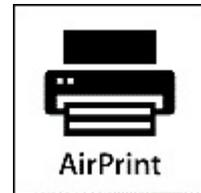




AirPrint Users Manual



Revision 1.00

Star Micronics Corporation Special Devices Division

STAR MICRONICS CO., LTD.

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1 Introduction

AirPrint is a feature in Apple Inc.'s macOS and iOS operating systems such as iPhone, iPad and iPod touch for printing via a WLAN (Wireless LAN).

With AirPrint, it is easy to print photos and documents from your Mac, iPhone, iPad, or iPod touch without having to install additional software.

Also, you can control cash drawer or buzzer to be connected to the Star Micronics AirPrint printer via the DK-port.

Star Micronics AirPrint printer is designed for retail and hospitality environment.

1.1 Support model

TSP654IIHIA

1.2 Support OS

iOS

Devices using the latest version of iOS as following:

- iPhone
- iPad
- iPod touch

Mac OS

macOS 10.12, Mac OS X 10.11, Mac OS X 10.10, Mac OS X 10.9 are supported by Mac OS X CUPS Driver. Please download Mac OS X CUPS Driver from below URL.

http://www.starmicronics.com/support/default.aspx?printerCode=CUPS_for_Mac

1.3 Trademarks

Apple, the Apple logo, iPad, iPhone, iPod, iPod touch, iTunes, Retina, Mac, Mac OS and OS X are trademarks of Apple Inc., registered in the U.S. and other countries.

2 Setting

2.1 AirPrint Overview

TSP654IIHIA supports 2 kinds of Ethernet connection.

One is Wired LAN and another is Wireless LAN (WLAN).

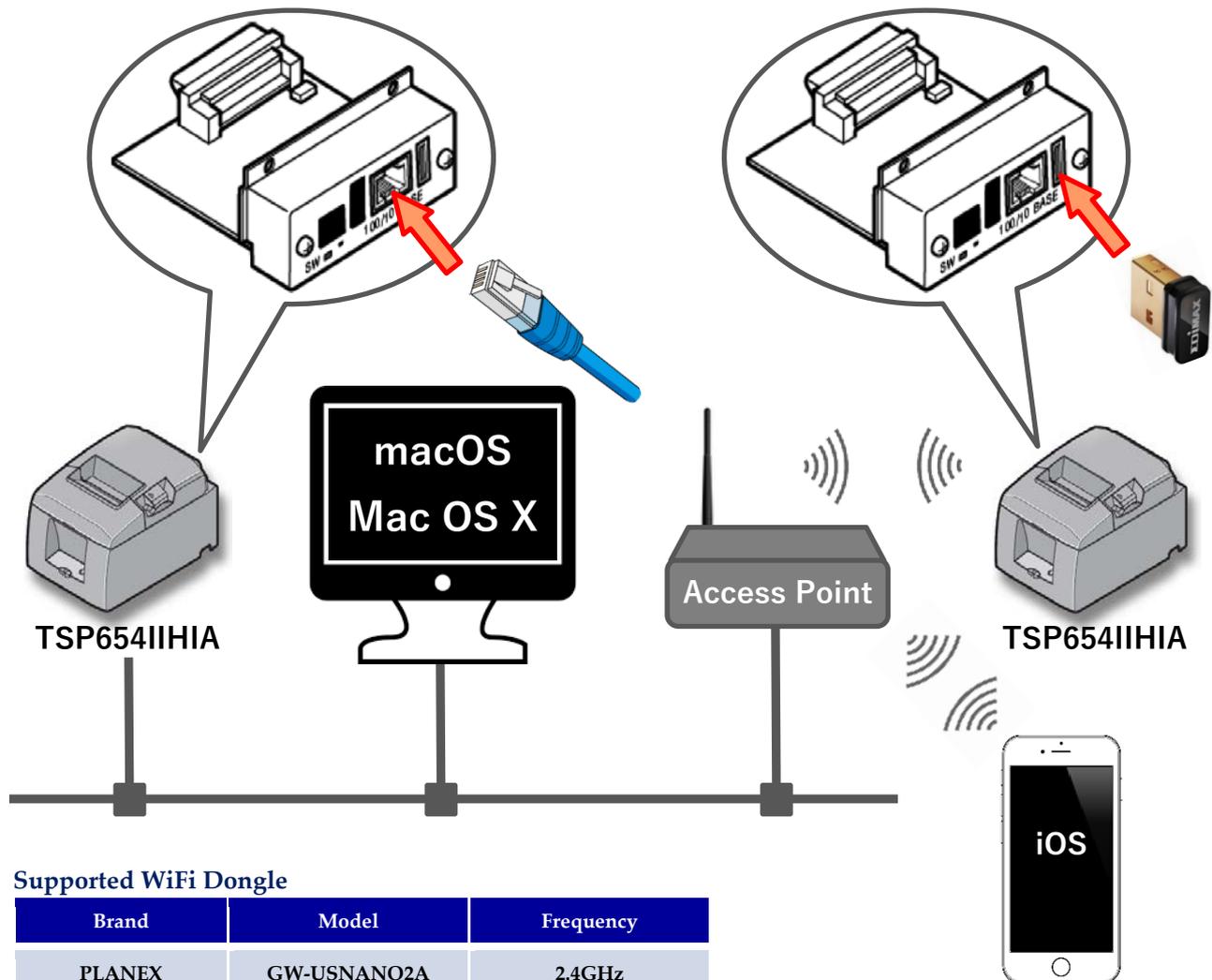
If you select Wired connection, please go to [2.2 How to setup Wired LAN](#).

If you select Wireless connection, please go to [2.3 How to setup WLAN](#).

2.2 How to setup Wired LAN



2.3 How to setup WLAN



Supported WiFi Dongle

Brand	Model	Frequency
PLANEX	GW-USNANO2A	2.4GHz
EDIMAX	EW-7811UN	2.4GHz
D-Link	DWA-182 rev C1	2.4GHz / 5GHz
LINKSYS	WUSB6300	2.4GHz / 5GHz

2.2 How to setup Wired LAN

2.2.1 Connect Ethernet cable to Access Point or Switching Hub.



2.2.2 Self-Print

Turn ON the printer with FEED button pushing.

You can find the IP Address (DHCP) on the bottom of 2nd page.

```
*** TSP650II Ver3.0 -b1.0 ***
Interface : 100/10BASE
-- Dip Switch 1 --
Sw 12345678
On *****
Off
-- Dip Switch 1 Detail --
1 = Emulation : Star Line/T
6 = BUSY : All
7 = ASB : Valid
8 = NSB : Valid
```

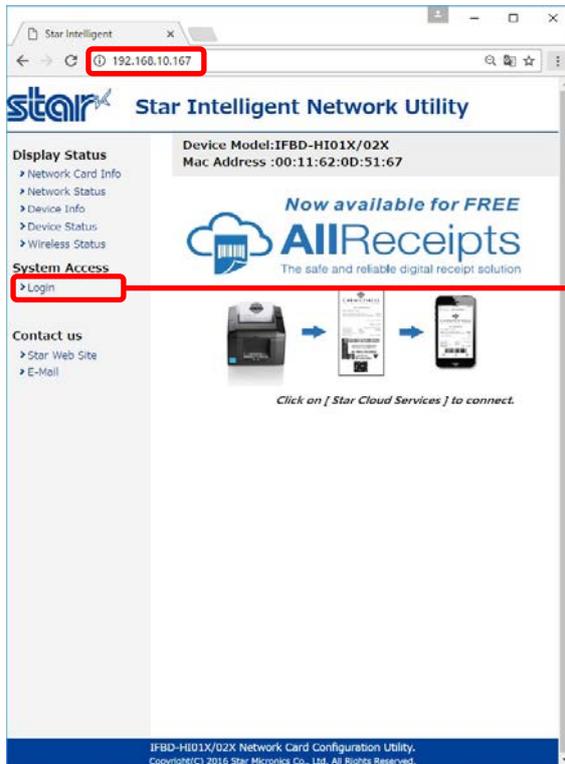
```
Star IFBD-HI01X/02X
Firmware level
Main: V1.2.0
Boot: V1.0.0
Application: V1.2.0_AirPrint
Ethernet Configuration
IP Assignment: DHCP/BOOTP
RARP: Enabled
Disconnect Message: Auto
MAC Address: 00:11:82:00:51:67
Wireless LAN Configuration
WLAN Adapter: None
SSL/TLS Security
https: Disabled
https web server port: 443
Certificate Type: Self-Signed
Self-Signed Cert: Not exist
CA-Signed Cert: Not exist
TCP/IP Settings and Services
TCP Keep-Alive: Disabled
Port 9100 printing: Single Session
Port 9100 timeout: 0 seconds
```

```
AirPrint
AirPrint Service: Disabled
Bonjour Server Name: IFBD-HI01X/02X
Location: Printer location (TBA
)
Geo Location (Latitude):
Geo Location (Longitude):
USB Host
Configuration Loading: Enabled
Star WebPRINT
WebPRINT Service: Enabled
Star CloudPRINT
CloudPRINT Service: Enabled
Poll Interval: 5 seconds
ID:
Star Cloud Services
Receipt Upload: Enabled
Retailer:
Device ID:
Interface Card DIP Switch
SW 1: OFF (DHCP Timeout Enabled)
SW 2: OFF (TFTP Recovery Disabled)
Security Notice
* Default password should be changed.
```

```
*****
Ethernet Network:
IP Address: 192.168.10.167 (DHCP)
Subnet Mask: 255.255.255.0
Gateway: 192.168.10.1
```

2.2.3 Execute Browser, then Login

Execute Browser, then put IP Address which you got from Self-Print.
And, click "Login".



Authentication Required

http://192.168.10.104 requires a username and password.
Your connection to this site is not private.

User Name:

Password:

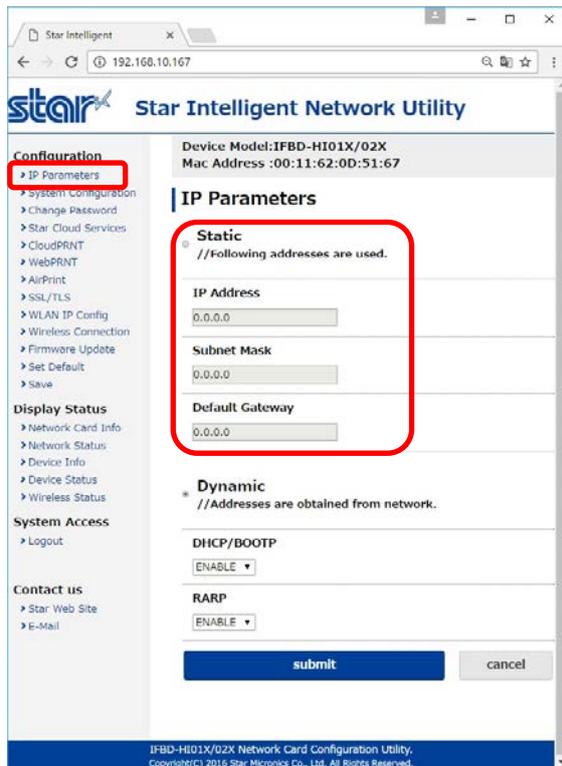
Default Login ID & Password

User Name : **root**

Password : **public**

2.2.4 IP Config Settings

If you need to change IP Address Static, please change them, then save the settings.



IP Parameters

The following table shows the Static (fixed address) and Dynamic (dynamic address acquisition) items of the IP address that can be stored in the non-volatile memory.

Category	Setting Items	Input Range	Initial Value (Factory Default)
Static	IP Address	0.0.0.0 to 255.255.255.254	0.0.0.0
	Subnet Mask	0.0.0.0 to 255.255.255.255	0.0.0.0
	Default Gateway	0.0.0.0 to 255.255.255.255	0.0.0.0
Dynamic	DHCP/BOOTP	ENABLE / DISABLE	ENABLE
	RARP	ENABLE / DISABLE	ENABLE

Note: If setting Static to anything other than 0.0.0.0, set all Dynamic to DISABLE. If setting Dynamic to ENABLE, set all Static to 0.0.0.0.

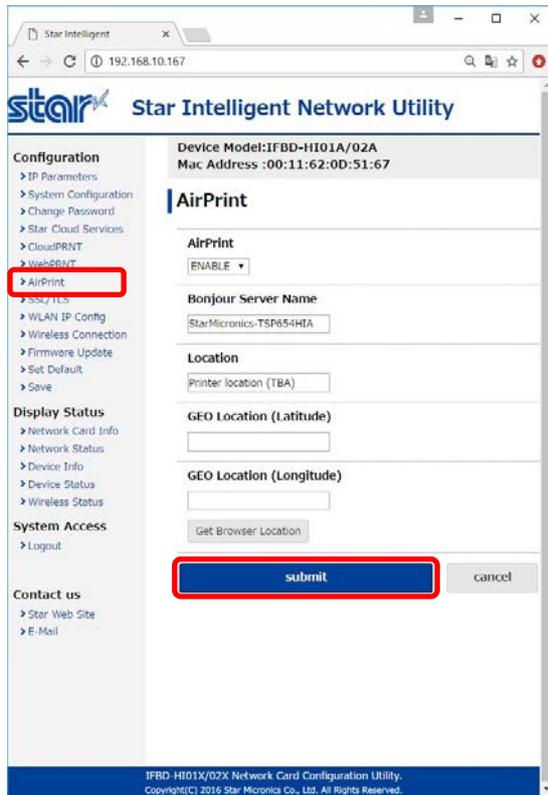
After change the settings, please click “submit” and save the settings.



2.2.5 AirPrint Settings

This is settings for AirPrint.

If you need to change below settings, please change them, then save the settings.



[Example of setting list]

Item	Value	Notes
AirPrint	ENABLE (*1) or DISABLE	
Bonjour Server Name	StarMicronics-TSP654HIA (*1)	max 63 characters
Location	Printer location (TBA) (*1)	max 127 characters
GEO Location (Latitude)		(*2)
GEO Location (Longitude)		(*2)

(*1) Default value

(*2) If "Get Browser Location" button cannot work,
please see following examples or set "SSL" setting and open by "https".

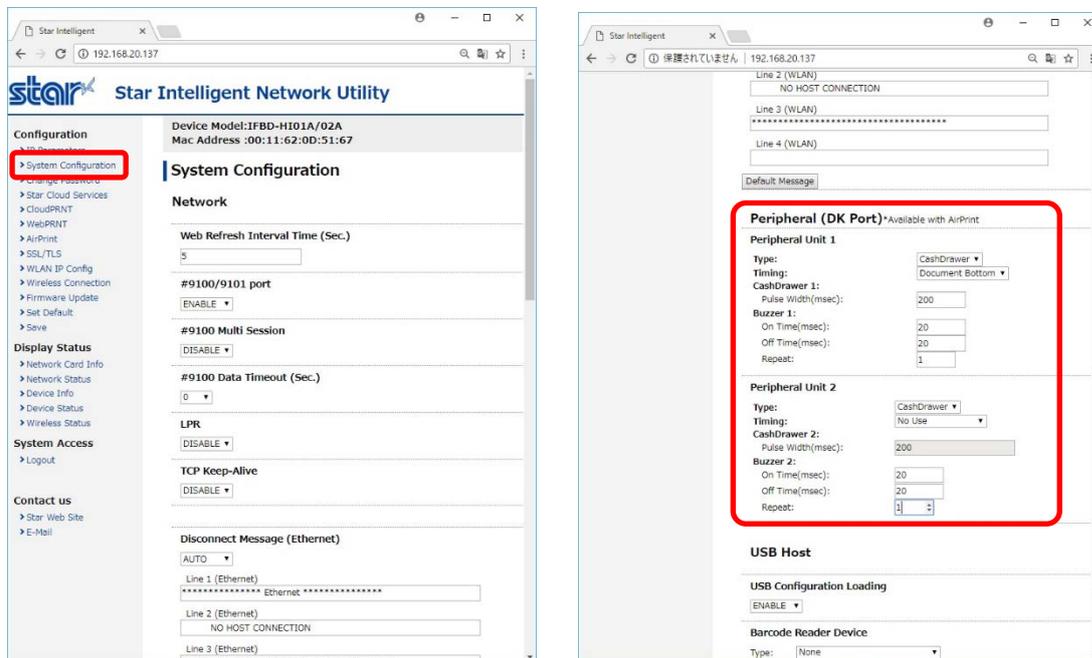
[Example of location]

Location	Star Micronics Japan	Star Micronics US	Star Micronics UK	Star Micronics Thailand
Latitude:	35.0144857	40.4846472	51.6199034	13.7269006
Longitude:	138.451635	-74.5119392	-0.7113674	100.5311396

2.2.6 Peripheral (DK Port) Settings

This is setting for Cash Drawer and Buzzer control for AirPrint, it can be changed at "System Configuration" on the menu list.

Refer to the below settings, then submit and save the settings.



	Value	Default Value	
Peripheral Unit 1	Type:	Cash Drawer / Buzzer	CashDrawer
	Timing:	No Use / Document Top / Page Top / Page Bottom / Document Bottom	Document Bottom
	Cash Drawer 1		
	Pulse Width(msec.):	20 to 5100 msec.	200msec.
	Buzzer 1		
	On Time(msec.):	10 to 1270 msec.	20msec.
Off Time(msec.):	10 to 1270 msec.	20msec.	
Repeat:	1 to 20 times	1 time	
Peripheral Unit 2	Type:	Cash Drawer / Buzzer	CashDrawer
	Timing:	No Use / Document Top / Page Top / Page Bottom / Document Bottom	No Use
	Cash Drawer 2		
	Pulse Width(msec.):	200 msec. (Fix)	200msec.
	Buzzer 2		
	On Time(msec.):	10 to 1270 msec.	20msec.
Off Time(msec.):	10 to 1270 msec.	20msec.	
Repeat:	1 to 20 times	1 time	

2.3 How to setup WLAN

2.3.1 Put WiFi Dongle onto USB Type A connector and Ethernet cable to Access Point.



Supported WiFi Dongle

Brand	Model	Frequency
PLANEX	GW-USNANO2A	2.4GHz
EDIMAX	EW-7811UN	2.4GHz
D-Link	DWA-182 rev C1	2.4GHz / 5GHz
LINKSYS	WUSB6300	2.4GHz / 5GHz

2.3.2 Self-Print

Turn ON the printer with FEED button pushing.

You can find the IP Address (DHCP) on the bottom of 2nd page.

```

*** TSP85011 Ver3.0 -b1.0 ***

Interface : 100/10BASE

-- Dip Switch 1 --
Sw 12345678
On *****
Off

-- Dip Switch 1 Detail --
1 = Emulation : Star Line/T
6 = BUSY : All
7 = ASB : Valid
8 = NSB : Valid
    
```

```

Star IFBD-H101X/02X

Firmware level
Main: V1.2.0
Boot: V1.0.0
Application: V1.2.0_AirPrint

Ethernet Configuration
IP Assignment: DHCP/BOOTP
RARP: Enabled
Disconnect Message: Auto
MAC Address: 00:11:62:00:51:67

Wireless LAN Configuration
WLAN Adapter: None

SSL/TLS Security
https: Disabled
https web server port: 443
Certificate Type: Self-Signed
Self-Signed Cert: Not exist
CA-Signed Cert: Not exist

TCP/IP Settings and Services
TCP Keep-Alive: Disabled
Port 9100 printing: Single Session
Port 9100 timeout: 0 seconds

AirPrint
AirPrint Service: Disabled
Bonjour Server Name: IFBD-H101X/02X
Location: Printer location (TBA)
)
GEO Location (Latitude):
GEO Location (Longitude):

USB Host
Configuration Loading: Enabled

Star WebPRINT
WebPRINT Service: Enabled

Star CloudPRINT
CloudPRINT Service: Enabled
Poll Interval: 5 seconds
ID:

Star Cloud Services
Receipt Upload: Enabled
Retailer:
Device ID:

Interface Card DIP Switch
SW 1: OFF (DHCP Timeout Enabled)
SW 2: OFF (TFTP Recovery Disabled)

Security Notice

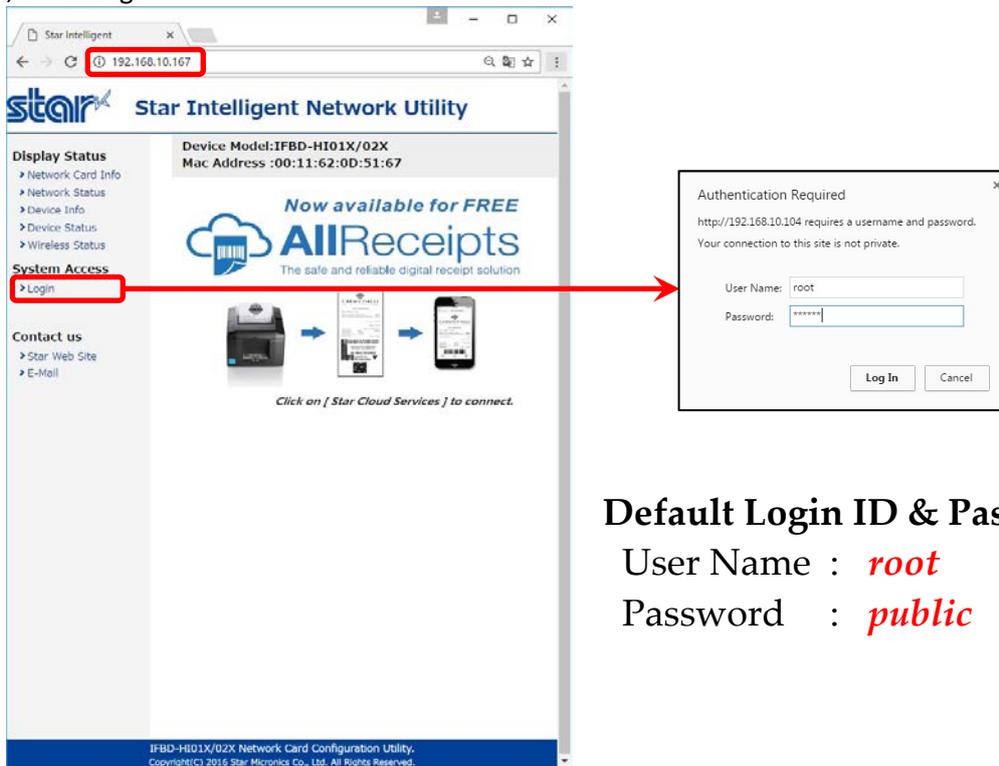
* Default password should be changed.

*****

Ethernet Network:
IP Address: 192.168.10.167 (DHCP)
Subnet Mask: 255.255.255.0
Gateway: 192.168.10.1
    
```

2.3.3 Execute Browser, then Login

Execute Browser, then put IP Address which you got from Self-Print.
And, click "Login".



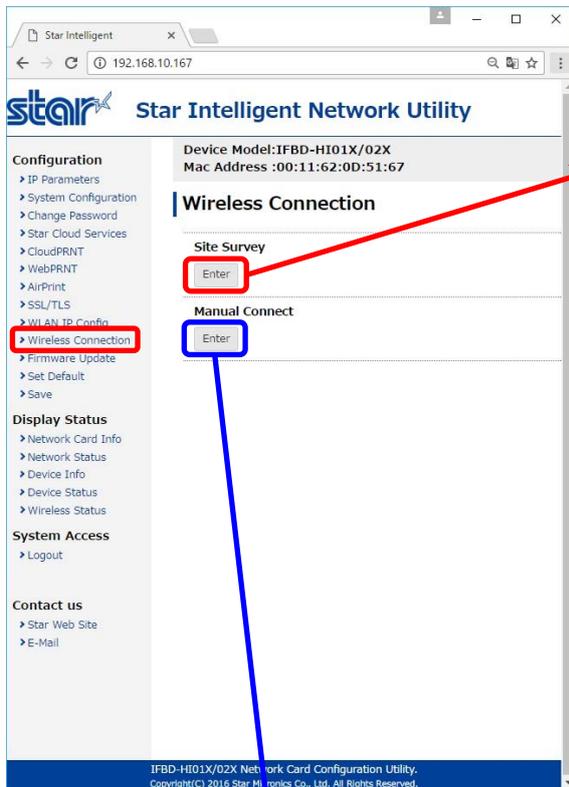
Default Login ID & Password

User Name : *root*

Password : *public*

2.3.4 Wireless Connection Settings

There are two kinds of settings to connect to Access Point, one is Site Survey and another is Manual Connect.



Site Survey

SSID	Select	Encryption
WRT160n-Sales-Bflets	Select	WPA/WPA2-TKIP/AES
WRT54G-Sales-Bflets	Select	WEP
SCS_B-Flets_2.4GHz	Select	WPA2-AES
StarWebPRINT	Select	WPA2-AES
star-tech_fct070-g	Select	WPA2-AES

Again Back

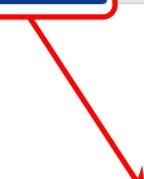


Connect Settings

SSID
WRT160n-Sales-Bflets

Key

connect cancel



Manual Connect

SSID
WRT160n-Sales-Bflets

Security
WPA2-PSK

KeyFormat
Passphrase (8-63 chars)

Encryption
AES

Key

connect cancel

Wireless configuration is accepted.

SSID :
WRT160n-Sales-Bflets

Security :
WPA/WPA2-TKIP/AES

Please execute **Save** menu if these settings are correct.

Return to [Previous page <WLAN IP Config>](#)
(Don't use "Back" button of browser to return.)



Save

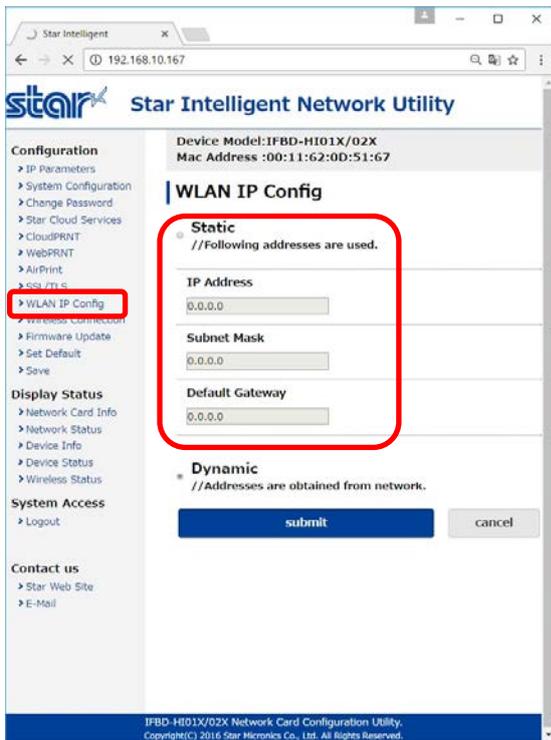
Save → Configuration printing → Restart device

Save → Restart device

execute cancel

2.3.5 WLAN IP Config

If you need to change IP Address Static, please change them, then save the settings.



IP Parameters

The following table shows the Static (fixed address) and Dynamic (dynamic address acquisition) items of the IP address that can be stored in the non-volatile memory.

Category	Setting Items	Input Range	Initial Value (Factory Default)
Static	IP Address	0.0.0.0 to 255.255.255.254	0.0.0.0
	Subnet Mask	0.0.0.0 to 255.255.255.255	0.0.0.0
	Default Gateway	0.0.0.0 to 255.255.255.255	0.0.0.0
Dynamic	DHCP/BOOTP	ENABLE / DISABLE	ENABLE
	RARP	ENABLE / DISABLE	ENABLE

Note: If setting Static to anything other than 0.0.0.0, set all Dynamic to DISABLE. If setting Dynamic to ENABLE, set all Static to 0.0.0.0.

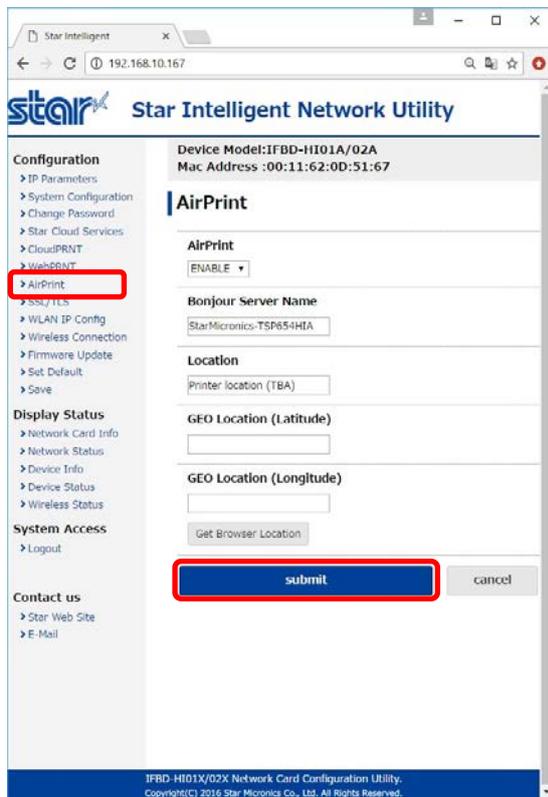
After change the settings, please click “submit” and save the settings.



2.3.6 AirPrint Settings

This is settings for AirPrint.

If you need to change below settings, please change them, then save the settings.



[Example of setting list]

Item	Value	Notes
AirPrint	ENABLE (*1) or DISABLE	
Bonjour Server Name	StarMicronics-TSP654HIA (*1)	max 63 characters
Location	Printer location (TBA) (*1)	max 127 characters
GEO Location (Latitude)		(*2)
GEO Location (Longitude)		(*2)

(*1) Default value

(*2) If "Get Browser Location" button cannot work,
please see following examples or set "SSL" setting and open by "https".

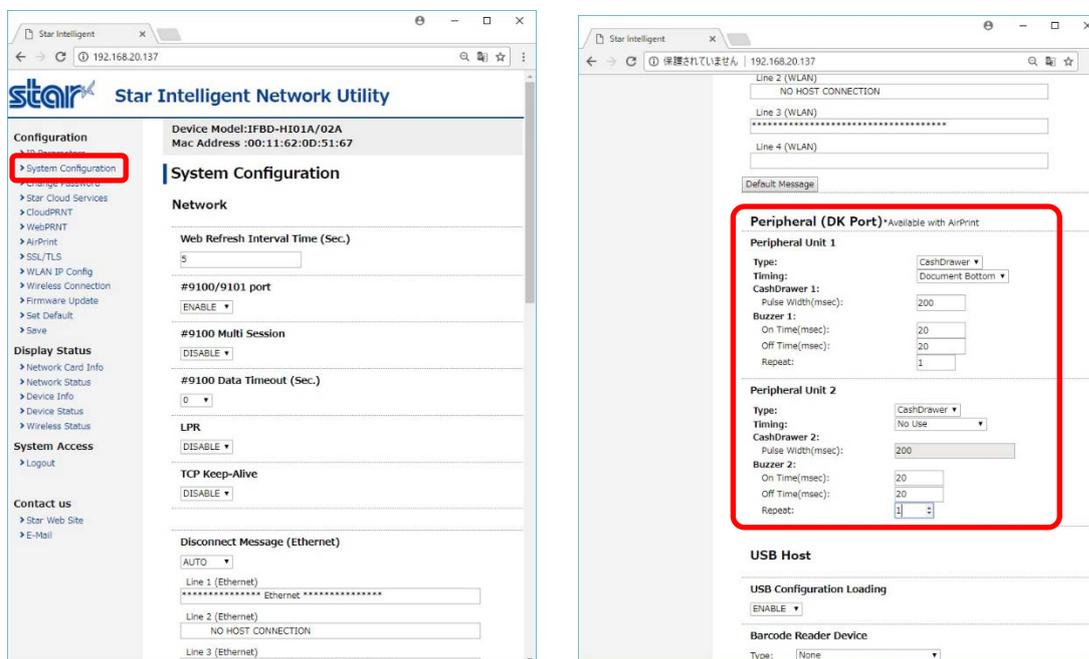
[Example of location]

Location	SMJ (Japan)	SMA (US)	SME (UK)	SMSA (Thailand)
Latitude:	35.0144857	40.4846472	51.6199034	13.7269006
Longitude:	138.451635	-74.5119392	-0.7113674	100.5311396

2.3.7 Peripheral (DK Port) Settings

This is setting for Cash Drawer and Buzzer control for AirPrint, it can be changed at "System Configuration" on the menu list.

Refer to the below settings, then submit and save the settings.



	Value	Default Value	
Peripheral Unit 1	Type:	Cash Drawer / Buzzer	CashDrawer
	Timing:	No Use / Document Top / Page Top / Page Bottom / Document Bottom	Document Bottom
	Cash Drawer 1		
	Pulse Width(msec.):	20 to 5100 msec.	200msec.
	Buzzer 1		
	On Time(msec.):	10 to 1270 msec.	20msec.
Off Time(msec.):	10 to 1270 msec.	20msec.	
Repeat:	1 to 20 times	1 time	
Peripheral Unit 2	Type:	Cash Drawer / Buzzer	CashDrawer
	Timing:	No Use / Document Top / Page Top / Page Bottom / Document Bottom	No Use
	Cash Drawer 2		
	Pulse Width(msec.):	200 msec. (Fix)	200msec.
	Buzzer 2		
	On Time(msec.):	10 to 1270 msec.	20msec.
Off Time(msec.):	10 to 1270 msec.	20msec.	
Repeat:	1 to 20 times	1 time	

3 Printing

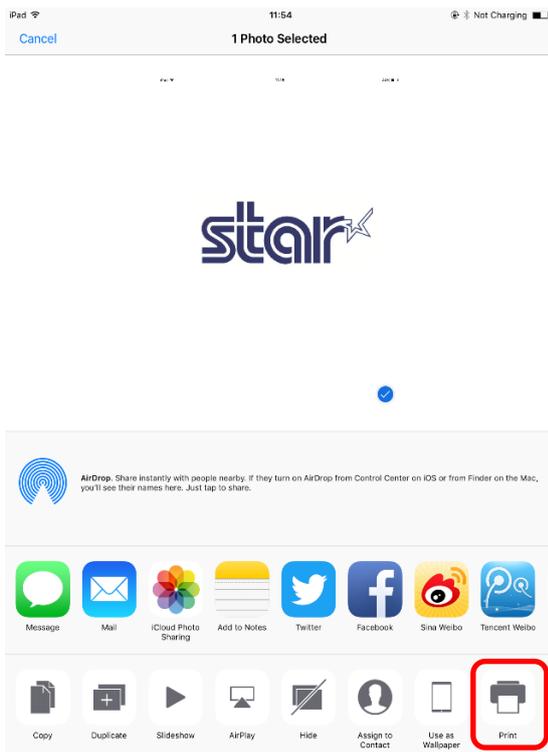
3.1 How to Print

*In case of printing photos

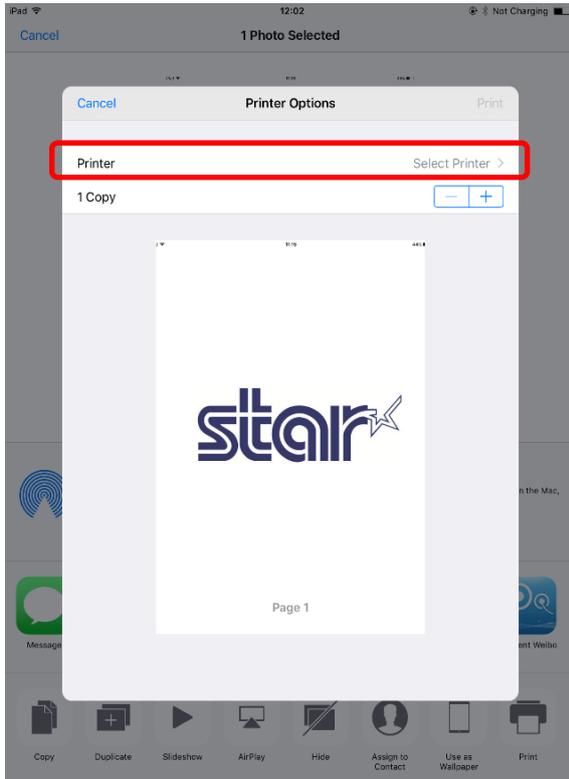
3.1.1 Please select "**Photos**", then select picture(s)



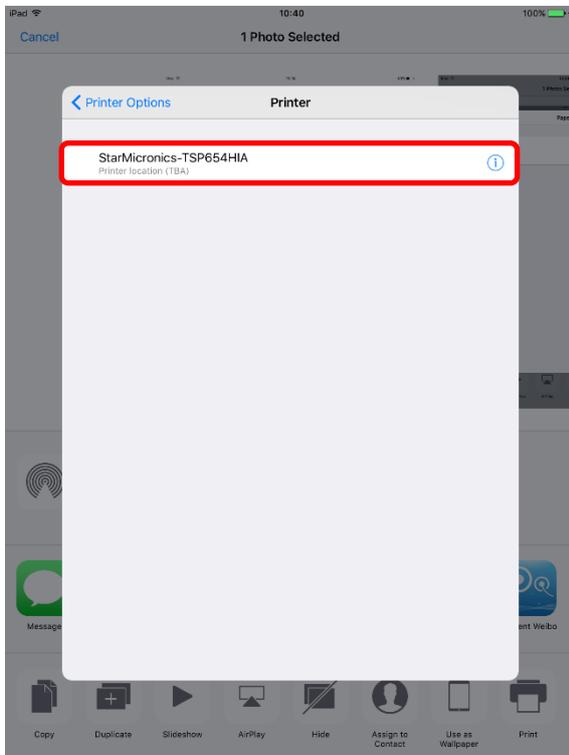
3.1.2 Please select "**Print**".



3.1.3 Please select "Printer".

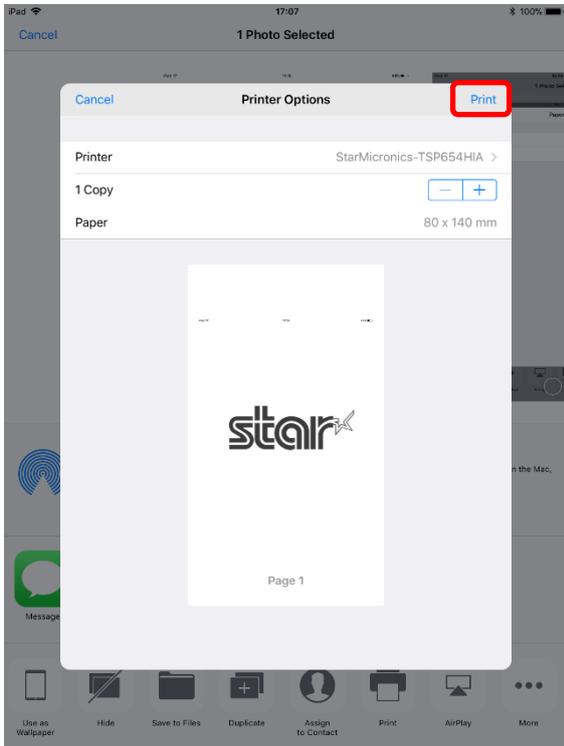


3.1.4 Please select "StarMicronics-TSP654HIA".

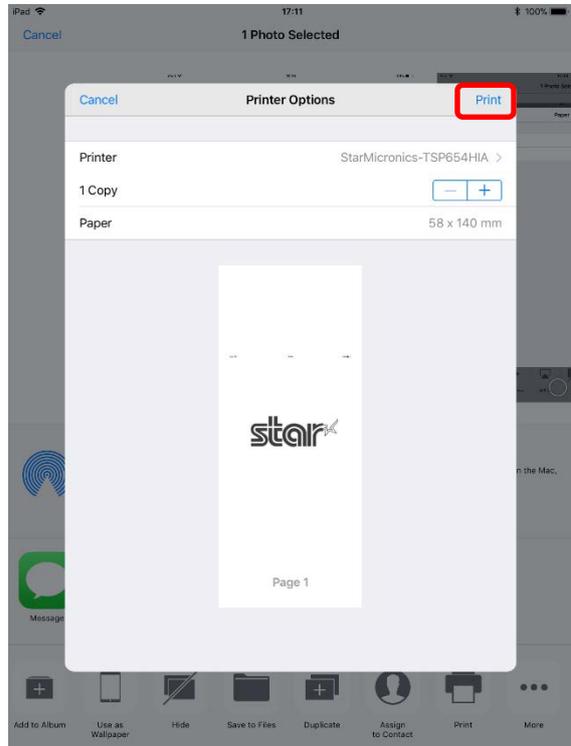


3.1.5 Please click "Print", then you can get print out.

If set the Printable Area 72mm by MSW 4, 80 x 140mm is indicated.



If set the Printable Area 50.8mm by MSW 4, 58 x 140mm is indicated.

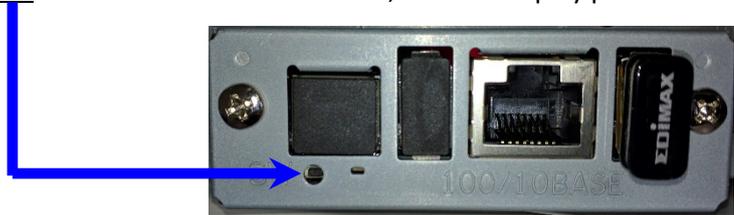


4 Trouble shooting

4.1 How to initialize Ethernet settings to factory default settings.

If you need the Ethernet settings to factory settings, please do the following operation.

While the TCP/IP is operating, if the **push switch** is continued to be held down, the LED display pattern will change according to the times shown below.



Phase	Phase SW Pressing Time	LED Pattern		Special Mode
		Color	Pattern	
1	1 second to less than 5 seconds	Yellow	Blinking	Reserved (Undefined)
2	5 second to less than 9 seconds	Red	Blinking	NIC setting initialize mode (*2)
3	9 second to less than 13 seconds	Green	Blinking	Reserved (Undefined)
	over 13 seconds (*1)			

*1 When Phase 3 is exceeded, press the switch for 1 second to return to Phase 1.

*2 Execution procedures for the NIC setting initialize mode

- A) After entering this mode, press the push switch once and release it. The LED display will be “Extinguished” and the initializing of the NIC settings in the non-volatile memory will begin.
- B) If the initialization is successful, the printer will automatically be reset.
Do not turn off the power or apply a reset until this reset has been applied.
Also, if the NIC setting initialization fails, the LED display will be “Red Lit” and all operations will stop.
If so, turn the power off.

Note: When turning the power on, a different mode (automatic firmware update function using TFTP client) will startup that is different to the above functions, for the operations when turning the power on with the push switch pressed.



Star Micronics is a global leader in the manufacturing of small printers. We apply over 50 years of knowhow and innovation to provide elite printing solutions that are rich in stellar reliability and industry-respected features. Offering a diverse line of Thermal, Hybrid, Mobile, Kiosk and Impact Dot Matrix printers, we are obsessed with exceeding the demands of our valued customers every day.

We have a long history of implementations into Retail, Point of Sale, Hospitality, Restaurants and Kitchens, Kiosks and Digital Signage, Gaming and Lottery, ATMs, Ticketing, Labeling, Salons and Spas, Banking and Credit Unions, Medical, Law Enforcement, Payment Processing, and more!

High Quality POS Receipts, Interactive Coupons with Triggers, Logo Printing for Branding, Advanced Drivers for Windows, Mac and Linux, Complete SDK Packages, Android, iOS, Blackberry Printing Support, OPOS, JavaPOS, POS for .NET, Eco-Friendly Paper and Power Savings with Reporting Utility, ENERGY STAR, MSR Reading, *future*PRNT, StarPRNT... How can Star help you fulfill the needs of your application?

Don't just settle on hardware that won't work as hard as you do. Demand everything from your printer. Demand a Star!

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