ProxiPRNT

User Guide

Rev1.0

■NOTICE

- The contents of this manual are subject to change without notice.
- All efforts have been made to ensure the accuracy of the contents of this manual at the time of writing. However, should any errors be detected, STAR would greatly appreciate being informed of them.
- The above notwithstanding, STAR assumes no responsibility for any errors in this guide.

1. Introduction

1.1 About ProxiPRNT

ProxiPRNT allows remote access to Star products based on the physical proximity of the smart devices used by the users.

ProxiPRNT is a useful solution for mPOS environments where the smart device communicates with Star products wirelessly, especially in the following scenarios.

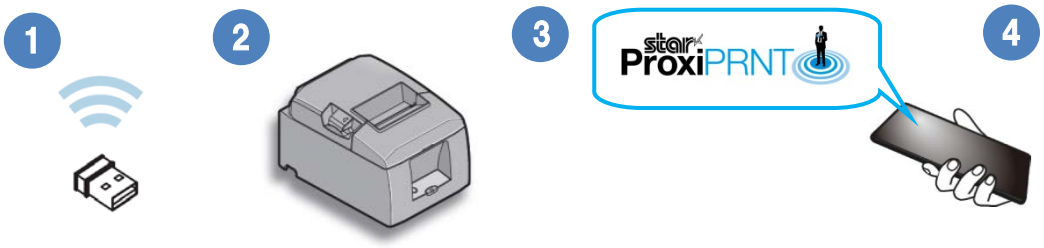
e.g. For line-busting applications, where salesclerks share a common printer.

ProxiPRNT can enable/disable operation of Star products equipped with ProxiPRNT beacons directly from a smart device, based on the signal strength of the ProxiPRNT Beacon and the threshold set by a ProxiPRNT enabled application.

Please read this document before prior to testing to ensure proper use.

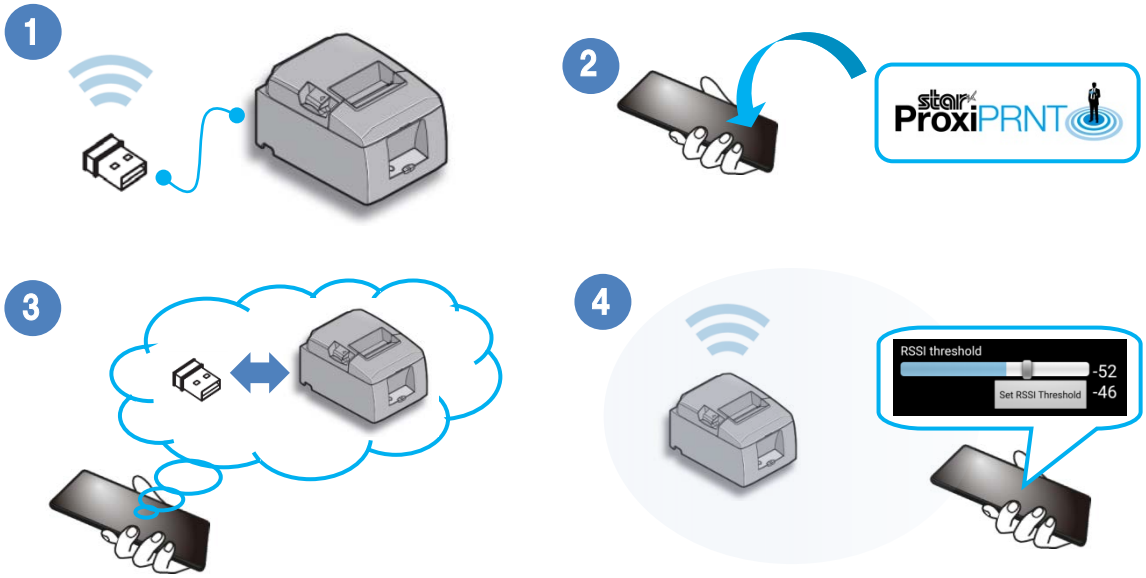
The following 4 items are needed to use ProxiPRNT.
Please see the section “2. Compatible Products” for the detail.

1. BLE device for ProxiPRNT (ProxiPRNT Beacon)
2. Star Product
3. ProxiPRNT enabled Application (ProxiPRNT-enabled App)
4. Smart device with BLE



ProxiPRNT installation takes only 4 steps.
Please see the section”3. Hardware Setup” or ”4. Software Setup” for the detail.

Step1: Install the ProxiPRNT Beacon and the Star Product
Step2: Install your ProxiPRNT-enabled App on the smart device
Step3: Associate the ProxiPRNT Beacon with a Star Product using your ProxiPRNT-enabled App
Step4: Set your threshold distance based on how near or far away from the ProxiPRNT Beacon you would like to be able to control the Star Product.



1.2 Precautions for Use

ProxiPRNT uses BLE radio waves and the radio strength varies depending on the following influence. Therefore the radio strength is not always same even if the distance of ProxiPRNT Beacon and the smart device are same.
Please note that ProxiPRNT defines enable/disable to operate the Star Products based on the radio strength of BLE from the ProxiPRNT Beacon and NOT based on the distance.

- The actual radio wave environment
- An installation place of the ProxiPRNT Beacon
- A direction of the smart device
- The presence or absence of the cover case of smart device
- The difference of the model of the smart device
- A user's handling way of the smart device etc.

When you specify the threshold value for the ProxiPRNT Beacon, use the actual device in the actual operation environment in conformity with the use conditions of the smart device.
Before starting the actual field operation, please check sufficiently that the device does not work in the unintended environment and adjust the threshold.

ProxiPRNT requires to associate the ProxiPRNT Beacon and the Star Product in the ProxiPRNT-enabled App. Please check sufficiently that the combination of the ProxiPRNT Beacon and the Star Product is correct.

STAR can assume no responsibility for any losses that may occur through the user's setting, the user's operation environment and so on.

2. Compatible Products

The BLE device which supports ProxiPRNT (ProxiPRNT Beacon) and the Star Product are required to use ProxiPRNT.

Please see the list of ProxiPRNT Beacon and Star Products for the detail.

Please see the hardware manual for the detail of the Star Products.

http://www.star-m.jp/prjump/000034.html

2.1 ProxiPRNT Beacon

model	note
BLED10-U	USB dongle with BLE. 5Vdrive (3.6V-5.5V). USB Type A. Safety Approvals: TELEC / CE / FCC / IC / KCC

■RECCOMENDATION

We recommend using “DK-USB Power module” for supplying power to the ProxiPRNT Beacon when you use the Star Printer. Please contact the dealer that you bought the product from about DK-USB Power module.

2.2 Star Products compatible with ProxiPRNT

Model	Interface			
	USB(*)	Ethernet		Bluetooth
		Wired	Wireless	
TSP100U	✔			
TSP100GT	✔			
TSP100LAN		✔		
TSP650	✔	✔		
TSP650II	✔	✔		✔
FVP10	✔	✔		✔
TSP700II	✔	✔		✔
TSP800II	✔	✔		✔
TUP500	✔	✔		
TUP900	✔	✔		
DK-AirCash		✔	✔	✔

*To use a USB interface device, Apple AirMac series are required.

■NOTE

TSP100ECO can not supply power stably from DK-port to the ProxiPRNT Beacon because of its power-saving mode. Please do NOT use TSP100ECO as power supply for the ProxiPRNT Beacon.

2.3 About Smart Device for using ProxiPRNT

The smart device with BLE is required to use ProxiPRNT. Please confirm your device has BLE before use.

■NOTE

Some of smart devices do not work with ProxiPRNT. Please check that your device works with ProxiPRNT before use.

Nexus7 (2013 Asus) does not work properly with ProxiPRNT. Please do NOT use it with ProxiPRNT.

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3. Hardware Setup

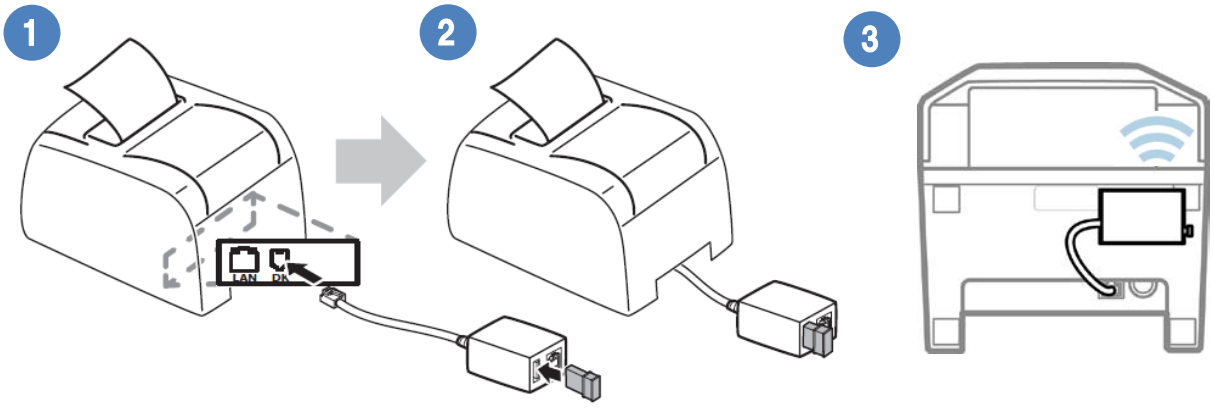
3.1 Connecting a ProxiPRNT Beacon to a Star Printer

The USB dongle with BLE is required if you use ProxiPRNT with the Printer.
Show how to connect the ProxiPRNT Beacon to a Star Printer with DK-USB Power module as below.

① Plug the DK-USB Power module into the DK-port of the Star Printer.

② Plug the ProxiPRNT beacon into the USB port of the DK-USB Power module.

③ Secure f on the back of the Star Printer with the double-sided tape.



■NOTE

- Make sure that the printer is turned off and unplugged from its AC outlets before you make connections.
- Take into consideration the noise in the environment that the printer is installed in and take appropriate measures to protect the printer from static electricity, AC line noise, etc.
- Do NOT tuck the DK USB Power module with ProxiPRNT beacon inside the printer to avoid signal obstruction.

3.2 Connecting a ProxiPRNT Beacon to a DK-AirCash

The USB dongle with BLE is required if you use ProxiPRNT with the DK-AirCash.

Note: Please see the DK-AirCash manual for the initial setting of DK-AirCash.

Show how to connect the ProxiPRNT Beacon to a DK-AirCash as below.

① Plug the ProxiPRNT beacon into the USB port of DK-AirCash

② Secure the DK-AirCash on the Cash Drawer (with the double-sided tape and so on.)

■NOTE

- Make sure that the printer is turned off and unplugged from its AC outlets before you make connections.
- Take into consideration the noise in the environment that the printer is installed in and take appropriate measures to protect the printer from static electricity, AC line noise, etc.
- Do NOT put the DK-AirCash with ProxiPRNT Beacon in the place where it catches signal obstruction.

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4. Software Setup

4.1 Precautions for Software Setup

The ProxiPRNT-enabled App is required to use ProxiPRNT.
Please set your App in accordance with the guideline provided by the provider.

This section show the notification and the recommendation for ProxiPRNT setup with StarIO SDK which provided by Star as an example.

Please read this section to set ProxiPRNT correctly and to use ProxiPRNT safety because the ProxiPRNT technology is same on every ProxiPRNT-enabled App.

■NOTE

- ProxiPRNT requires associating the ProxiPRNT Beacon and the Star Product in the ProxiPRNT-enabled App. Please check sufficiently that the combination of the ProxiPRNT Beacon and the Star Product is correct. After associating, please do NOT change the Bluetooth device/port name or IP address of the Star Products.

- When you specify the threshold for the ProxiPRNT Beacon, use the actual device in the actual operation environment in conformity with the use conditions of the smart device.
  e.g. The presence or absence of the cover case of smart device
  The difference of the model of the smart device. etc.

- If you can not obtain the stable operative condition at the actual operation, the operating conditions for setting the threshold value such like a direction and an angle of the smart device may not be reproduced. Please re-adjust the threshold.

- Before starting the actual field operation, please check sufficiently that the Star Product does NOT work in the unintended environment and adjust the threshold.

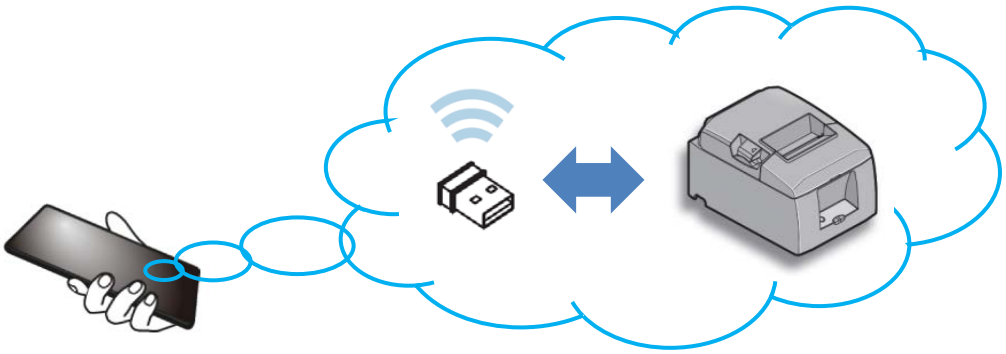
- Do NOT move the ProxiPRNT Beacon and the Star Product after having finished setting the threshold. This would be the cause that the Star Product works in the unintended environment.

4.2 Associating the ProxiPRNT Beacon and the Star Product

ProxiPRNT defines enable/disable to operate the specified Star Product, based on the radio strength from the ProxiPRNT Beacon.
Therefore it requires defining that “this ProxiPRNT Beacon” is associated with “this Star Product” before starting operation. This shall be called “association”.
In addition, it requires setting the specified name to the association to distinguish from the others. This name shall be called “Nick Name”.

The association and setting the Nick Name can be set in the ProxiPRNT-enabled App. Please check sufficiently that the combination of the ProxiPRNT Beacon and the Star Product is correct.

This section shows the example how to associate the TSP650IIBI with ProxiPRNT Beacon and how to set the Nick Name by using StarIO SDK as sample.



CAUTION

When using multiple the Bluetooth interface model of Star Products with ProxiPRNT, it requires changing the Bluetooth device/port name of the product to individual name before the association. The Bluetooth device/port name of the product can be changed by Star Setting Utility. Please download the app from the following URL. (You can find the app with “starmicronics” on the store.)

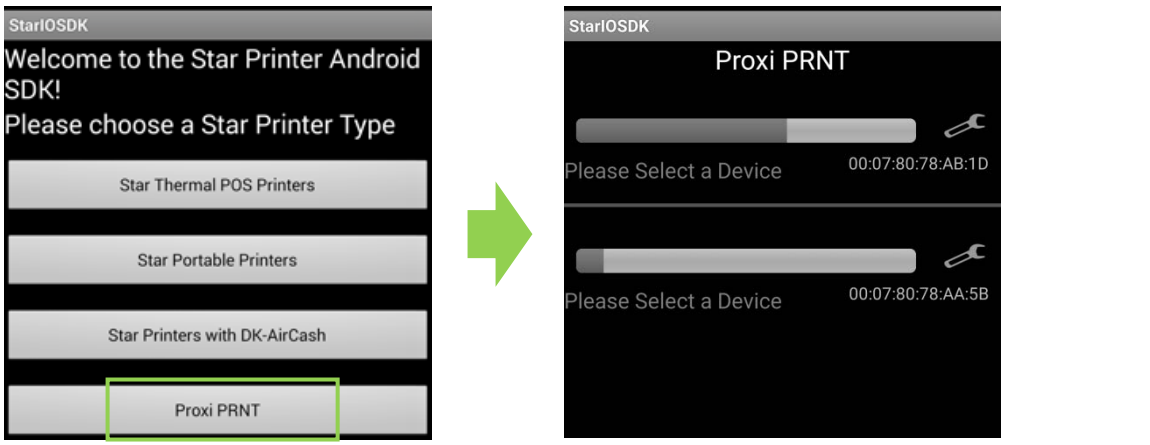
iOS Star Setting Utility	http://www.star-m.jp/prjump/000003.html
Android Star Setting Utility	http://www.star-m.jp/prjump/000004.html

Show how to associate BLED10-U with TSP650IIBI by using StarIO SDK as below.

① Connect the BLED-10U to the TSP650IIBI and turn the TSP650II power to on.

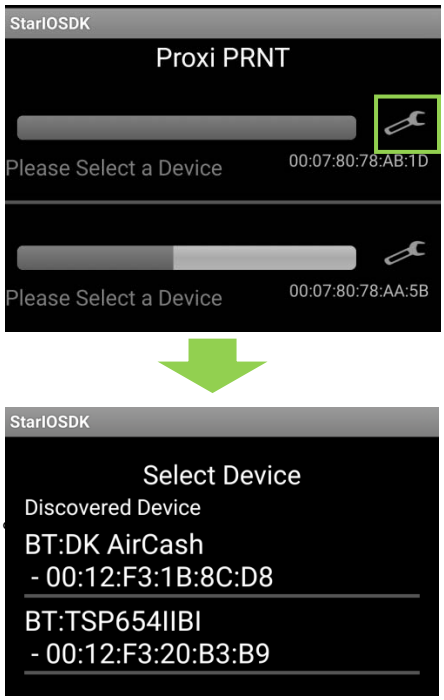
② Open the “StarIO SDK” and select “ProxiPRNT”

* The radio strength of BLED10-Us is shown.

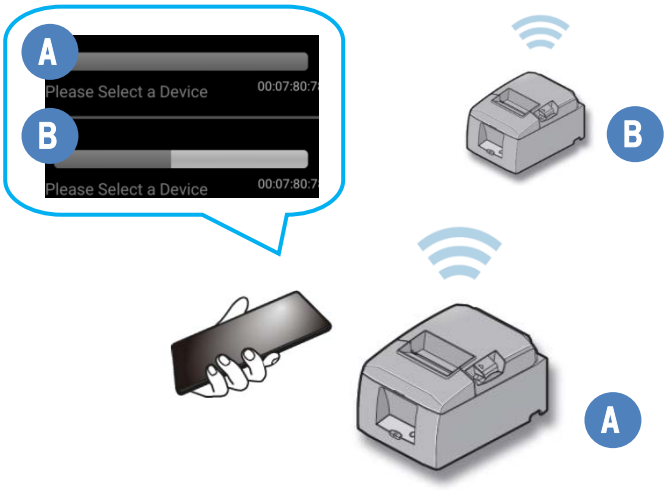


Note: When using multiple ProxiPRNT Beacons, the multiple radio strength are shown.

③ Tap setting button of the target BLED10-U, then select the TSP650IIBI to associate.

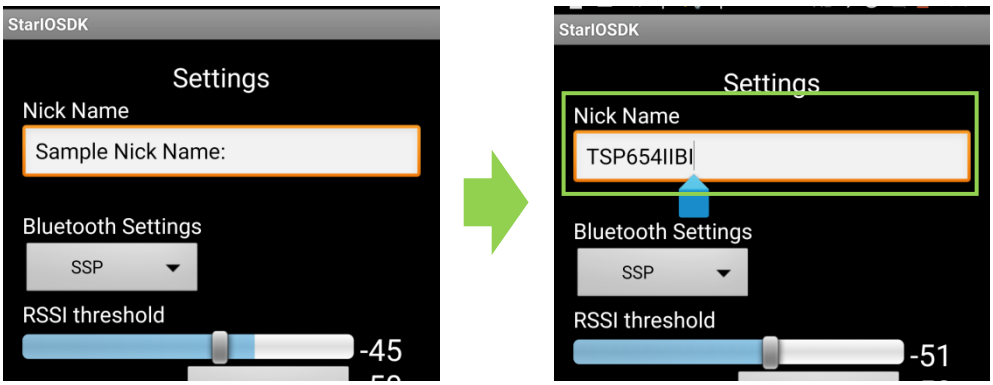


Note: When using multiple ProxiPRNT Beacons, you can identify the Beacon by moving your smart Device close to the ProxiPRNT Beacon and checking that the radio strength level has increased.

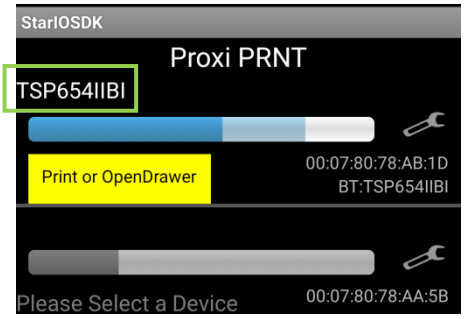


④ Set a nickname for the TSP650IIBI and ProxiPRNT Beacon combination

*Set “TSP654IIBI” as Nick Name in this example.



*The Nick Name which is set by you is reflected in the front display



■NOTE

- Please check sufficiently that the combination of the ProxiPRNT Beacon and the Star Product is correct with the test. Please see “4.4 Testing ProxiPRNT” for the test.
- After associating the ProxiPRNT Beacon and the Star Product, please do NOT change the Bluetooth device/port name or IP address of the Star Product.

To associate TSP650IIBI and BLED10-U is complete.
Next, it requires defining the threshold of the radio strength to enable to operate TSP650IIBI.

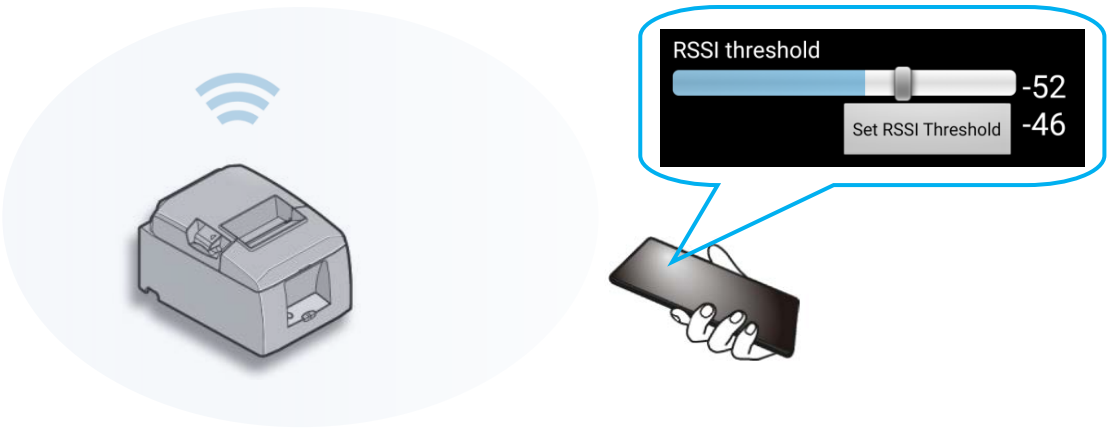
4.3 Setting the Radio Strength Threshold

ProxiPRNT defines enable/disable to operate the specified Star Product, based on the radio strength from the ProxiPRNT Beacon. The user can operate the Star Product from the smart device only when the user enter the area where the radio strength of the ProxiPRNT Beacon is higher than the specified radio strength. This specified radio strength shall be called "the threshold".

The higher the threshold, the closer distance you need to be. You will want to set the threshold at the point of teetering when you are at your desired distance.

The threshold is set in the ProxiPRNT-enabled App.
When you specify the threshold for the ProxiPRNT Beacon, use the actual device in the actual operation environment in conformity with the use conditions of the smart device.

Show an example of the setting the threshold using StarIO SDK in this section.

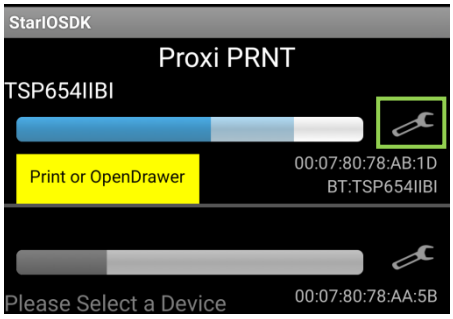


■RECOMMENDATION

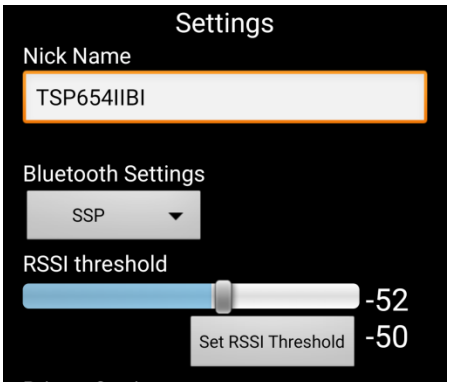
We recommend setting the threshold in close proximity of the ProxiPRNT Beacon to get more accurate switching of the Star Product operation. Please see page 18 for the detail.

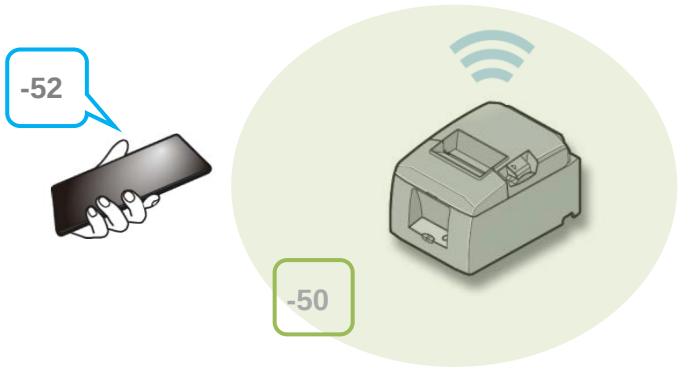
The following shows an example of the setting the threshold using StarIO SDK.
(These are continuation from section 4-2.)

① Tap the set button of BLED10-U(TSP654IIBI) which has associated, then go to “Setting”.

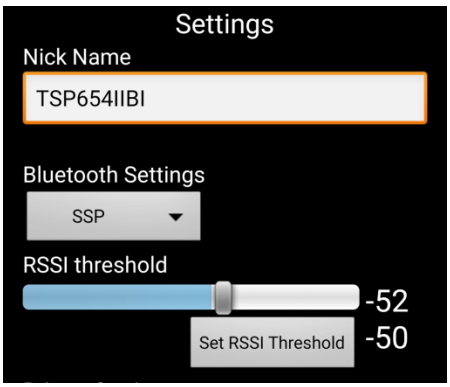


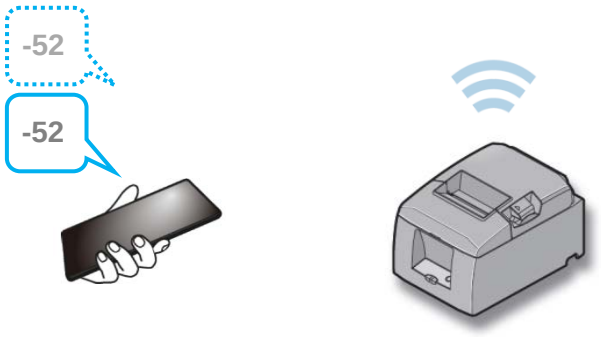
*The current radio strength and the default threshold (-50) is shown.



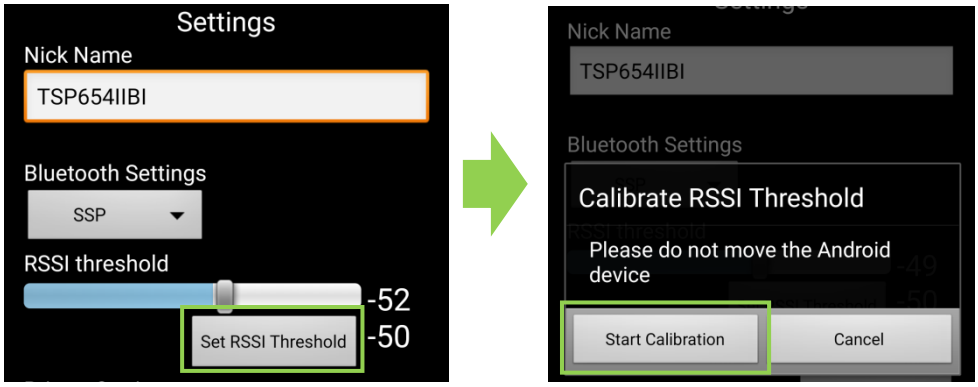


② Stand in close proximity (within 0.5m distance) of TSP650IIBI (BLED10-U) and check the radio strength is stable on the App.





③ Tap “Set RSSI Threshold” button, then tap “Start Calibration” button to start calibration for the threshold. To set the threshold is complete after displaying “It’s processing”.



*“-46” is the threshold which was set

NOTE: Keep the smart device immobile while the device is showing “It’s processing”.

■NOTE

Do NOT move the ProxiPRNT Beacon and the Star Product after having finished setting the threshold. This would be the cause that the Star Product works in the unintended environment.

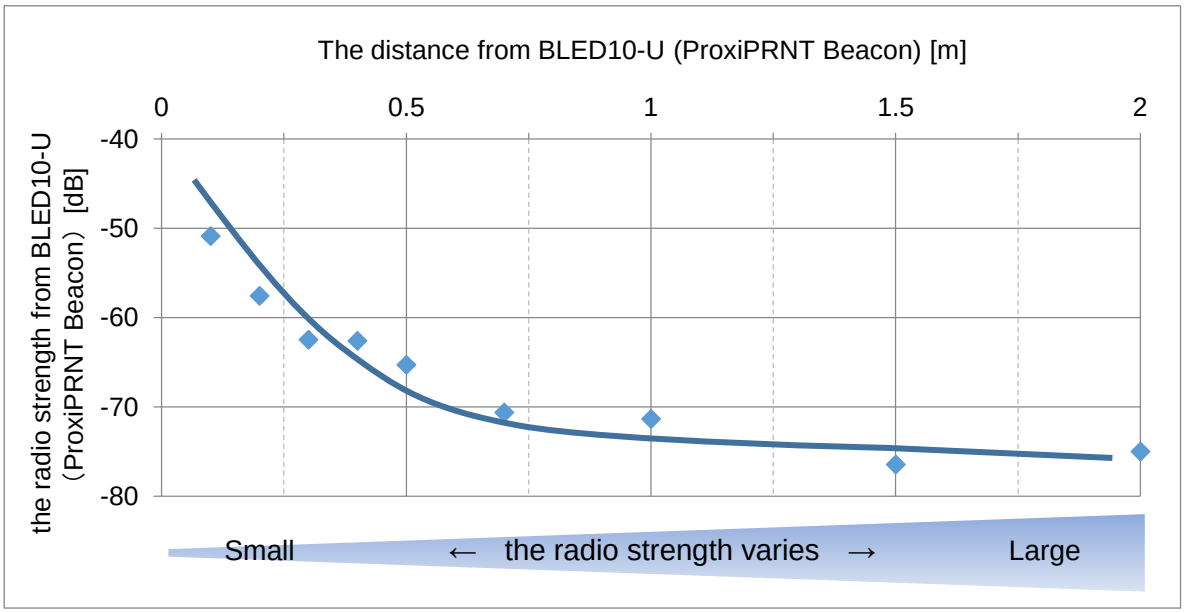
To set the threshold is complete.

■REFERENCE

The following graph shows the relation between the radio strength from the BLED10-U (ProxiPRNT Beacon) and the distance from the ProxiPRNT Beacon.

*At our environment (The environment with a several obstacles of the electric wave)

*Connect BLED10-U and TSP650IIBI and measure it in the front side of TSP650IIBI.



The relation between the radio strength and the distance from the ProxiPRNT Beacon.

1. The radio strength varies becomes larger as the distance from the Beacon becomes remote.
2. There are 2 types of the characteristic of the radio strength, depending on the distance.

Type A / Proximity (within 0.5m from the Beacon):

- The radio strength change is small depending on the distance

Type B. Near (from 1.0m to a several meters):

- The radio strength change is large depending on the distance

■RECCOMANDATION

Please set your threshold according to your usage referring to the above characteristics.

*1 e.g. Set the threshold in the proximity of the Beacon (at 0.3m), if you need to get more accurate switching of the Star Product operation.

*2 e.g. Set the threshold near the Beacon (at 1.0m), if you need to operate the Star Product only near the Star Product (within a several meters).

4.4 Testing your ProxiPRNT Setup

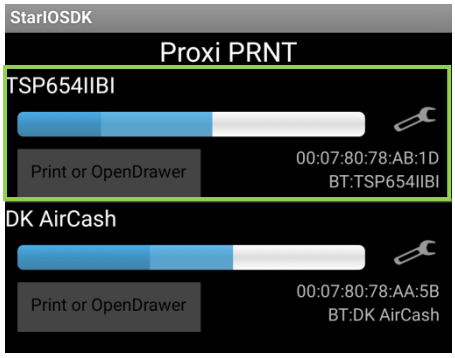
Before starting the actual field operation, check sufficiently that the device does not work in the unintended environment and that the combination of the ProxiPRNT Beacon and the Star Product are correct.

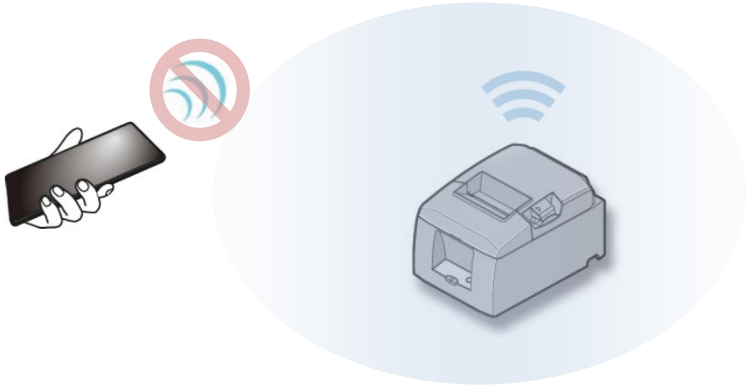
Show an example of the ProxiPRNT test using StarIO SDK in this section.

The following shows an example of the ProxiPRNT test using StarIO SDK.
(These are continuation from section 4-3.)

① Move to far from the TSP650IIBI (the outside of the threshold distance)

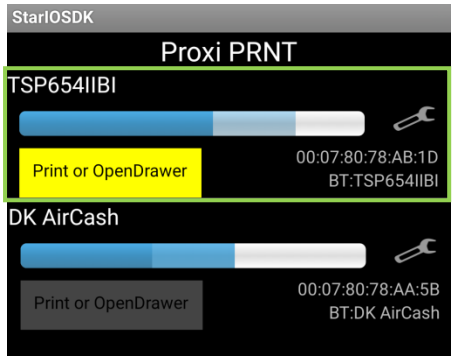
*The “Print or Open Drawer” button is gray-out if the radio strength is lower than the threshold, then you can not execute print test.

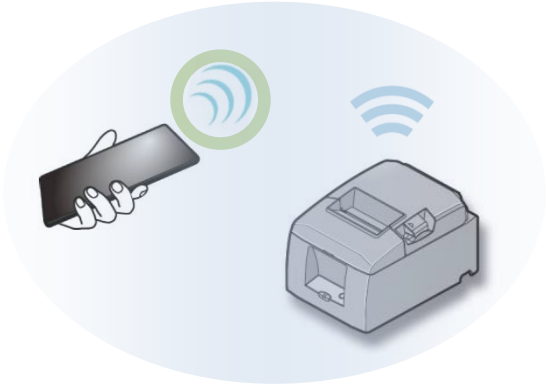




② Move to in close proximity of the TSP650IIBI (the inside of the threshold distance)

*The “Print or Open Drawer” button is highlighted if the radio strength is higher than the threshold, then you can execute print test.





③ Check sufficiently that the device does not work in the unintended environment by repeating ① and ②

■NOTE

If you can not obtain the stable operative condition at the actual operation, the operating conditions for setting the threshold value such like a direction and an angle of the smart device may not be reproduced. Please re-adjust the threshold.

To test ProxiPRNT is complete.

5. Release History

Rev. No.	Date (Month/Day/Year)	Contents
Rev. 1.0	Sep 1, 2015	New Release

URL: ***http://www.starmicronics.com/support/***