

GS-2406T PLUS / GS-3405T PLUS / Series THERMAL TRANSFER / DIRECT THERMAL SURPASS PLUS LABEL PRINTER

USER'S MANUAL



Agency Compliance and Approvals



EN 55032, Class A EN 55024

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.



FCC part 15B, Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Environmental protection



Do not dispose of this product in an unsorted public trash can. You should recycle this product according to local regulations. For more information, please see our website: http://www.gainscha.com.tw

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1. Introduction

1.1 Product Introduction

Thank you very much for purchasing Gainscha bar code label printer.

The GS-2406T PLUS / GS-3405T PLUS series printer features the single motor that is capable of handling a large capacity of 300 meters ribbon and large rolls of media inside its sleek design.

If the 5" interior label capacity is not enough, simply add an external media roll mount and the PLUS series can easily handle 8" OD rolls of labels designed for expensive industrial label printers.

To meet the various printing requirements, GS-2406T PLUS and GS-3405T PLUS series provides different memory capacity. The movable black mark sensor design can accept a wide range of label media. All of the most frequently used bar code formats are included. Fonts and bar codes can be printed in any one of the four directions.

The GS-2406T PLUS / GS-3405T PLUS series printer is built-in the flexible firmware design, user can download various printer commands to perform the work. Please refer to the types of printer commands supported in the specifications. By integrating rich features, it is the most cost-effective and high-performance printer in its class!

To print label formats, please refer to the instructions provided with your labeling software, available on Gainscha website http://www.gainscha.com.tw.

Applications

- o Manufacturing & Warehousing
 - Work in Progress
 - Item Labels
 - Instruction labels
 - Agency labels
 - Compliance labels
 - Logistics management

labels

- Electronics labels
- o Parcel Post
 - Shipping/ Receiving Labels

- **o** Healthcare
 - Patient Identification
 - Pharmacy
 - Specimen Identification
- o Retail Marking
 - Price tags
 - Shelf labels
 - Jewelry tags
 - Asset management labels
 - Care labels
- o Small Office/ Home Office

1.2 Product Features

1.2.1 Printer Standard Features

PRINTER MODEL	GS-2406T PLUS	GS-3405T PLUS	GS-2406T PLUS	GS-3405T PLUS
Grade	Standard	Standard	Empower	Empower
Resolution	8dots/mm(203DPI)	12dots/mm(300DPI)	8dots/mm(203DPI)	12dots/mm(300DPI)
Printing Method		Thermal Transfe	er &Direct Thermal	
Max. print speed	152mm(6")/second	127mm(5")/second	152mm(6")/second	127mm(5")/second
Max. print width	104 mm (4.1")	108.4 mm (4.27")	104 mm (4.1")	108.4 mm (4.27")
Max. print length	15,000mm (600")	6800mm (270")	15,000mm (600")	6800mm (270")
СРИ		400 MHZ,	32 bits, ARM9	
Memory RAM	64 MB SDRAM		128 MB SDRAM	
Memory ROM	32 MB Flash Memory 128 MB Flash Memory			
Interface	 USB 2.0 High Speed 480Mbps USB Host 2.0, for scanner or PC keyboard 		RS-232Ethernet 10/100N	scanner or PC keyboard Abps h 4.0 (factory option)
Real Time Clock	N/A		Standard (CR2032 Batt	ery Install)
Buzzer	Standard		Standard	
Dealer options	Guillotine cutter (full cut and partial cut) Peeler		Guillotine cutter (full cut and partial cut) Peeler	
Sensors	Head open sensor, Ribbon end sensor, Reflective sensor (moveable), Transmissive sensor (moveable)			
Power	External universal switching power supply			

	Input: AC 100-240V, 2.5A, 50-60Hz, Output: DC 24V, 2.5A, 60W			
User Interface	1 power switch			
	2 buttons (Feed)	& Pause)		
	• 4 LEDs (Online, E	Error, Ribbon status, Com	munication)	
	User can tear the	e paper up or down		
Internal fonts	8 alpha-numeric	bitmap fonts		
	True type font er	ngine (need download so	calable font file)	
	GB18030 Simplif	fied Chinese 24x24, 16x1	6	
	BIG5 traditional	Chinese 24x24, 16x16		
1D Barcode	Code 11, Code 39, (Code 93, Code 128 (subs	ets A, B, C), UPC-A, UPC-I	E, UCC-128, Codabar,
	EAN/JAN-8, EAI	N/JAN-13, Interleaved 2	of 5, ITF14, MSI Pleassy, P	ostCode, Telepen
2D Barcode	QR Code, Micro QR Code, PDF417, Micro PDF417, MaxiCode, Aztec Code, Data Matrix			
Rotation	Font and barcode support 0, 90, 180, 270 degree			
Printer language	Compatible to TSPL, EPL, ZPL II, DPL, EPL 2			
Ribbon	300 M long, max. OD 67 mm, 1" core (ink coated outside)			
Ribbon width	30 mm ~ 110 mm (1.18" ~ 4.3")			
Media type	Continuous, die-cut, black mark, fan-fold, notched (outside wound)			
Media width	20~ 117 mm (0.7" ~ 4.6")			
Media thickness	0.055 ~ 0.19 mm (2.16 ~ 7.4 mil)			
Media core	25.4 mm (1")			
diameter				
Label roll	127 mm (5") OD			
capacity				
Label length	5 ~ 2,794 mm	5 ~ 1,016 mm (0.2" ~	5 ~ 25,400 mm (0.2" ~	5 ~ 11,430 mm (0.2" ~
	(0.2" ~ 110")	40")	1000")	450")
Physical	273.8mm(D) x 217mm(W) x 190.3mm(H)			
dimension				
Enclosure	ABS plastic			

Safety regulation	FCC Class A, CE Class A, CCC, BIS, CB
Environment	Operation: 5 ~ 40°C, 25 ~ 85% non-condensing
condition	Storage: -40 ~ 60°C, 10 ~ 90% non-condensing
Environmental	Comply with RoHS, REACH, WEEE
concern	
Accessories	Windows labeling software CD disk
	Quick start guide
	USB cable
	Power cord
	1" ribbon spindle x 2 for 300M ribbon
	External universal switching power supply

1.2.2 Printer Optional Features

Product option feature	User options	Dealer options	Factory options
External Label holder	0		
Peeler module		0	0
Regular full cut cutter (Guillotine cutter) Media thickness: 0.06~0.19 mm Media type: receipt and label liner w/o glue		0	0
Regular full/partial cutter (TextileCare Cutter)		0	0
RS-232 (D-Sub9 pins)		0	0
Ethernet 10/100 Mbps (RJ-45)		0	0
Internal Bluetooth 4.0 (factory option)		0	
Internal WiFi (factory option)		0	

NOTE: Except for the linerless cutter, all regular/heavy duty/care label cutters DO NOT cut on media with glue.

2. Operations Overview

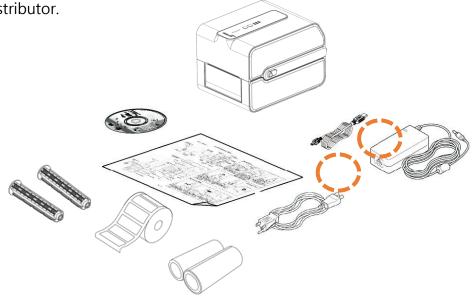
2.1 Unpacking and Inspection

This printer has been specially packaged to withstand damage during shipping. Please carefully inspect the packaging and printer upon receiving the bar code printer. Please retain the packaging materials in case you need to reship the printer. Unpacking the printer, the following items are included in the carton.

- One printer unit
- One quick installation guide
- One power cord
- One external universal switching power supply

- One USB interface cable
- 1inch core ribbon shaft for 300m ribbon
- One sample ribbon and Label roll
- One Windows labelingsoftware/Windows driver CD disk

If any parts are missing, please contact the Customer Service Department of your purchased reseller or distributor.



2.2 Printer Overview

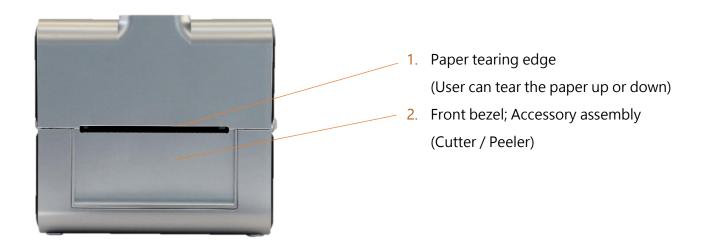
2.2.1 Front View



2.2.2 Interior View



2.2.3 Front View



2.2.4 Rear View



- 1. Power jack socket
- 2. USB interface
- 3. USB host (For USB keyboard or scanner)
- 4. RS-232 interface
- 5. RJ-45 Ethernet interface
- 6. External label entrance chute

3. Setup

3.1 Setting up the Printer

Place the printer on a flat, secure surface, then follow the steps below:

- 1. Plug the power cord into the AC power cord socket at the rear of the printer. Then, plug the other side into a properly grounded power outlet.
- 2. Connect the printer to the computer with the provided USB cable.
- 3. Push the power switch on "-" side to open the power of printer.

NOTE:

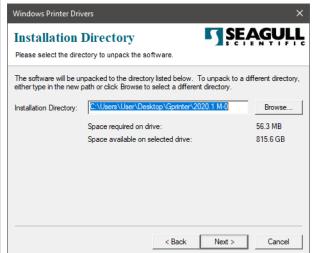
- * Please switch OFF printer power prior to plugging in the power cord to printer power jack.
- * The interface picture here is for reference only. Please refer to the product specification for the interfaces availability.

3.2 Install Printer Driver



(GS-2406T/GS-3405T)





1. Read the license agreement, click [I accept the terms in license agreement], and click [Next].

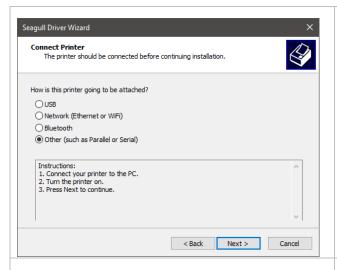
2. Select a installation directory and click [Next].

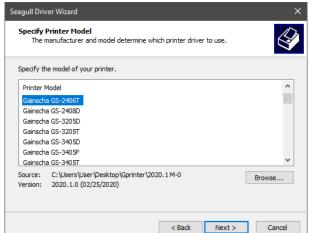




3. Click [Finish].

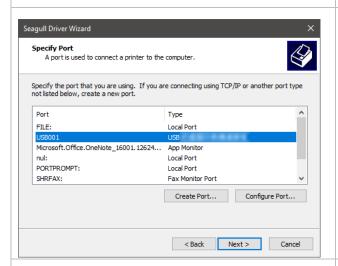
4. Go to installation process, please click [Install Printer Driver], and then click [Next].





5. Click [Other] and click [Next].

6. Select printer model name, click to install and click [Next].



Specify Printer Name
Names are used to identify the printer on this computer and on the network.

Enter a name for this printer.

Printer name: Sainscha

Use this printer as the default printer

Specify whether or not you want to share this printer with other network users. When sharing, you must provide a share name.

Do not share this printer

Share name: Gainscha

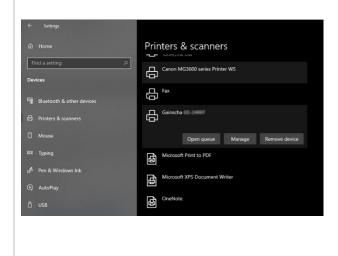
Share name: Gainscha

Please use a USB cable to connect the printer to the computer, click the corresponding USB interface, and click [Next]. 8. Change the printer name as per need, and click [Next].

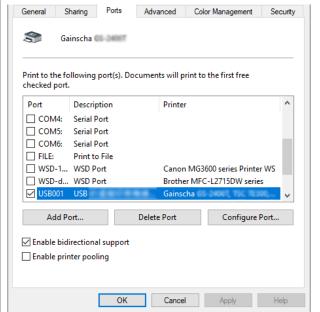




9. Click [Finish].

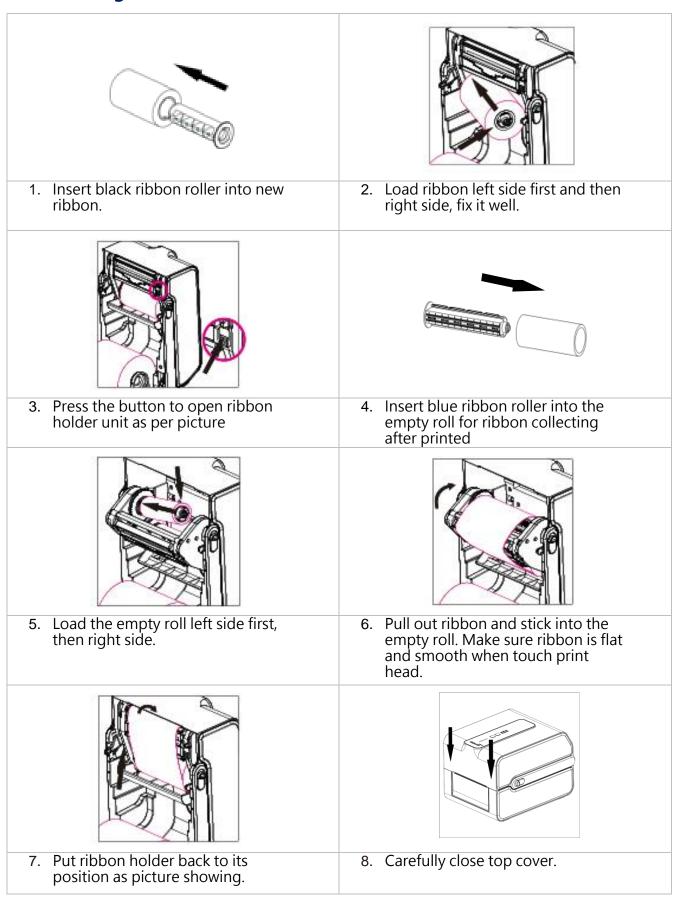


10. The installation is completed, please click [Close].



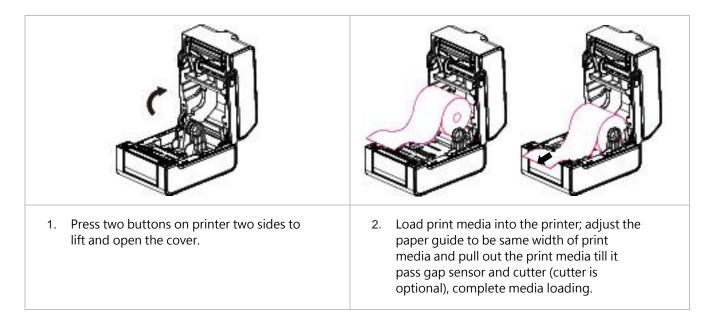
- 11. Users can check whether the installation is completed through the following ways:
 - a. If Windows 10, check from [Windows Settings] \rightarrow [Devices] \rightarrow [Printers and Scanners].
 - b. Check from [Control Panel] \rightarrow [Devices and Printers].
- 12. Users can change printer interface through the following ways:
 - a. In Windows 10, [Windows Settings] →
 [Printers and Scanners] → [Devices] → select
 the corresponding printer model →
 [Management] → [Printer Content] → [Port]
 to change different USB port / COM port as
 per need.
 - b. From [Control Panel] → [Devices and
 Printers] → select the corresponding printer
 model → right-click → [Printer Content] →
 [Port] to modify it.

3.3 Loading the Ribbon

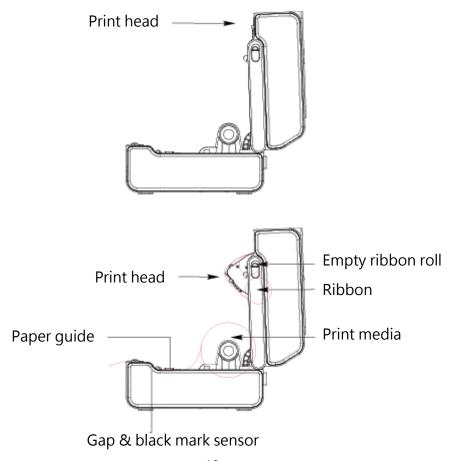


3.4 Loading the Media

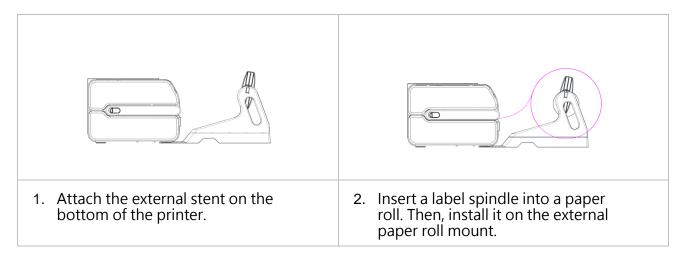
3.4.1 Loading the Roll Labels



3.4.2 Ribbon and print media loading diagram

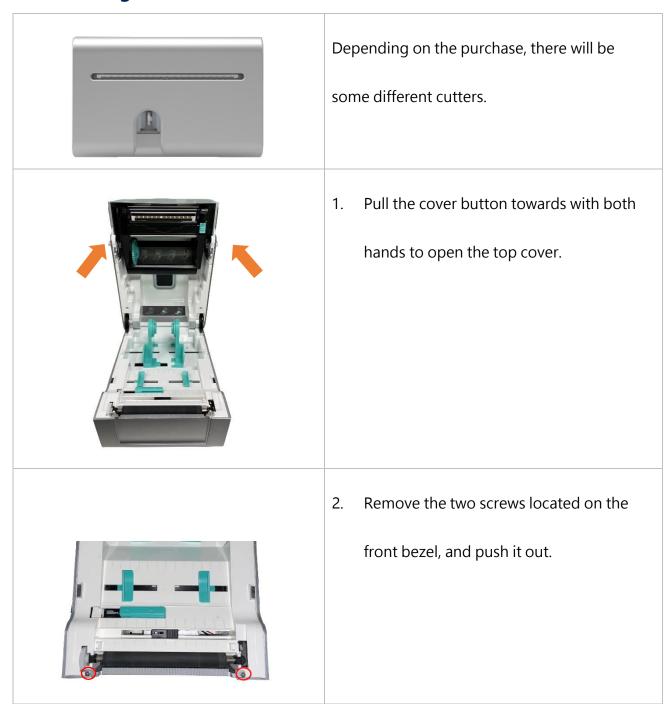


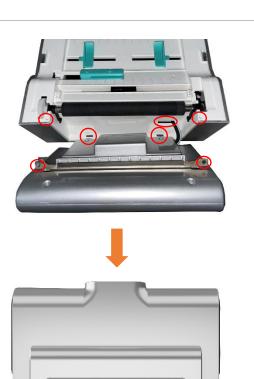
3.4.3 External Label Roll Mount Installation (Option)



Note: When using the Gainscha External Label holder, the 1" core label spindle only supports a radius of 12 cm / 2" core label spindle only supports a radius of 10 cm / 3" core label spindle only supports a radius of 8.5 cm

3.5 Loading the Cutter





- Align the cutter with the tenon, and place the wire of the cutter into the hole.
- 4. When attaching the cutter, take care not to press it on the wire, and lock the cutter with the screw.



 Turn the printer upside down, remove the two screws located on the bottom cover, and open the bottom cover.



Pull out the wire and plug the wafer
 1X10P P2.0 connector into the
 motherboard.



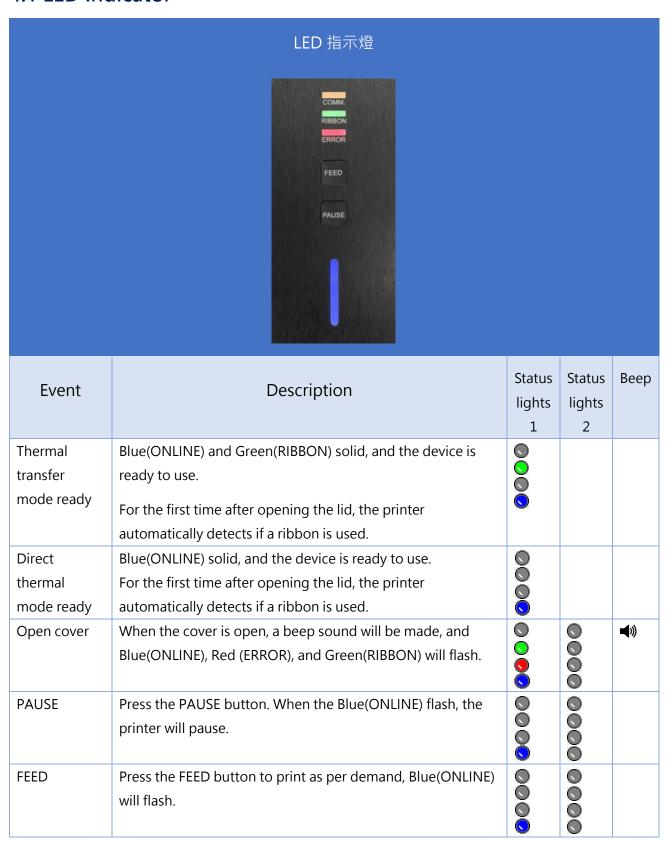
7. After inserting it, cover the bottom cover and lock the screws.



8. Finish.

4. LED and Button Functions

4.1 LED Indicator



Out of paper	When out of paper, a beep sound will be made, and Red(ERROR) flash	0	0000	◄ »
Out of ribbon	When out of ribbon, a beep sound will be made, and Red(ERROR) solid, Green (RIBBON) flash	0	O O O	◄ »
Label gap/black mark error	When label gap/black can't be found, a beep sound will be made, and Red(ERROR) Blue(ONLINE) flash Note: This error message is on (included) firmware version "65B56R8" and later, classified as "Out of paper".	0	0	■ 3)
Cutter error	When cutter can't be found, a beep sound will be made, and Blue(ONLINE) Red(ERROR) Both flash alternately, flash with Green(RIBBON)	0	0000	4 »
Print head overheated	When print head overheated ,a beep sound will be made, and Blue(ONLINE)and Red(ERROR) alternately flash	000	0	◄ »)
Other errors	When other errors, a beep sound will be made, and Red(ERROR) and Green(RIBBON) alternately flash	0	0000	◄ »)
Ethernet ready	When the RJ45 network cable is plugged in and the connection is normal, the Orange(COMM) flash	0000	0000	
WIFI ready	When the WIFI's AP or STA mode is connected, the orange(COMM) solid	0000		
Ethernet +WIFI ready	When the RJ45 network cable is plugged in, and the connection is normal, and the WIFI's AP or STA mode is connected, the orange (COMM) will be solid for 2 seconds and the orange (COMM) flash.	0000	0000	

4.2 Regular Button Functions

This printer has two buttons for feed, pause or cancel errors. There are different functions

in different modes, as shown in the following table:

Button	Printer	Function	Description
	status		
Feed	Ready	Feed	When the printer is ready (Blue LED ON), press this
button			button once, and the label will advance to the front of
			the next label
Feed	Wait for push	Print next	When the button Demand function is activated, the
button	button to print		printer will stop after printing and wait for the user to
			press this button before printing the next label.
Pause	Print mode	Pause	When the printer is printing continuously, pressing
button			the PAUSE button will pause printing. The power
			indicator is blue flashing. Just press the button again,
			and the print job returns to normal.
Pause	Error	Cancel error	When the error RED is on, press the PAUSE button
button	occurred		once, the printer will cancel the error and resume
			printing function, and reprint the label layout when
			the error occurs.

4.3 Power-on Utilities

This printer has six power-on functions for setting or testing the printer's hardware. Press these buttons at the same time when the power is turned on, and release the buttons with the light signal to activate these functions.

Follow these steps to enable the boot function:

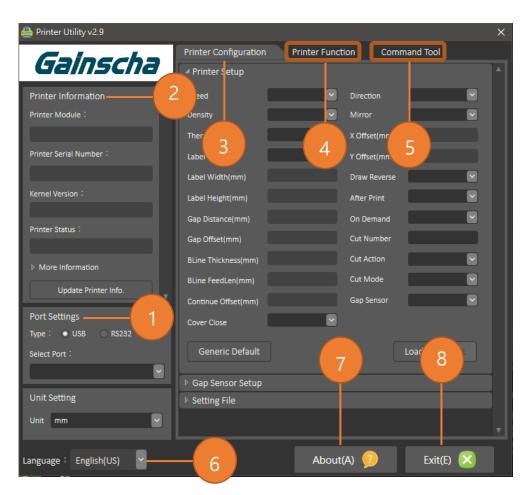
Event	Description	Status	Веер
		lights	
Self-test	A. Power off the printer.B. Make sure the printer is loaded with paper and the cover is closed.C. Press the FEED button, and turn on the printer. Hold the button until the online Blue is on. After a beep, a self-test page will be printed.		4 3)
Enter USB storage device function	A. Power off the printer.B. Make sure the printer is loaded with paper and the cover is closed.C. Press the PAUSE button, and turn on the printer. Hold the button until the online Blue is on. After a beep, the printer's storage device will appear on the computer.	0000	4 3)
Enter dump mode	A. Power off the printerB. Make sure the printer is loaded with paper and the cover is closed.C. Press the PAUSE and FEED buttons for two seconds, then turn on the printer. Hold the buttons until the online Blue and the error Red are on at the same time. After a beep, the printer will print out "NOW IN DUMP MODE".	0	4))
Skip AUTO.BAS	A. Power off the printer B. Press the PAUSE and FEED buttons for four seconds, then turn on the printer. Hold the buttons until the online Blue is off and the error Red is on. After the two beeps, the printer will skip the AUTO.BAS program, and the power light is on.	0	4))
Printer initialization	A. Power off the printer B. Press the PAUSE and FEED buttons for six seconds, then turn on the printer. Hold the buttons until the online Blue is on and the error Red is off. After the five beeps, the printer will restore the printer parameters to the factory default settings.	0	4))
Ribbon inspection	The machine will automatically detect the status of the ribbon after turning on and in each thermal transfer printing mode.		

5. PrinterUtility

Printer Utility is an integrated tool software that helps users query printer settings and status, change printer-related settings, and send commands or files to the printer.

5.1 Start the PrinterUtility

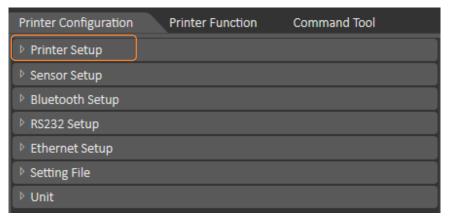
- 1. Please mouse over Printer Utility icon 🚔 Printer Utility.exe image Double click left mouse button.
- 2. After opening the main screen, you can see the following function items:
- (1) Port Settings (5) Command Tool
- (2) Printer Information (6) Language
- (3) Printer Configuration (7) About
- (4) Printer Function (8) Exit



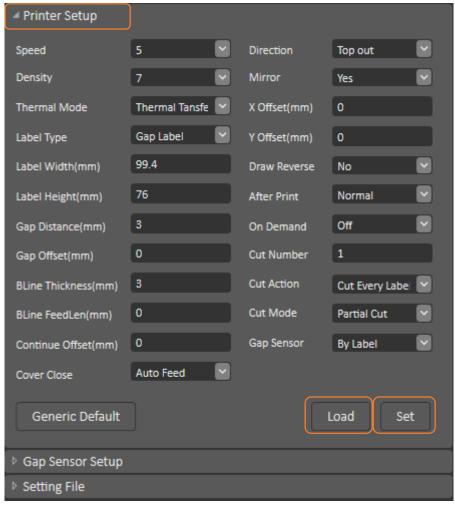
NOTE: If you need more detailed information, please refer to Gainscha official website http://www.gainscha.com.tw/

5.2 Printer Function

1. Click the Printer Configuration and Printer Setup Can open and close the printer general settings screen.

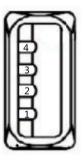


2. Click the Load Button to bring out all printer general setting information through the selected communication interface. Click the Set button to write the setting value to the printer (please execute the reading function before writing).



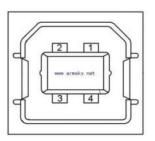
6. Communication interfaces

1) USB (A Type)



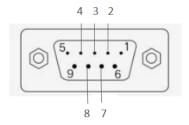
Pin No.	Pin Name
1	VBUS
2	D-
3	D+
4	GND

2) USB (B Type)



Pin No.	Pin Name
1	VBUS
2	D-
3	D+
4	GND

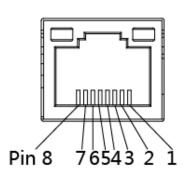
3) Serial Port



DB9 母头定义

Pin No.	Pin Name	Description
1	-	-
2	TXD	Transmit Data
3	RXD	Receive Data
4	Connect to Pin6	Equipment to Judge
5	GND	System Ground
6	Connect to Pin4	Equipment to Judge
7	CTS	Clear to Send
8	RTS	Request to Send
9	-	Reserve (No output)

4) Ethernet Port



Pin No.	Pin Name
1	TX+
2	TX-
3	RX+
4	-
5	-
6	RX-
7	-
8	-

7. Troubleshooting

7.1 Common Problems

The following guide lists the most common problems that may be encountered when operating this bar code printer. If the printer still does not function after all suggested solutions have been invoked, please contact the Customer Service Department of your purchased reseller or distributor for assistance.

Problem	Possible Cause	Recovery Procedure
Power indicator does	The power cord is not properly	Plug the power cord in printer and
not illuminate.	connected.	outlet.
		Switch the printer on.
Out of ribbon	Out of ribbon.	 Install new ribbon.
	The ribbon installation path is	Follow the steps for installing the
	incorrect.	ribbon to reinstall.
Out of paper	Out of paper.	Install new paper.
	The paper installation path is	Follow the steps for installing the
	incorrect.	paper to reinstall.
	Gap / black mark sensor detection	Recalibrate the label sensor.
	is incorrect.	Check whether the label paper is
		abnormal.
Paper jam	Gap / black mark sensor detection	Recalibrate the label sensor.
	is incorrect.	Set the correct label size.
	The label size is set incorrectly.	Cleaning the inside of the printer.
	Label may be blocked inside the	
	printer.	
Unable to print	Cable is not well connected to	Re-connect cable to interface.
	serial or USB interface or parallel	Change a new cable.
	port.	Ribbon and media are not
		compatible.
		Verify the ribbon-inked side.
		Reload the ribbon again.
		Clean the print head.
		The print density setting is
		incorrect.
		Print head's harness connector is
		not well connected with printhead.

		Turn off the printer and plug the connector again.
Poor print quality	Ribbon and media is loaded	Reload the supply.
	incorrectly.	Clean the print head.
	 Dust or adhesive accumulation on 	Clean the platen roller.
	the print head.	Adjust the print density and print
	 Print density is not set properly. 	speed.
	 Printhead element is damaged. 	Run printer self-test and check
	 Ribbon and media are 	the print head test pattern if there
	incompatible.	is dot missing in the pattern.
		Change proper ribbon or proper
		label media.
		The print head mechanism does
		not latch the print head properly.
Skip labels when	Label size is not specified	Check if label size is setup
printing	properly.	correctly.
	 Sensor sensitivity is not set 	Calibrate the sensor by Auto Gap
	properly.	or Manual Gap options.
	 The media sensor is covered 	Clear the GAP/Black mark sensor
	with dust.	by blower.
The printing position of	Media sensor sensitivity is not	Calibrate the sensor sensitivity
small label is incorrect	set properly.	again.
	 Label size is incorrect. 	Set the correct label size and gap
	The vertical offset setting in the	size.
	driver is incorrect.	If using the software BarTender,
	unver is incorrect.	please set the vertical offset in the
		driver.
Missing printing on the	Wrong label size setup.	Set the correct label size.
left or right side of label		
Wrinkle problem	Ribbon installation is incorrect.	Please set the suitable density to
	 Media installation is incorrect. 	have good print quality.
	 Print density is incorrect. 	Make sure the label guide touch
	 Media feeding is incorrect. 	the edge of the media guide.
Gray line on the blank	The print head is dirty.	Clean the print head.
label	 The platen roller is dirty. 	Clean the platen roller
Irregular printing	The printer is in Hex Dump mode.	Turn off and on the printer to skip
		the dump mode.

8. Maintenance

This session presents the clean tools and methods to maintain your printer.

- 1. Please use one of following material to clean the printer.
 - Cotton swab
 - Lint-free cloth
 - Vacuum / Blower brush
 - 100% ethanol
- 2. The cleaning process is described as following,

Printer Part	Method		
Print Head	Always turn off the printer before cleaning the print head.		
	2. Allow the print head to cool for a minimum of one minute.		
	3. Use a cotton swab and 100% ethanol to clean the print head surface.		
	Print Head		
	Print Head Element Head Cleaner Pen		
Platen Roller	 Turn the power off. Rotate the platen roller and wipe it thoroughly with 100% ethanol and a cotton swab, or lint-free cloth. 		
Tear Bar/Peel Bar	Use the lint-free cloth with 100% ethanol to wipe it.		
Sensor	Compressed air or vacuum		
Exterior	Wipe it with water-dampened cloth		
Interior	Brush or vacuum		

NOTE:

- Do not touch printer head by hand. If you touch it careless, please use ethanol to clean it.
- Please use 100% Ethenol.DO NOT use medical alcohol, which may damage the printer head.
- Regularly clean the print head and supply sensors once change a new ribbon to keep printer performance and extend printer life.
- The maximum printing ratio per dot line is 15% for this printer. To print the full web black line, the maximum black line height is limited to 40 dots, which is 5mm for 203 DPI resolution printer and 3.3mm for 300 DPI resolution printer.

9. Revise History

Date	Version	Content
2021/1/29	Ver1.1.1	Add warning
2021/2/18	Ver.1.1.2	Modify chapter 1.2.1 Printer Standard Features
		Modify chapter 1.1 Product Introduction
		Modify chapter 4.3 Power-on Utilities
2021/2/24	Ver.1.1.3	Modify chapter 1.2.2 Printer Optional Features
2021/3/5	Ver.1.1.4	Modify chapter 1.1 Product Introduction
		Modify chapter 1.2.1 Printer Standard Features
		Modify chapter 2.2.3 Front View
2021/3/17	Ver.1.1.5	Modify chapter 1.1 Product Introduction
2021/9/6	Ver.1.1.6	Modify chapter 2.2 Printer Overview
		Modify chapter 3.5 Loading the Cutter
2021/9/28	Ver.1.1.7	Modify chapter 3.5 Loading the Cutter
2022/4/13	Ver.1.1.8	Modify chapter diagram top windows del.
2022/4/28	Ver.1.1.9	Modify chapter 6 add communication interface
2023/6/28	Ver.1.2.0	Modify 4.1 Label gap/black mark error add note
		Modify 7.1 Out of paper add solution
		Modify language Add EPL 2
2024/10/19	Ver.1.2.1	Modify Max. print length 200dpi max. print length : 15,000mm (600")
		300dpi max. print length: 6800mm (270")