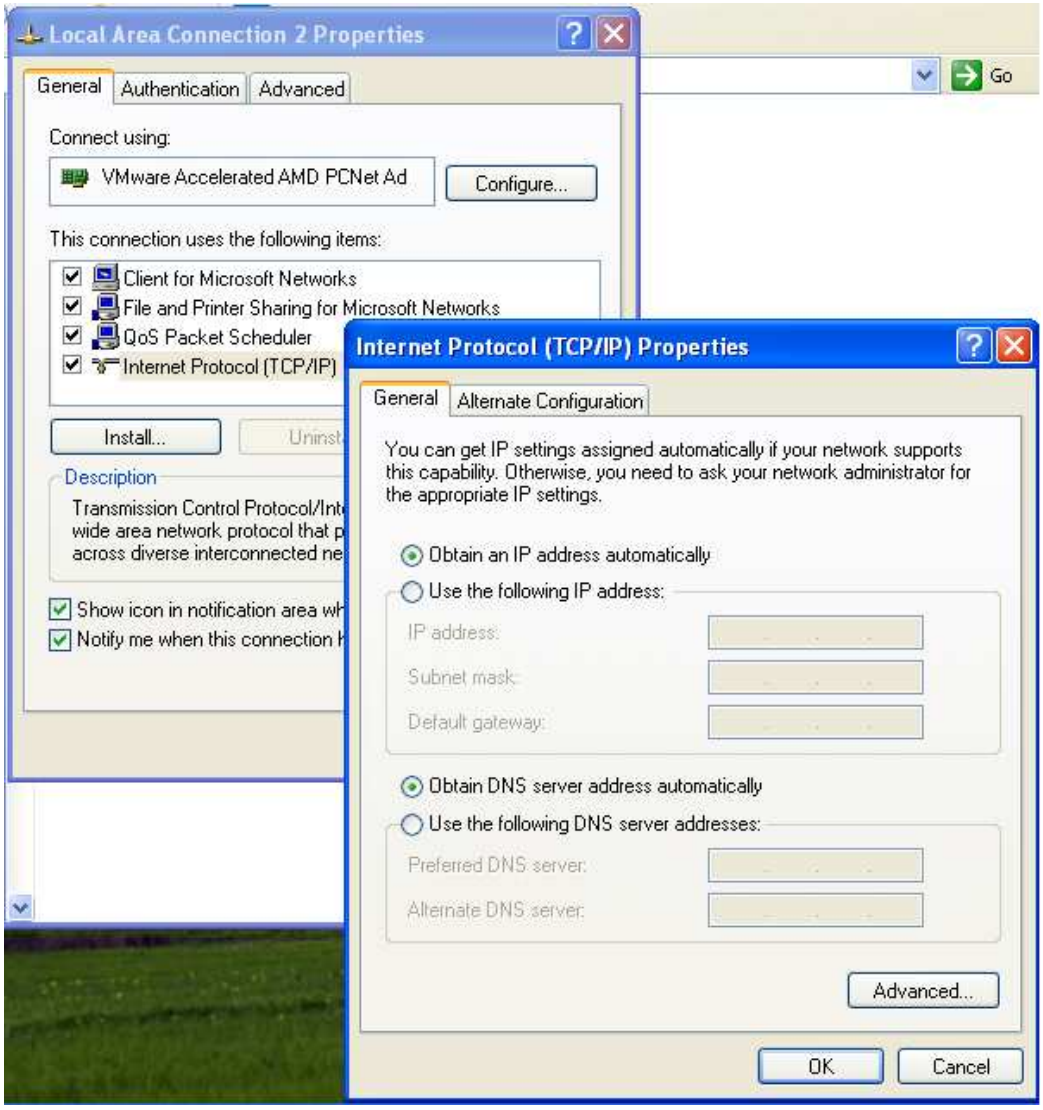
LED Status	Blinking LED	Description
Wait for Ready	REAEY	The printer waits for printer ready. It will take about 20 seconds for ready.

14. HOW TO GET IP ADDRESS

Printer can get IP addresses from the following modes:

A. Using router or similar device to assign IP address to printer

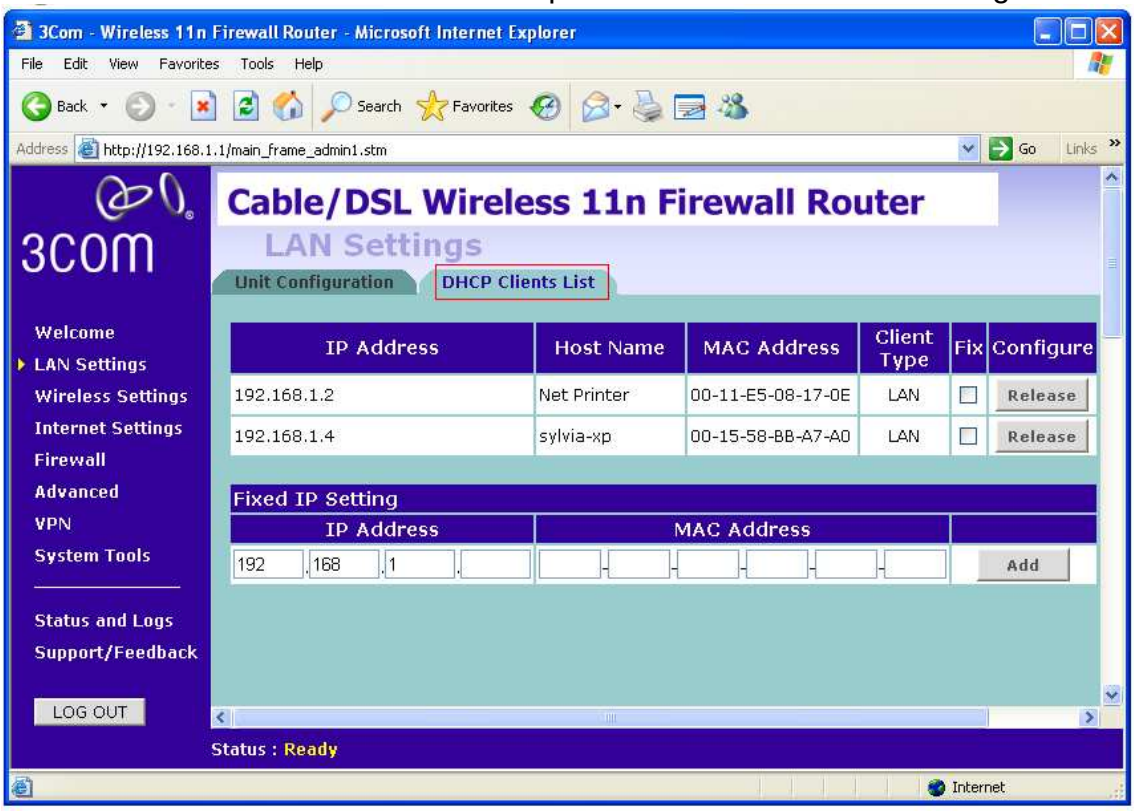
1. Connect PC and printer individually with Internet cable to Router LAN port.
2. In **Internet Protocol (TCP/IP) Properties**, “IP address” and “DNS server address” must be set as automatically.*(Note: Don’t forget to take down the related information of static IP address before setting, if PC is assigned static IP address.)*



3. Search IP address which Router assigned to printer. Take Router (3COM WL-602) for example: run the internet browser and type default IP address to open the route's homepage*(The default IP address of this router's homepage is http://192.168.1.1)*

When turn on the printer, READY LED will blink and user must wait for about 20 seconds for ready.

4. First click **Log in** to enter main menu, then click **LAN setting** to enter system status menu.
5. Click **DHCP Clients List** will see the printer IP addresses which assign to PC.

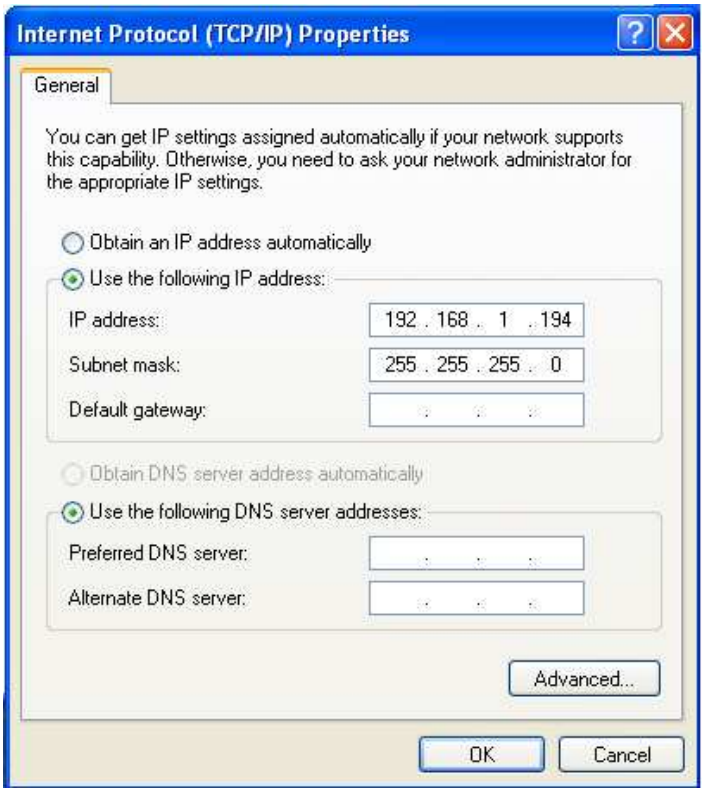


Note: *when the printer gets assigned IP address, user is suggested not to*

change the IP address easily, or this step will delay the time for printer ready.

B. Use the Ethernet card static IP address

Connect printer and PC with cable and turn on the printer for about 1 minute. The printer will get the default IP addresses 192.168.1.100 by itself. The default IP address can be modified, and the former 3 sections of IP address for PC should be the same with printer's (ex. 192.168.1.xxx) and subnet mask should be 255.255.255.0 to connect correctly.

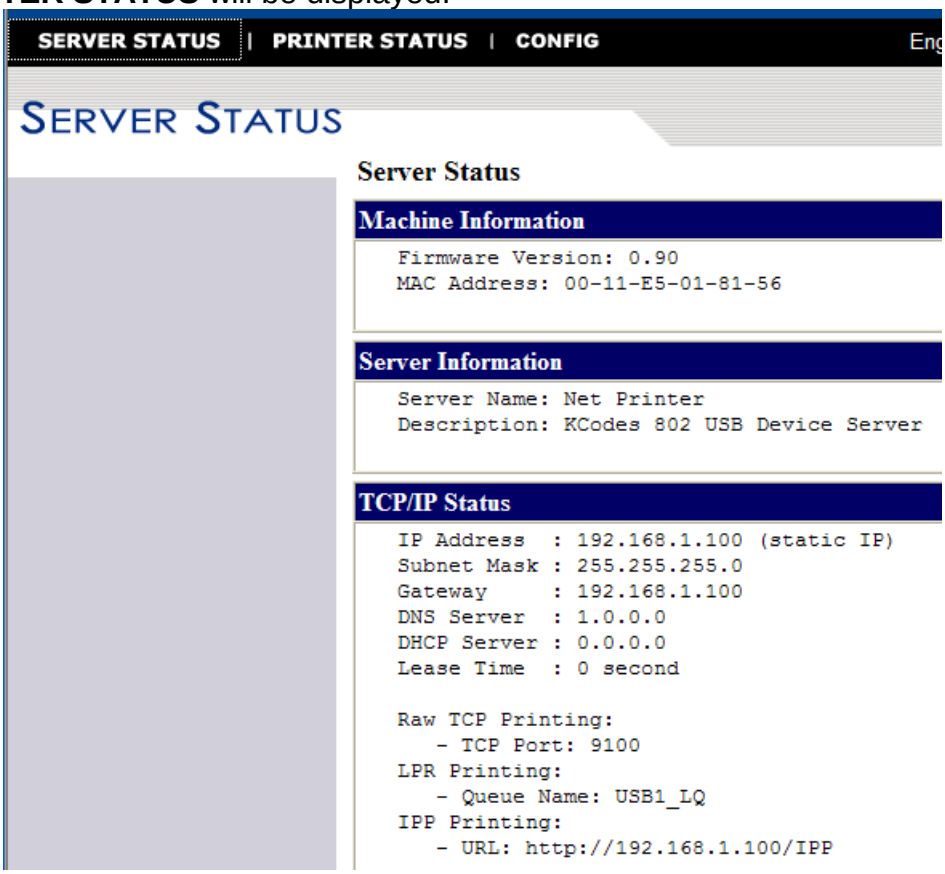


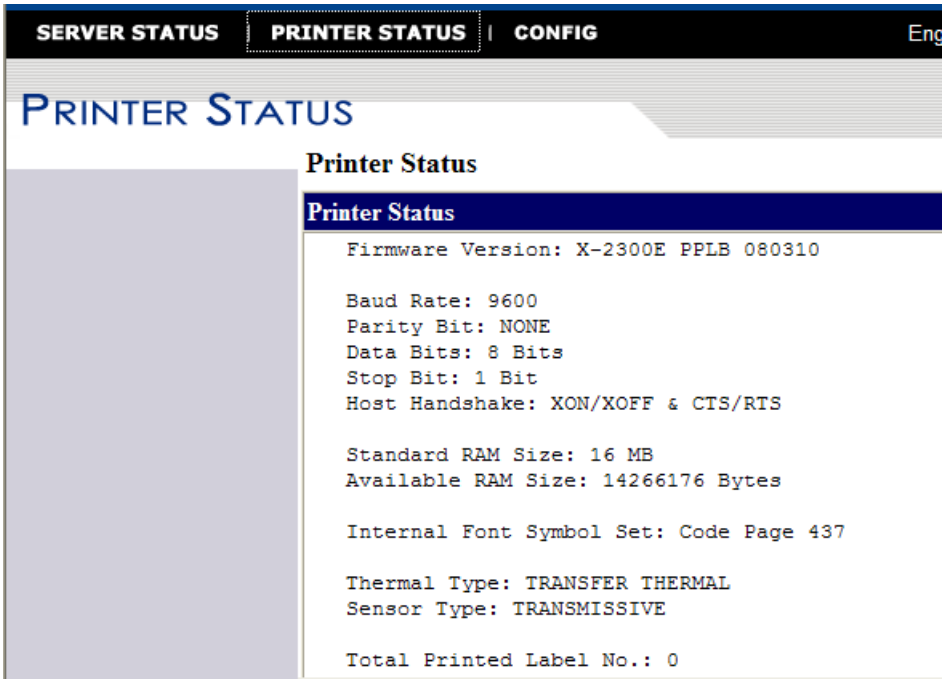
C. Send additional commands to set IP address through other communication interface (USB, RS-232 etc.)

<ESC>KJPETHERNET
<ESC>KJQETHERNET

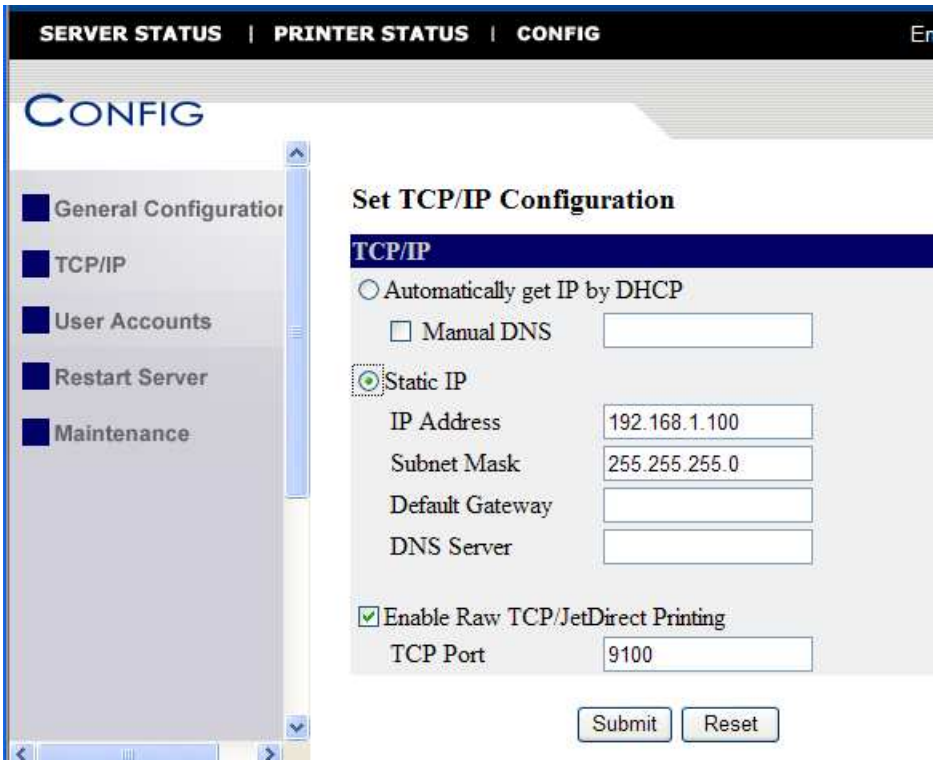
15. ETHERNET INFORMATION AND SETTING

1. Run a browser and key in the printer IP address then **SERVER STATUS** and **PRINTER STATUS** will be displayed.

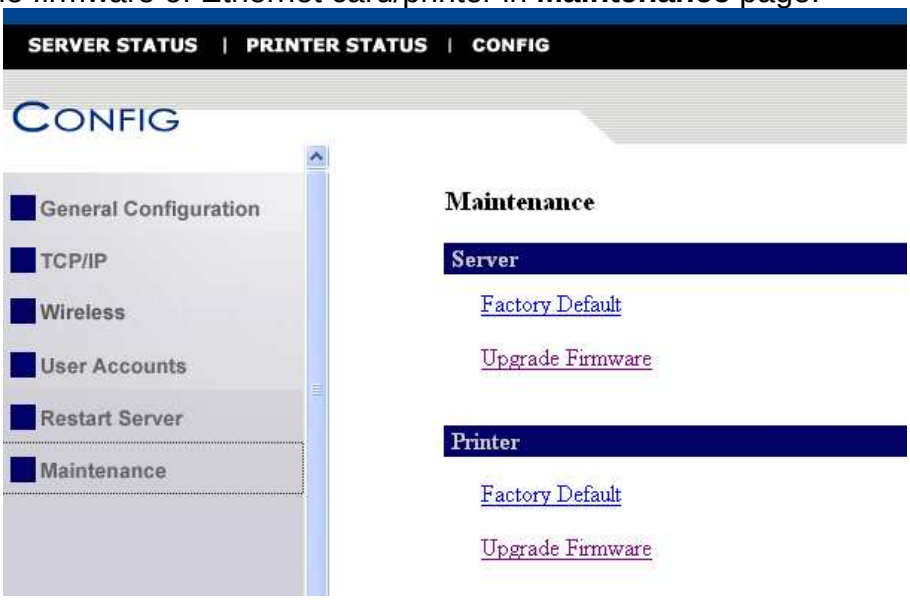




2. Set the way that Ethernet card assign IP address to PC and related setting in "CONFIG" - **TCP/IP Configuration** page.



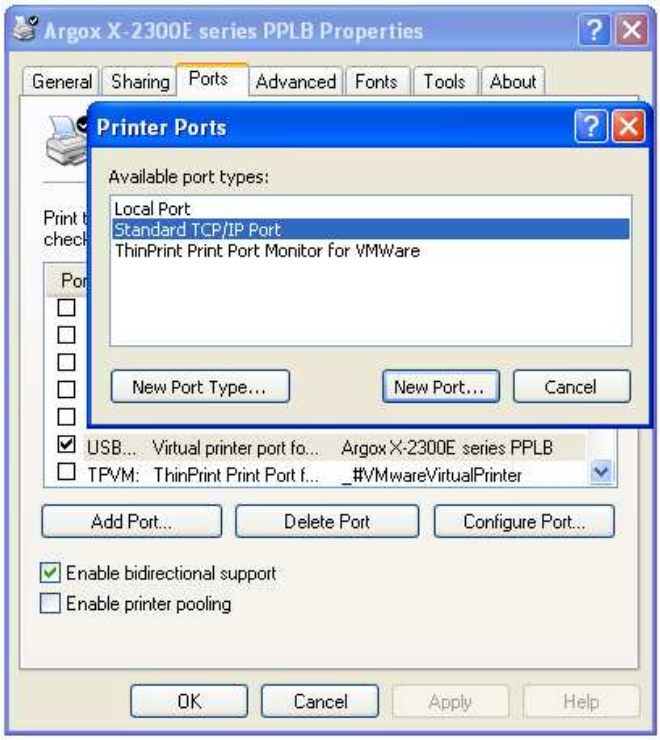
3. Upgrade firmware of Ethernet card/printer in **Maintenance** page.



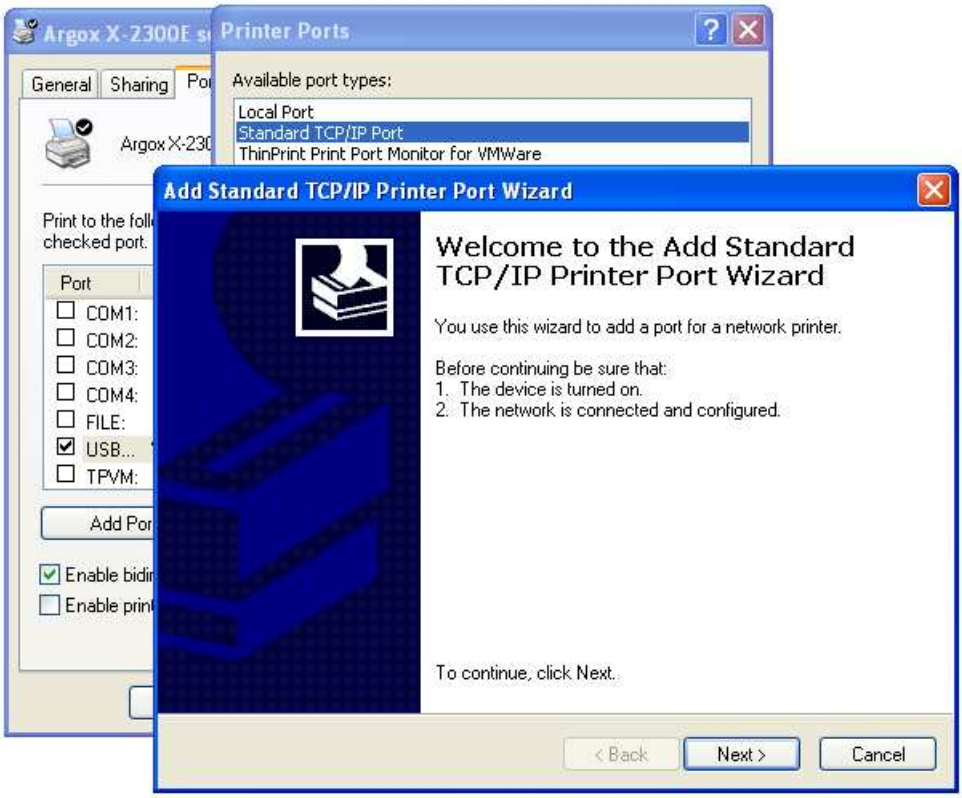
- The accumulative time will be recount if the printer shut down. *(You can get this information above from default webpage or else webpage.)*
- Any status monitor (include Bartender status monitor) must be closed when upgrading firmware of Ethernet card/printer.
- Upgrading Ethernet module firmware or changing IP address, restart the printer and wait for about 1 minute; you will get the latest Ethernet module firmware version or IP address by printing self-test.

16. ETHERNET PORT SETTING

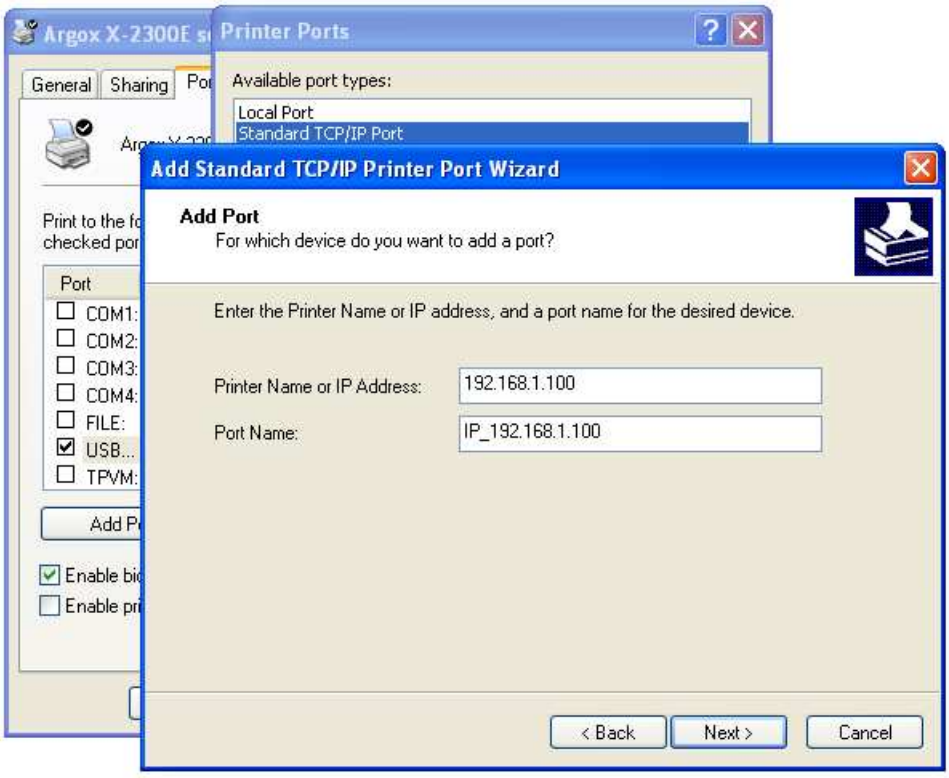
1. Mouse right-click button on chosen printer, then click **Printer properties** and select **Ports** tab**.**
2. Add **New Port** and select **Standard TCP/IP Port.**



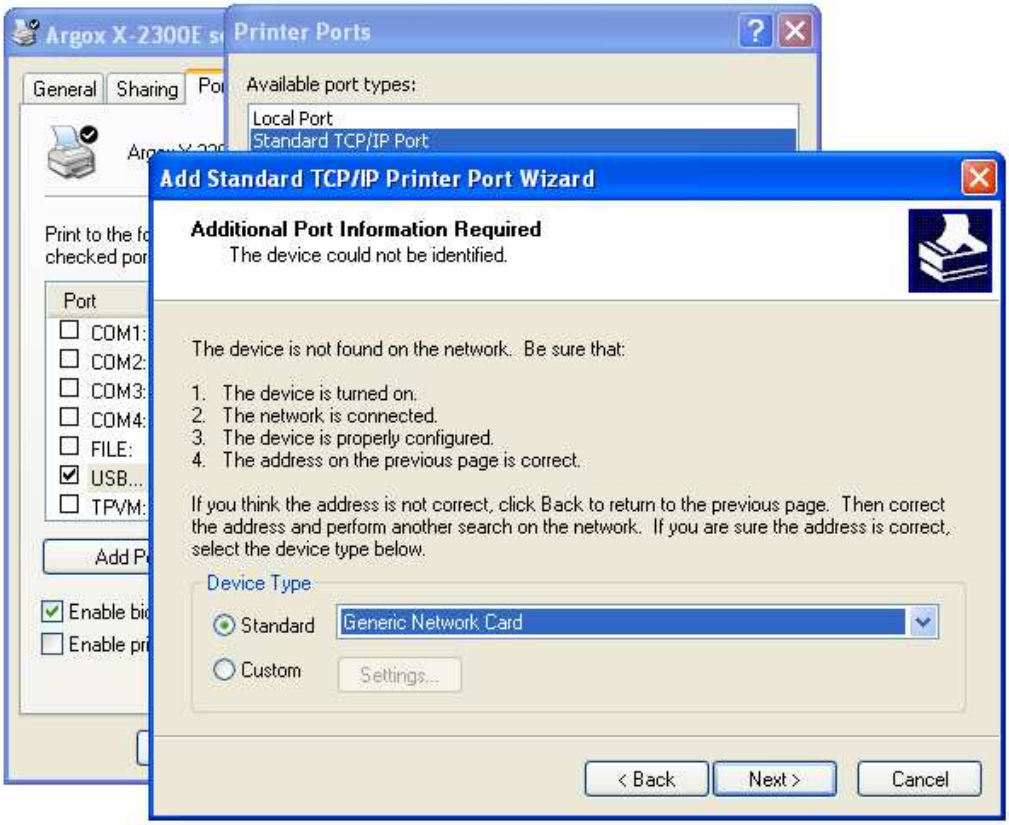
3. After clicking **New Port**, **Add Standard TCP/IP Printer Port Wizard** windows will show. Then press the **Next** button on the windows.



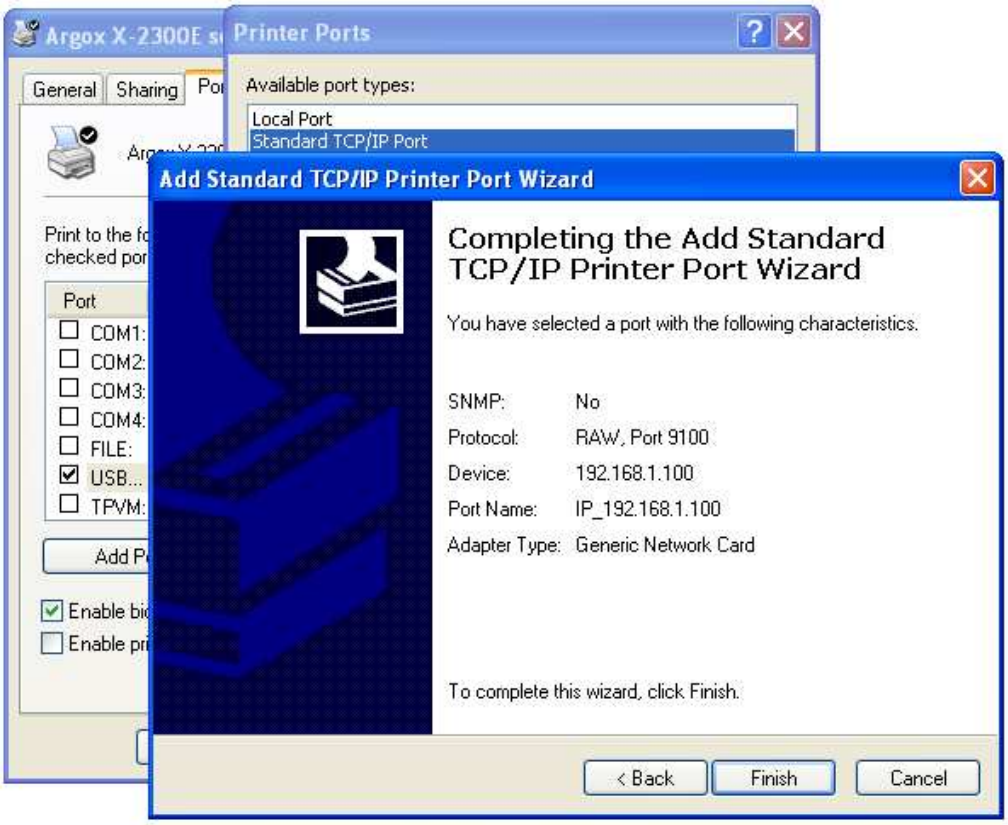
4. Input IP address then press the **Next** button.



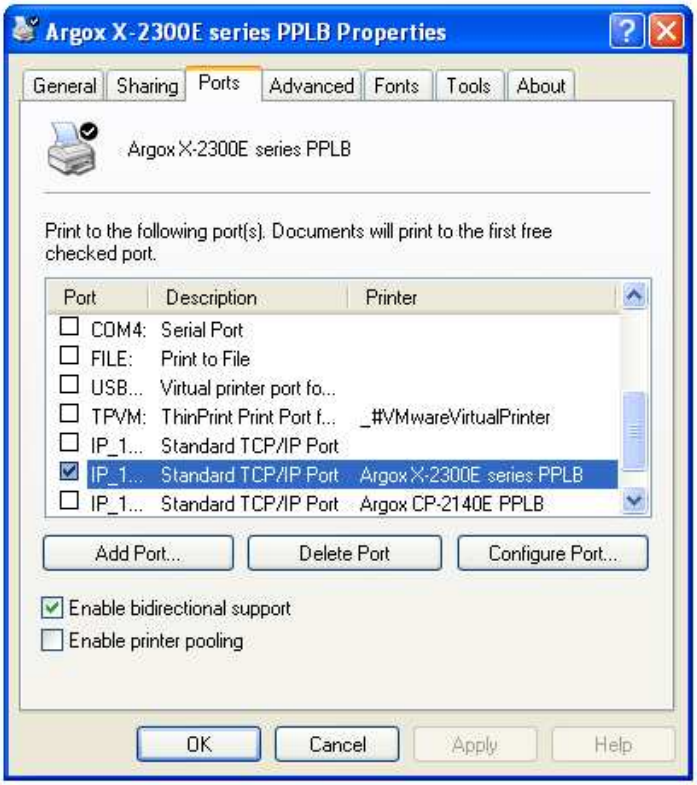
5. **Add Standard TCP/IP Printer Port Wizard** windows show and choose **Device Type** as **Standard** then press the **Next** button.



6. Press the **Finish** button to complete the setting.

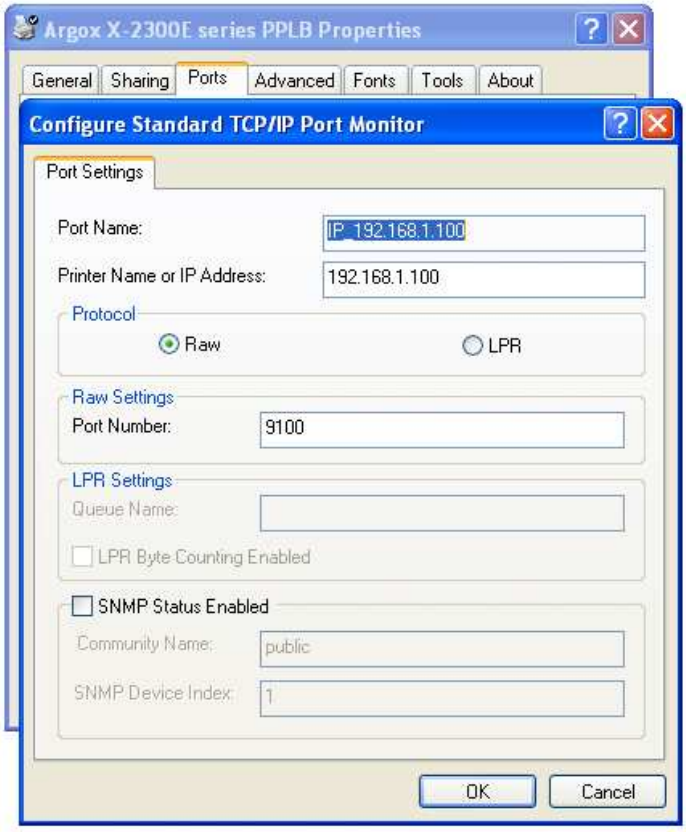


7. Back to the printer properties windows and set related setting.

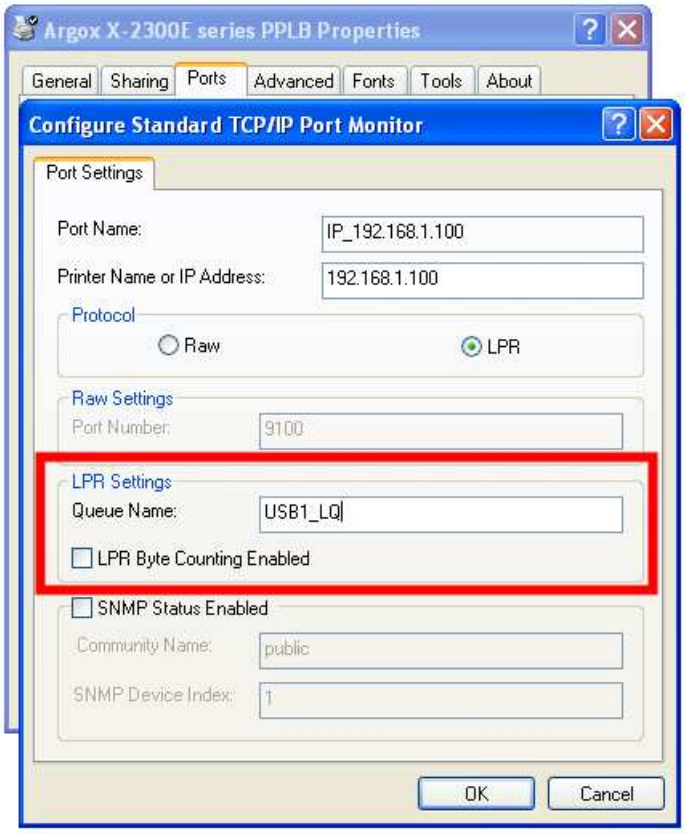


8. After choosing **Raw(R)** or **LPR (L)** in **Protocol** frame the setting will be completed.

8-1 The setting of **Raw(R)** is as bellow:

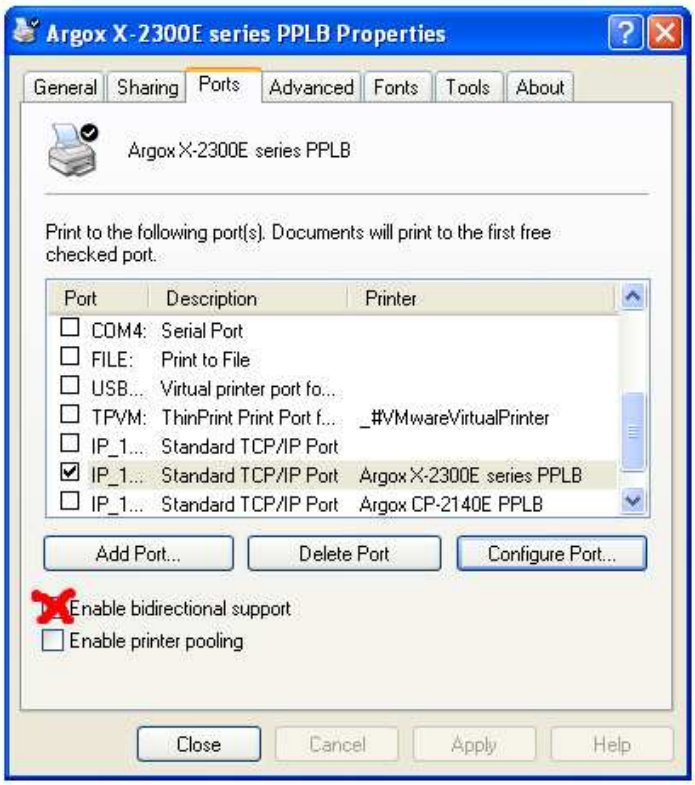


8-2 The setting of **LPR (L)** is as bellow:



Note:

Because LPR (L) doesn't support bidirectional function, you must disable bidirectional function.



9. LPR setting is completed.

17. RESET ETHERNET CARD

When IP address setting is completed, user must restart the printer to check IP address on webpage. If the printer can't get correct IP address, please reset or reboot Ethernet Card.

Reset Ethernet Card Procedure

1. Take off all the printer covers.
2. Turn on printer and then press the Ethernet card RESET button for 2 seconds.
3. Restart the printer.

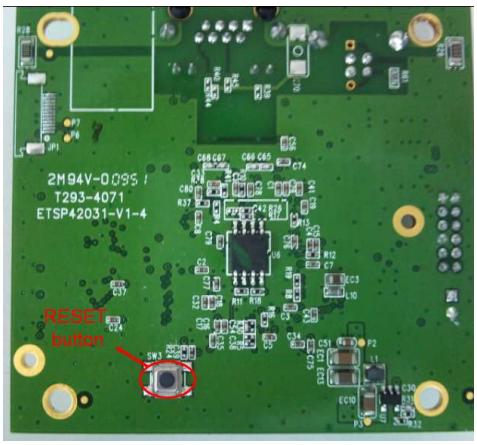


Figure 17.1

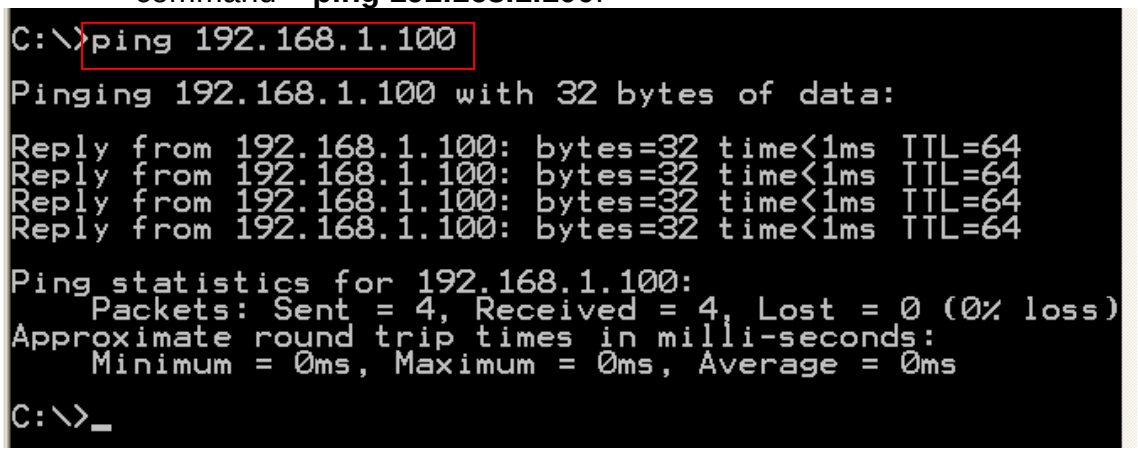
18. REBOOT ETHERNET CARD

When Ethernet card is abnormal, we can recover it by following steps.

1. Take off all covers of the printer.

2. Press and hold the RESET button of Ethernet card (see Figure 17.1), and then turn on the printer. After 3 seconds, release the button. At this time, the Ethernet card enters **boot loader** and Green LED shows only.

3. It can be checked if Ethernet card enter boot loader or not by sending the DOS command – **ping 192.168.1.100**.

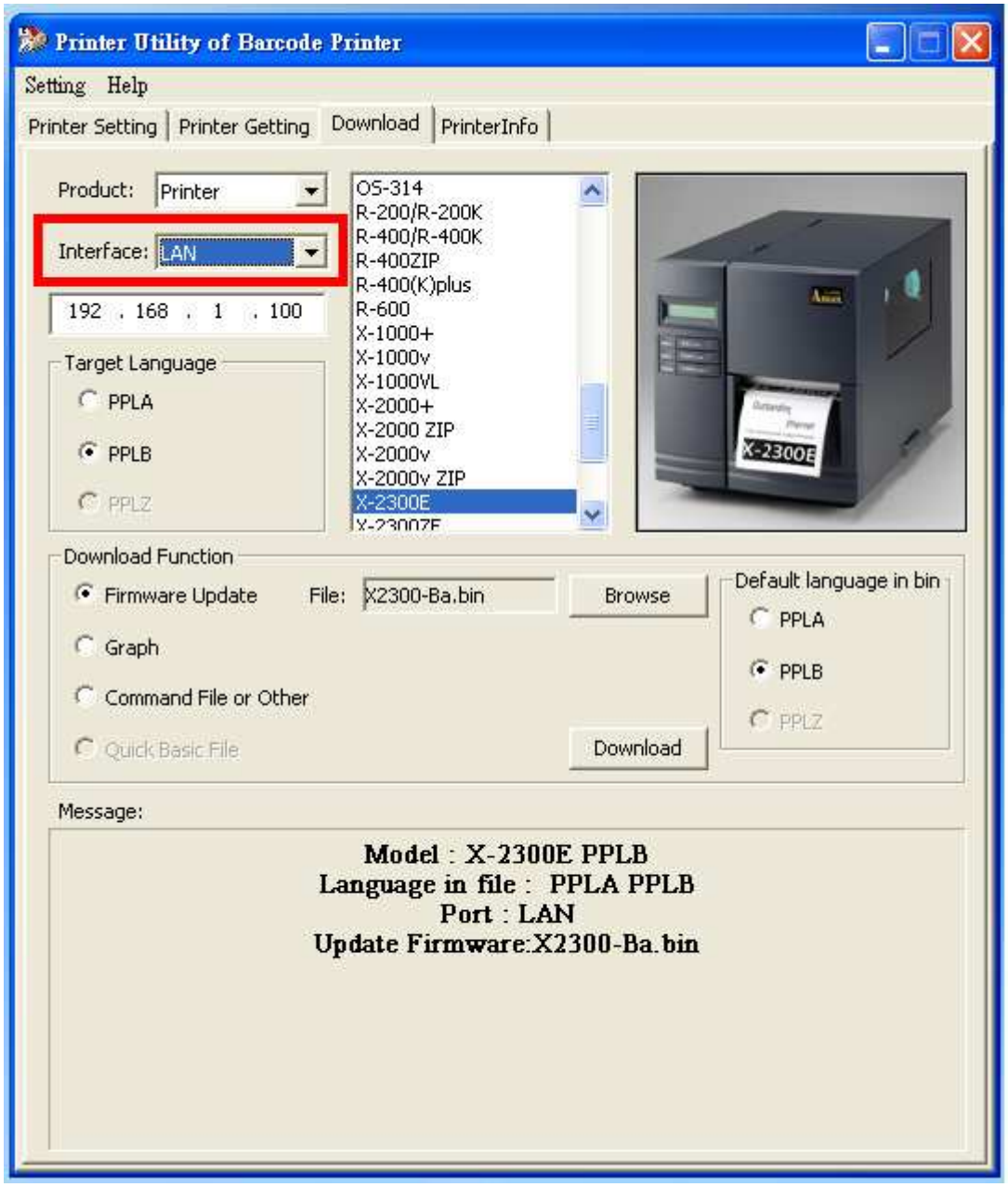


4. Download Ethernet card firmware by sending **tftp –i 192.168.1.100 put ARGOX_v0.71**, and wait for 40 seconds to let Ethernet card restart automatically until Amber LED blinks and Green LED shows. (**ARGOX_v0.71** is Ethernet card firmware and should be placed in corresponding work directory).

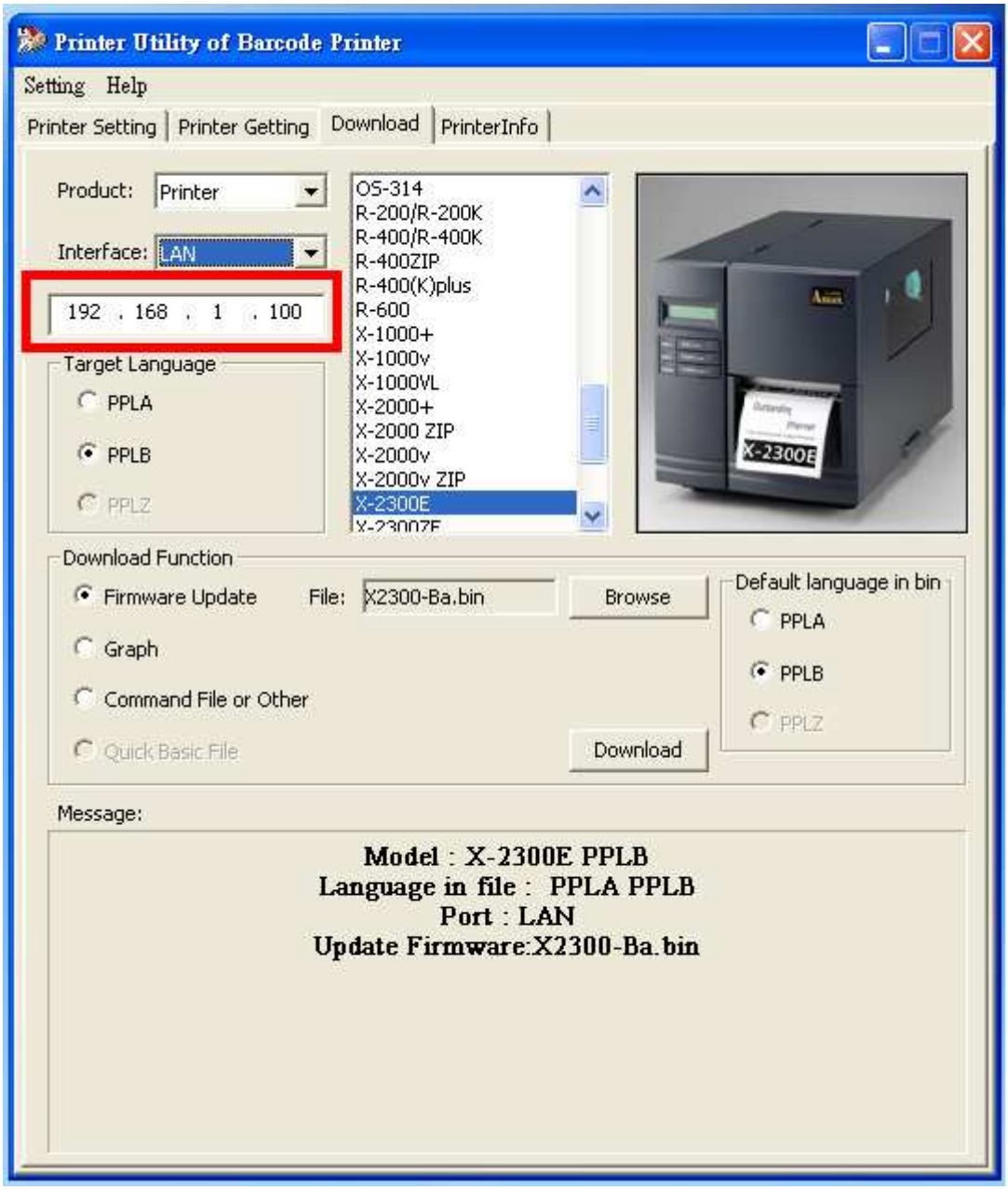
19. PRINTER UTILITY

19.1. Download/Upgrade firmware

1. Choose what printer you want to upgrade firmware or send files, then select interface as LAN.



2. Input 「IP Address」. At this time, you can upgrade firmware or send files likes operating other printers.



19.2. Printer setting

If there is any error occurs, computers will receive error message though the Router at the same time. (Fig.19.2.1)

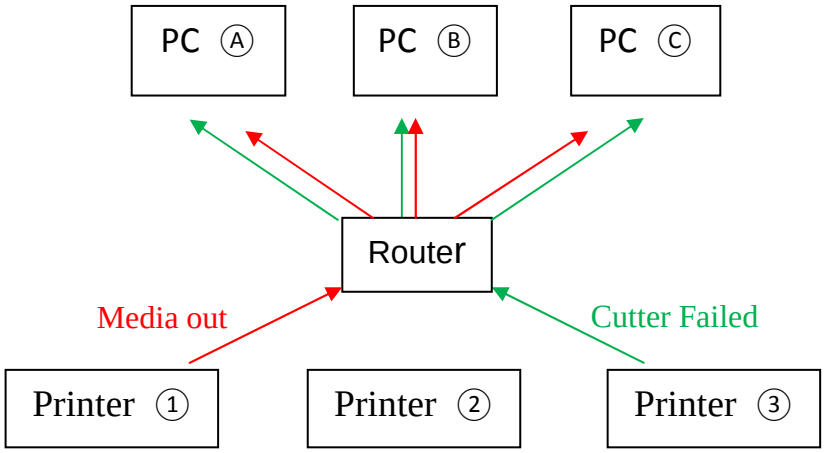


Fig.19.2.1

If printer connects PC with Internet cable directly (PC IP address must be set first); turn on printer, printer will search IP address automatically, then printer will ready to print after 1 minute. (Fig.19.2.2)

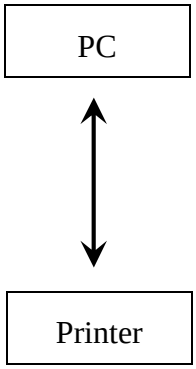
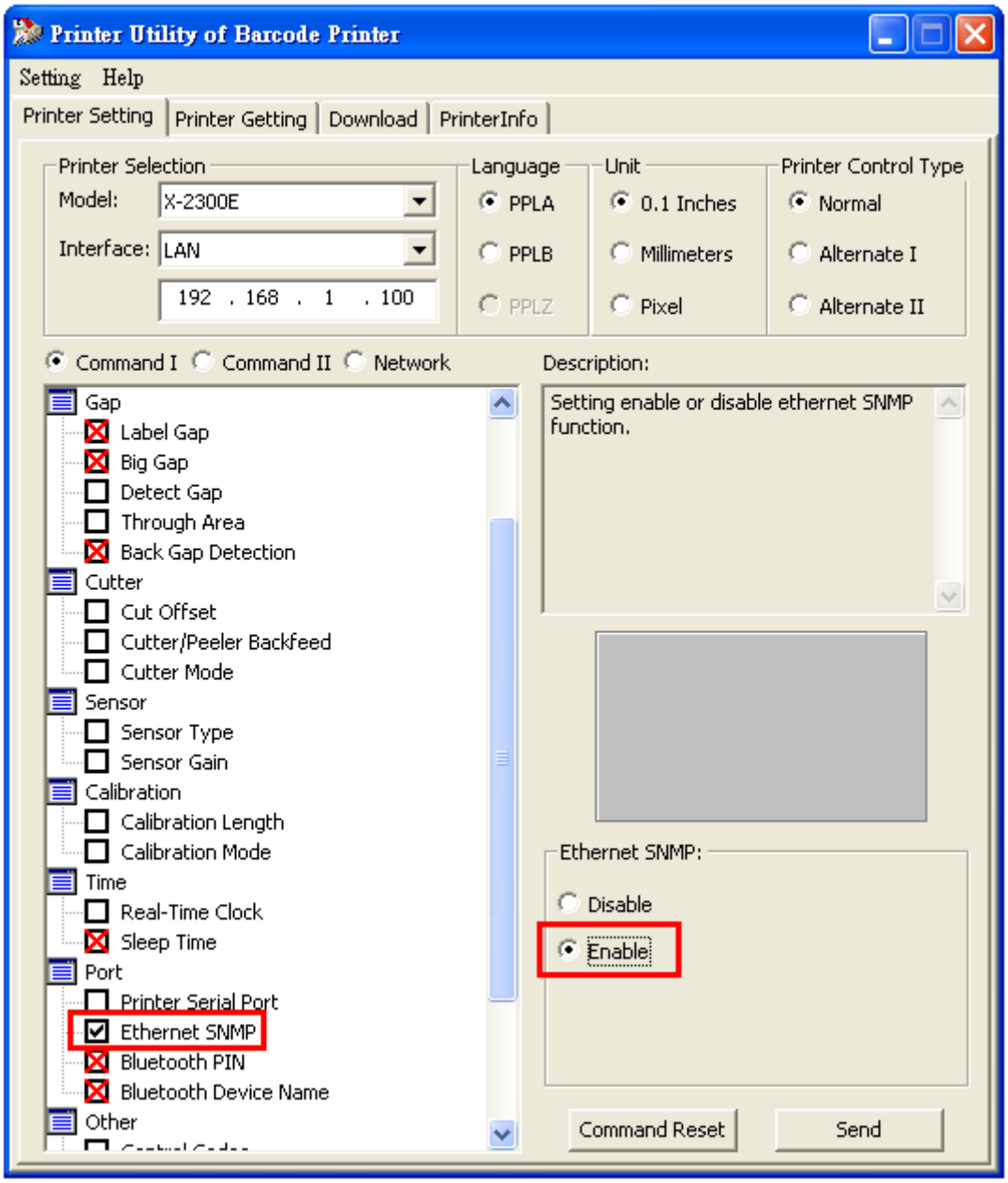


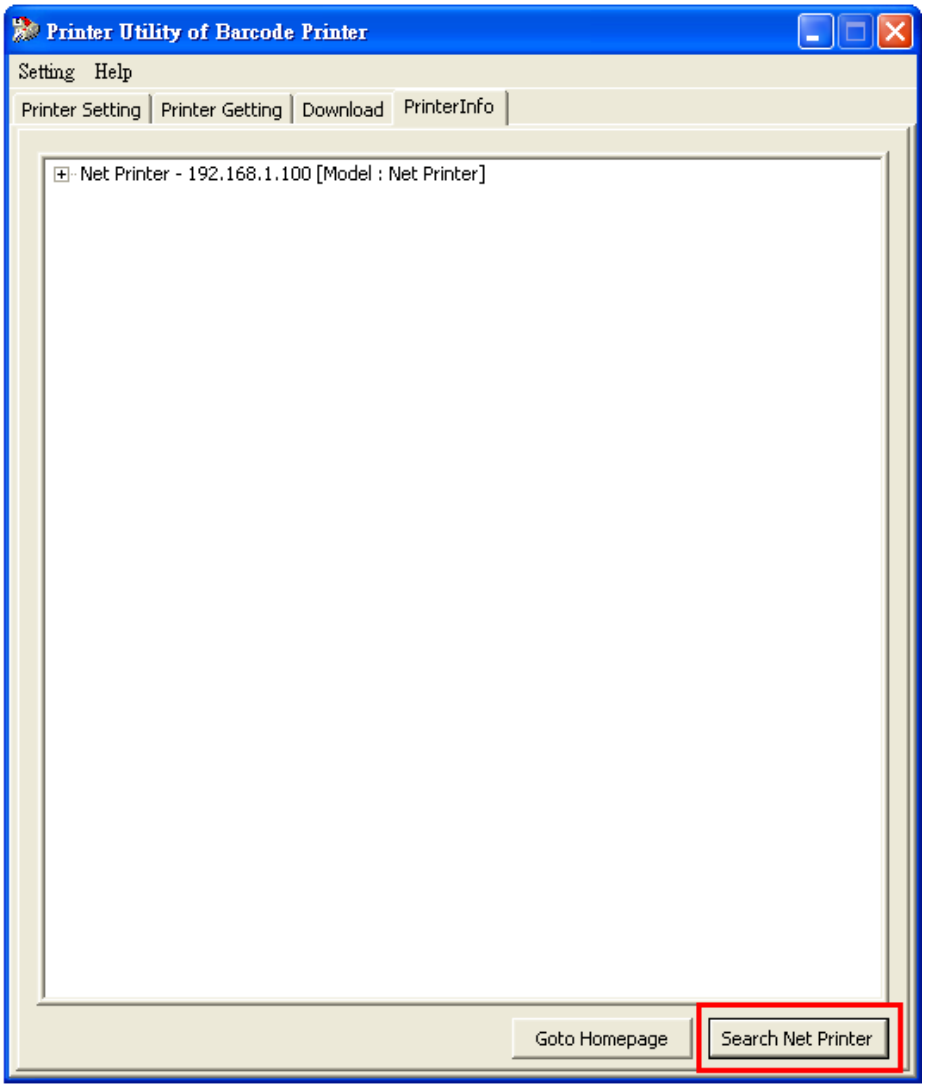
Fig.19.2.2

Choose「Port」, then select 「Ethernet SNMP」to Enable SNMP function.



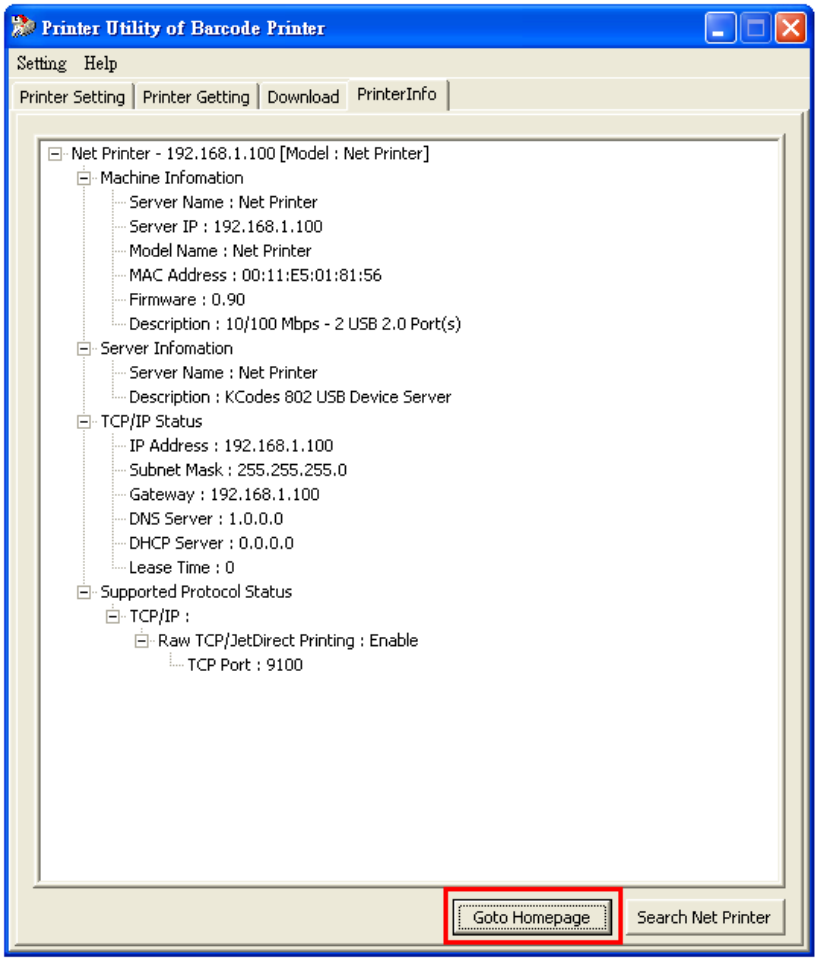
19.3. PrinterInfo

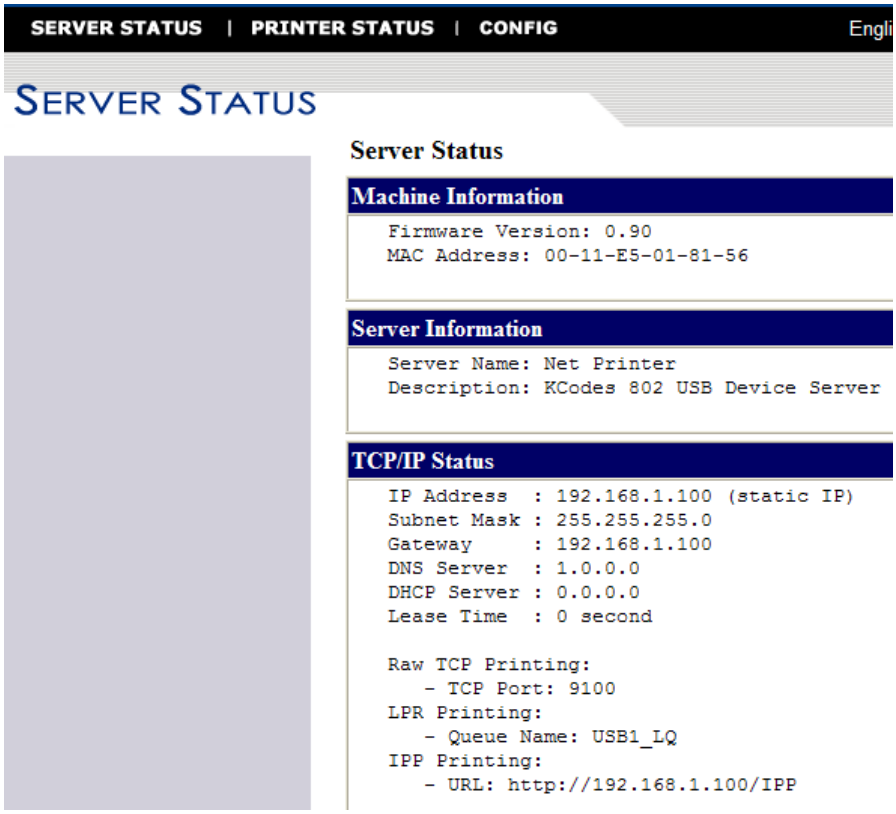
1. Press「Search Net Printer」button, 「PrinterInfo」 shows printer IP address.



2. Click「Net Printer」, 「PrinterInfo」shows more information about the net printer.

3. Press 「Goto Homepage」button and popup a webpage as below.





20. Self-test Information in Net Printer

20.1. Perform Self-test Diagnosis

Once the printer is first installed, a self test should be performed. To perform the self test, please follow the procedure:

- Turn off the power
- Load the media properly
- Press and hold the FEED key then turn on the power.
- Release the FEED key after printer starts to print.
- The configuration report should be printed as **Figure 20.1**.
- To return the printer to normal operation, please turn the power OFF and ON again or press the FEED key, otherwise the printer will enter dump mode, all input data will not be interpreted.

. Contents and Information of X-2300E “PPLB Self Test Label” are as the following:

1. **Printer Version Information**

   This includes printer firmware version and date information.

2. **Standard RAM Size**

   This message shows standard RAM size in the printer.

3. **Available RAM Size**

   This message shows available memory can be used to hold the downloadable graphics, forms and soft fonts.

4. **Flash Type**

   This message shows what flash type in printer.

5. **Available Flash Size**

   This message shows available flash can be used to hold the downloadable graphics, forms and soft fonts.

6. **Font Symbol Set**

   This message shows symbol set for font.

7. Print Mode

Direct thermal mode (without ribbon).

8. Sensor type

This message shows the sensor type such as reflective sensor.

9. Label-less Calibration Value

Used to check the printer perform label-less calibration or not. If not, it should be 8600.

10. RTC Time

This message shows time that the on-board RTC records.

11. Buzzer

This message shows that the buzzer function was enabled or not.

12. No. of DL Soft Fonts

This message shows the numbers of soft fonts downloaded in printer.

13. Int. fonts

This message shows what kind of Asia font downloaded in printer.

14. Cut Count

The message will show how many labels the printer cuts off.

15. Print Length Meter

It keeps the length printed in meters. With this, you may check the print head warranty. The value will not be reset even you replace the TPH or any components.

16. RS232 Protocols

It contains data frame of RS-232 interface: baud rate, parity, data bit, and stop bit.

17. Check Sum

Used to check the firmware flash is correct or not. It should be 0000.

18. Speed/Darkness

Printer speed/darkness setting.

19. Media Type

The message shows media type of this printer.

20. Label Length

The message shows label length in printer.

21. Backfeed Disable/Enable

This message shows backfeed disable/enable when printing.

22. Cutter Disable/Enable

This message shows backfeed disable/enable during cutter is enabling.

23. Peeler Disable/Enable

This message shows backfeed disable/enable during peeler is enabling.

24. Cutter/Peeler Offset value

This will show cutter/peeler offset information.

25. R(X,Y)=

This message shows X and Y coordinates of the origin point.

26. H. position adjust

This message shows horizontal offset about location of printing.

27. Calibration Type Mode

There are four calibration type modes; in this message you can get what mode is used.

28. Ethernet Module Version Information

This includes Ethernet Module version.

29. IP Address

This message shows IP Address status and for PC recognize.

30. Subnet Mask

A logically visible, distinctly addressed part of a single Internet Protocol network.[1] The process of sub netting is the division of a computer network into groups of computers that have a common, designated IP address routing prefix.

31. Gateway

A point of entry or exit at which a gate may be hung.

32. Mac Address

MAC address is a unique identifier assigned to most network adapters or network interface cards (NICs) by the manufacturer for identification, and used in the Media Access Control protocol sub-layer.

33. SNMP

(Please refer to 19.2. Printer setting)

34. DIP switch

Sw2	ON	OFF
1	No use	No use
2	No use	No use
3	Factory test	Normal
4	No use	No use
5	Add on card	Normal

35. Font Image

Used to check Internal Fonts are correct or not.

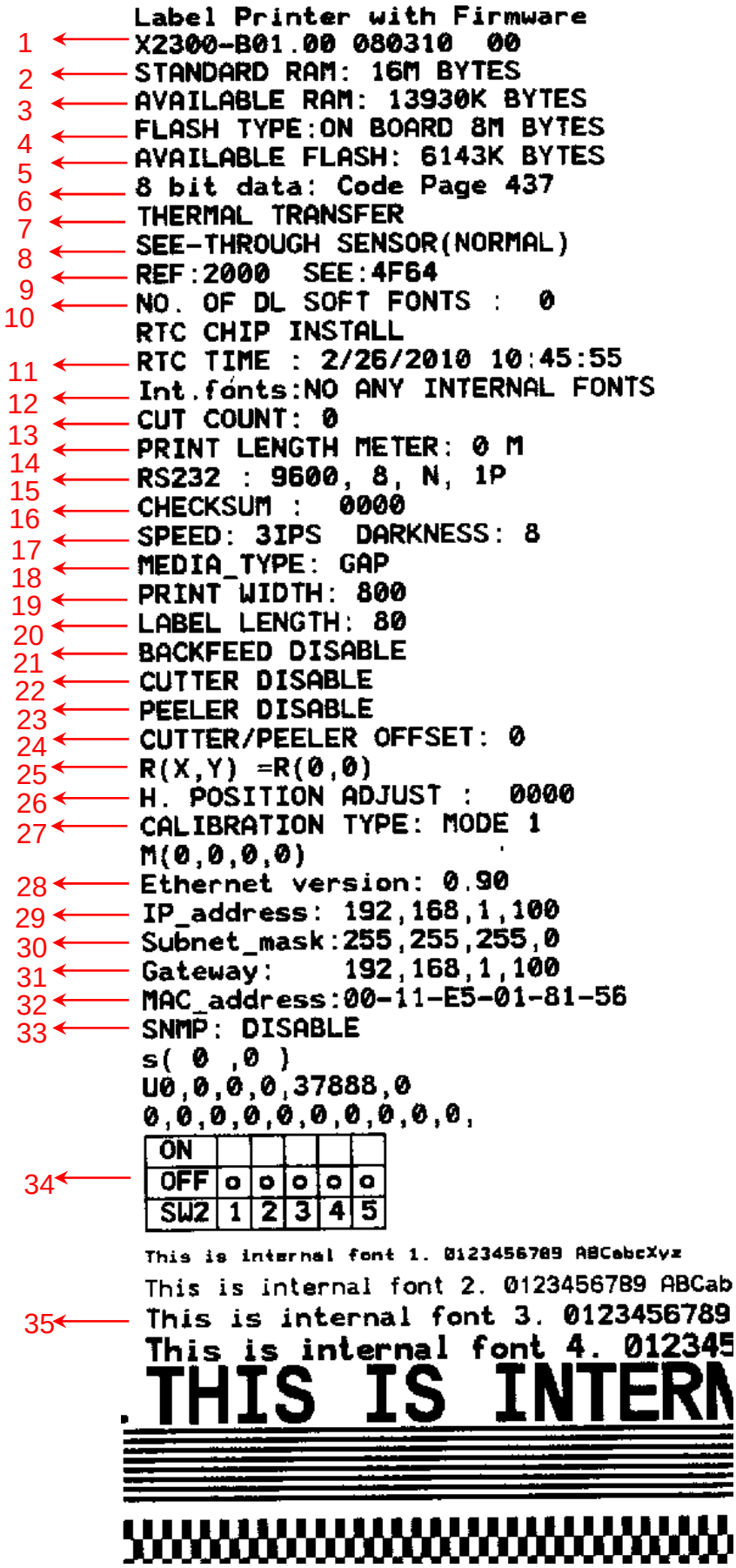

Label Printer with Firmware
1 X2300-B01.00 080310 00
2 STANDARD RAM: 16M BYTES
3 AVAILABLE RAM: 13930K BYTES
4 FLASH TYPE:ON BOARD 8M BYTES
5 AVAILABLE FLASH: 6143K BYTES
6 8 bit data: Code Page 437
7 THERMAL TRANSFER
8 SEE-THROUGH SENSOR(NORMAL)
9 REF:2000 SEE:4F64
10 NO. OF DL SOFT FONTS : 0
RTC CHIP INSTALL
11 RTC TIME : 2/26/2010 10:45:55
12 Int.fonts:NO ANY INTERNAL FONTS
13 CUT COUNT: 0
14 PRINT LENGTH METER: 0 M
15 RS232 : 9600, 8, N, 1P
16 CHECKSUM : 0000
17 SPEED: 3IPS DARKNESS: 8
18 MEDIA_TYPE: GAP
19 PRINT WIDTH: 800
20 LABEL LENGTH: 80
21 BACKFEED DISABLE
22 CUTTER DISABLE
23 PEELER DISABLE
24 CUTTER/PEELER OFFSET: 0
25 R(X,Y) =R(0,0)
26 H. POSITION ADJUST : 0000
27 CALIBRATION TYPE: MODE 1
M(0,0,0,0)
28 Ethernet version: 0.90
29 IP_address: 192,168,1,100
30 Subnet_mask:255,255,255,0
31 Gateway: 192,168,1,100
32 MAC_address:00-11-E5-01-81-56
33 SNMP: DISABLE
s(0 ,0)
U0,0,0,0,37888,0
0,0,0,0,0,0,0,0,0,0,
34
ON
OFF o o o o o
SW2 1 2 3 4 5
This is internal font 1. 0123456789 ABCabcXyz
This is internal font 2. 0123456789 ABCab
35 This is internal font 3. 0123456789
This is internal font 4. 012345
THIS IS INTERN

Figure 20.1.

21. ASSEMBLY DRAWING