



# Switch Manager Mobile App

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**for SESPM1040-541-LT-xx**

**Self-Enclosed Managed Hardened Gigabit Ethernet PoE++ Switch**



**User Guide**

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# 1. Introduction

The Transition Networks SESPM1040-541-LT-xx Switch is a Layer 2 managed switch with (4) 10/100/1000Base-T PoE++ (IEEE 802.3bt) ports and (1) combination 10/100/1000Base-T RJ-45 or 100/1000Base-X SFP uplink port (additional optional ports available), that is ideal for use in security and surveillance, PoE lighting, digital signage and many other applications.

The switch is equipped with Near Field Communication (NFC) to allow simple, repeatable switch configuration with a user-friendly app on a mobile device prior to connecting or powering up the switch.

The switch allows Bluetooth Low Energy (BLE) remote access to alarm information or to read or change equipment settings without requiring physical access using inconvenient ladders or scissor lift rental. The switch also has integrated management software for setup, monitoring, and control of connected devices.

The Switch Manager Mobile App provides mobile interface through NFC and BLE to connect to, allow switch configuration, and perform remote diagnosis and troubleshooting for the switch from a smart phone or tablet, without having to climb a ladder or scissor lift to connect to the switch.

The integrated NFC saves time and labor expense by allowing laborers of any skill level to easily configure the switch prior to powering up and to repeat the configuration across multiple switches.

The integrated BLE Antenna allows remote access to the switch for troubleshooting and changing settings, reducing time and hassles related to console cables and ladders or scissor lifts.

## Related Manuals

The following manuals are available on the SESPM1040-541-LT-xx Series product page at <https://www.transition.com/products/switch/sespm1040-541-lt-xx-series/>

SESPM1040-541-LT-xx Quick Start Guide, 33783

SESPM1040-541-LT-xx Install Guide, 33772

SESPM1040-541-LT-xx Operation Guide, 33773

SESPM-4P-PMB Pole Mount Bracket Kit Option Install Guide, 33774

SESPM-4P-FMK Fiber Management Kit Option Install Guide, 33775

SESPM-4P-DIG Digital Input/Output Kit Option Install Guide, 33776

SESPM-2P-1G-CP One Gb Additional Combo Port Module Option Install Guide, 33779

SESPM-2P-24V-CP Option Install Guide, 33829

Release Notes (version specific)

## For More Information

A printed Quick Start Guide is shipped with each switch.

For Transition Networks Drivers, Firmware, etc. go to the [Product Support](#) webpage (logon required).

For Transition Networks Manuals, Brochures, Data Sheets, etc. go to the [Support Library](#) (no logon required).

**Note:** Information in this document is subject to change without notice. Note that this manual provides links to third party web sites for which Transition Networks is not responsible.

## 2. Installation and Operation

### System Requirements

Note that anti-virus and password protection are recommended with BLE operation.

- Tablet : any with Android OS, NFC, and BLE capability
- Smart Phone: any with Android OS, NFC, and BLE capability
- Browser: current version of most popular web browsers

### Software Components

The SESPM1040-541-LT-xx interfaces with the following software elements:

- Web UI on a desktop or laptop
- CLI (Command Line Interface)
- Smartphone or tablet via NFC
- Smartphone or tablet via BLE

### Automatic Operation

The SESPM1040-541-LT-xx switch performs these operations automatically:

- Shut down the switch if an over temperature condition is detected. If the temperature within the enclosure exceeds 70°C the switch will power off automatically.
- Shut off power to a port in case of a port being over powered. If PD power exceeds power available, ports will shut down according to priority settings (see the [poe priority](#) command in the Operation Guide).
- Load NFC configuration at boot up. An option exists to disable this feature. See the Operation Guide.
- Update PoE firmware at boot up. This can also be done via CLI and Web UI. The switch will only update PSE firmware automatically if it can correctly determine the current running version. Otherwise, the message *"Unable to determine running PSE firmware version, exiting PSE firmware update"* displays.

## Quick Instructions

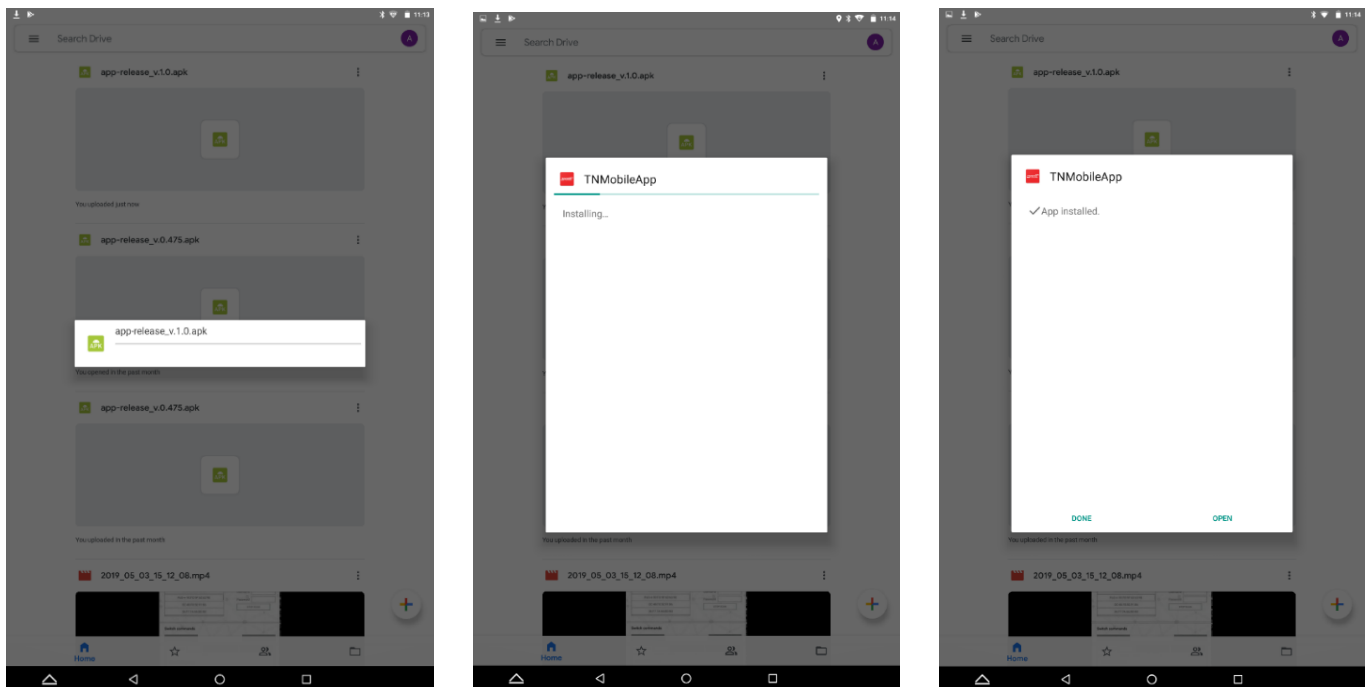
Following are quick instructions for installing and using the Switch Manager Mobile App. For detailed instructions, including screenshots, see pages 10-20.

## How to Obtain and Install

Transition Networks Switch Manager Mobile App was designed to allow users to take advantage of the convenience features of Near Field Communications (NFC) and Bluetooth Low Energy (BLE) that are provided in the Self-Enclosed Managed Hardened Gigabit Ethernet PoE++ Switch (SESPM1040-541-LT-xx- Series).

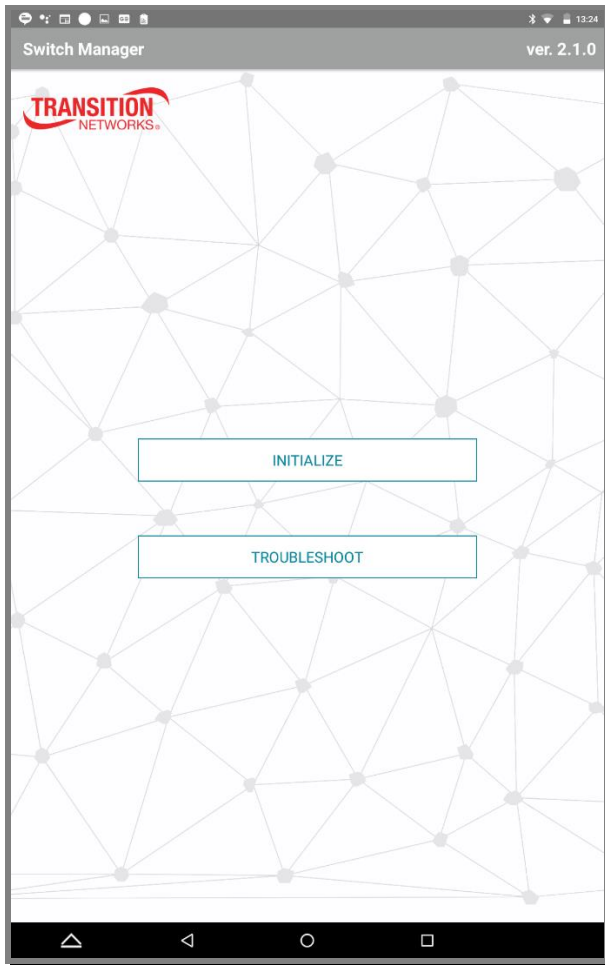
The Mobile App can be used on a mobile phone or tablet equipped with an Android-based Operating System, NFC reader, and BLE capability. To access the Switch Manager Mobile App:

1. Using the web browser on your mobile phone or tablet, go to the [Download Request](#) page ([Log In required](#)).
2. Fill out the form to get the link for download.
3. Read the End User License Agreement; check the box that you have read and agree to the terms and hit Submit.
4. A Transition Networks representative will confirm that you are authorized to access the Mobile App and send you a link to download. This could take up to 24 hours.
5. Download and save the Switch Manager Mobile App (e.g., app-release\_v.2.1.0.apk) to a location on your mobile device.
6. When you select the Mobile App it will ask you if you want to install it. Select INSTALL. The message “Installing...” displays momentarily. When the install is complete the message “App installed.” displays.



7. After the install, a prompt displays the options “Done / Open”. Click Open.

8. To open the Mobile App, select the **Mobile App** button with the Transition Networks logo. The Home page displays:



9. From the home page there are two options:

**Initialize** is used with NFC to pre-configure the switch prior to installation.

**Troubleshoot** is used with BLE to access the switch to check or change configuration or reboot the switch after installation without having to physically access the switch with a cable.

The options are described below.

The ideal use case is for the switch to be pre-configured through NFC (the Mobile App) prior to installation or bootup. The switch is then installed in an out-of-reach location (i.e. high on a pole/wall). The switch is powered up and the configuration is set in the switch. At this point, the NFC is no longer used for configuration changes (i.e., no one should have to climb the pole to get close enough to make changes - and no unauthorized person should be able to make changes either) All future changes can be made remotely through the GUI or at the site (from the ground) through BLE using the Mobile App.

**Configure** – To create a configuration file follow these steps:

1. Select *Initialize*.
2. Select the *Configure* tab.
3. At the DHCP checkbox, check DHCP for automatic IP address assignment, or leave unchecked to manually enter IP addresses.
4. *Set IP Address*: you can select *Individual* to configure a single switch or *Range* to configure multiple switches using multiple IP addresses.
5. Enter a Sub-net mask and a Gateway IP address for the switch(es) (required).
6. BLE Enabled (BLE is enabled by default. Unchecking it will disable access to the switch from the Mobile App via BLE after the configuration is installed. This cannot be reversed from the Mobile App and can only be done through the web GUI).
7. The *Set User Credentials* fields are optional:
  - a. Enter a *Username*
  - b. Enter a *Password*
8. In the *Set User Information* fields:
  - a. Enter *System Location*
  - b. Enter *System Name*
  - c. Enter *System Contact* person
9. The *File Name Prefix* will default to **config\_**. You may change it if desired.
10. Press *Create File* button.

**Transfer** – is used to transmit the Configuration information into the switch. **Note:** The switch does not need to be powered or connected to do this. Follow these steps:

1. Lift the lid of the packaging box that the switch shipped in.
2. On the Mobile App, select *Initialize*.
3. Select *Transfer*. The available configuration files display in the box in the left side box on the screen.
4. Select the Mobile App file (the name of the file will be highlighted when selected and the config details are displayed in the right side box on the screen).
5. Press the *TAP AND GO* button.
6. Hold the smart phone or tablet so the NFC reader is directly over the NFC target on the front cover of the switch (the device must be within about 4 cm of the switch).
7. You will hear a “chime” and see a message “Config transferred successfully” when the configuration has been transferred. If you hear a low tone and see a message “Failed to write, please reposition your device and try again”, the configuration has not been transferred. Re-select *TAP AND GO* button and re-position the device, being sure to align the NFC reader area of the device directly over the NFC target on the switch cover.
8. The *Export* button allows you to export the config file to make edits or changes using a different device. (Note: this is a future enhancement and there is currently no capability to export or re-import files.)
9. You may delete a file after the config file has been successfully transferred or is no longer needed. Ensure the file name is highlighted and press *Delete File*.

**Read NFC Tag** – is used to check the configuration of a switch.

1. On the Mobile App, select *Initialize*.
2. Select *Read NFC Tag*.
3. Hold the smart phone or tablet so the NFC reader is directly over the NFC target on the front cover of the switch (the device must be within about 4 cm of the switch).
4. You will hear a “chime” when the configuration has been read. The configuration information displays on the Mobile App screen.
5. If you hear a low tone, the configuration was not recognized. Re-position the device and try again. The configuration information displays on the screen when recognized. If the switch has been powered on and the configuration has already been fully transferred into the switch, you will see a message indicating no config info was detected/the tag was detected but no data exists. The NFC is intended for use prior to powering up the switch. After installation and power-up, changes should be made via the web UI.

**Troubleshoot** – This feature lets you connect with and troubleshoot the switch via the BLE interface.

If you have multiple PoE++ switches in the vicinity you may need the specific BLE MAC Address from the switch in order to pair the Mobile App with the correct switch. This can be found via the user interface at the following the path Switch > Security > Management > BLE. **Note:** use the Switch Manager Mobile App for Bluetooth pairing; do not use the Android Bluetooth pairing function. Also, The Mobile App will not allow you to disable BLE when the device is paired.

1. On the Mobile App, select *Troubleshoot*.
2. Pairing - The Mobile App should automatically start searching for eligible BLE-enabled devices to pair with.  
If it does not, select the *Retry Scan* button to initiate the search. You can limit the displayed devices to only PoE++ switches by checking the PoE++ box above the Pairing box (checked by default). If left unchecked, all available BLE devices in the area will be displayed.
3. A list of available BLE devices displays under Pairing in the upper left corner. Locate the one with the BLE MAC Address for the switch you are trying to troubleshoot. Once the devices have successfully paired, the BLE MAC Address of the switch will be highlighted.
4. Enter the *Username* that you selected when configuring the switch.
5. Enter the *Password* that you selected when configuring the switch.
6. Switch Commands - you can perform several simple actions with the touch of a button:
  - a. Set IP Address
  - b. Reboot Device
  - c. Turn PoE Power On/Off for a specific port
7. Alternatively, you can type CLI Commands in the large box at the bottom of the screen.  
**Note:** If the box indicates “*Please do the pairing*”, the BLE pairing step must be done before you can enter any CLI commands (proceed from step 2 above). Some common CLI commands are included for your reference in the SESPM1040-541-LT-xx Operation Guide.

For detailed instructions, including sample screen shots, see pages 10-20.



## Switch Configuration

Switch configuration can also be via:

- Console Port (Serial) (RS-232 RJ-45) (out-of-band)
- Command Line Interface (CLI)
- GUI via Ethernet (in-band)
- NFC (Switch Manager App)

See the SESPM1040-541-LT-xx Operation Guide for commands in each mode.

**Note** that there are BLE commands in Exec mode and Config mode.

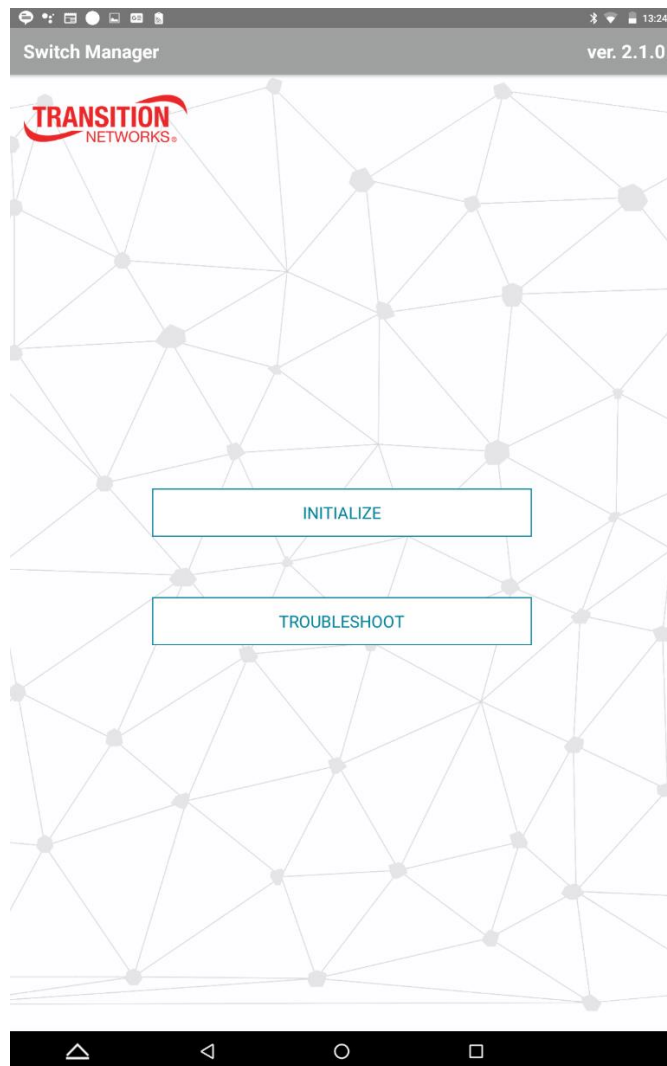
**Note:** BLE must be enabled to use BLE with the Switch Manager Mobile App. The switch ships with BLE enabled, but it can also be enabled via the CLI or via the Web UI. **Note** that the switch has a BLE session timeout; after a minute of inactivity, the CLI session will be logged out and the BLE connection dropped.

**Note:** The switch ships with NFC enabled by default. You can also enable NFC via the CLI or via the Web UI to be able to use NFC with the Switch Manager Mobile App.

# Switch Manager Mobile App

## Detailed Instructions with Sample Screen Shots

The Switch Manager Mobile App interfaces with NFC and BLE to configure and monitor the switch using an Android-based smart phone or tablet. The Switch Manager Mobile App startup page is shown below:



### Buttons:

**INITIALIZE:** Click to use **NFC** (Near Field Communication) to pre-configure the switch before installation.

**TROUBLESHOOT:** Click to use **BLE** (Bluetooth Low Energy) to access the switch to check change the configuration or reboot the switch after installation without having to physically access the switch with a cable.

## NFC Interface

The NFC interface allows easy setup and access. NFC replaces DIP switches and allows a simple configuration process that requires very little training for employees. It also simplifies installation in situations where more than one switch is being installed, since a range of IP addresses can be designated to configure multiple switches at one time. **Note** that anti-virus and password protection are recommended for NFC operation. The NFC module is NFC Forum Type 2 Tag Compliant and ISO/IEC 14443A Compliant.

## NFC Configuration

CONFIGURE is used to create a configuration. Select the INITIALIZE button from the Home page. The pages shown below are for creating an individual IP address, a range of IP addresses, or DHCP-assigned IP addresses

Individual IP Address

IP Address Range

DHCP Enabled

### Parameter descriptions:

**DHCP Enabled:** Check the box to allow a configured and running DHCP server to automatically assign IP addresses. Uncheck the box to manually assign IP addresses. The box is unchecked by default.

### Set IP Address

**IP Address:** Check the Individual or Range radio button and enter the individual IP address or the range of IP addresses. The default is 192.168.1.10.

**Subnet Mask:** Enter the subnet mask. The default is 255.255.255.0.

**Gateway:** Enter the IP address of the gateway. The default is 192.168.1.1.

**Mgmt VLAN:** Enter the VLAN ID of the assigned Management VLAN (1-4096).

**Vlan Port Number:** Enter the port number of the VLAN. The default is 1.

**BLE enabled:** Check the box to disable the ability to configure the switch via BLE. Configuration will still be allowed via the Web UI or via the CLI commands over a connected console cable. By default the box is checked.

#### **Add / Set User Credentials**

**Username:** Enter the Username that you wish to use to access the switch via the Mobile App.

**Password:** Enter the Password that you wish to use to access the switch via the Mobile App.

#### **Set User Information**

**System Location:** Enter text to identify the location of the switch.

**System Name:** Enter text to identify a name for the switch.

**System Contact:** Enter text to identify contact information for the switch.

**File Name Prefix:** Displays “**config**”. This is the default filename prefix for saving the configuration file(s).

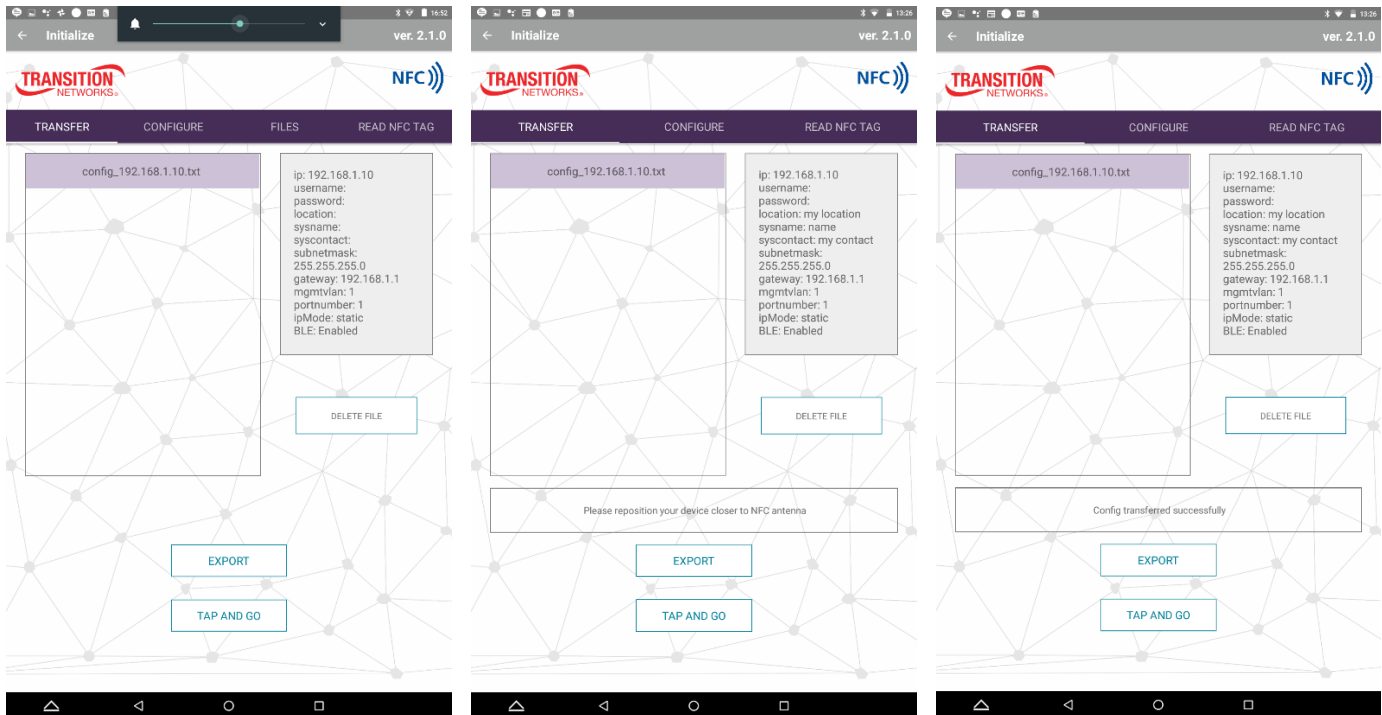
#### **Buttons:**

**CREATE FILE:** Click to save the configuration file(s) to transfer into the switch(es).

← : Click to go back to the Home page.

**Message:** If the message “*incorrect ip address*” displays, check the parameter descriptions above and re-try the operation.

**TRANSFER** is used to transmit the saved configuration(s) information into the switch(es). **Note:** the switch does not need to be powered, connected, or even removed from the box to do this. Simply lift the switch box lid and follow the steps. The TRANSFER screens are shown below.



### Buttons:

**TAP AND GO:** Click to transfer the highlighted/selected configuration into a switch. Hold the smartphone or tablet so the NFC reader is directly over the NFC target on the switch front cover. The device must be within about 4 cm of the switch. You will hear a “chime” when the configuration file has been transferred and the Mobile App will display the message *“Config transferred successfully”*. If you hear a low tone, the configuration has not been transferred. This is usually because of improper positioning of the device. The Mobile App will display a message asking you to *Please reposition your device closer to the NFC antenna* and try again. Select TAP AND GO and reposition the device, being sure to align the NFC reader area of the device directly over the NFC target on the switch cover.

**DELETE FILE:** Click to delete the highlighted/selected configuration file after it has been transferred and is no longer needed.

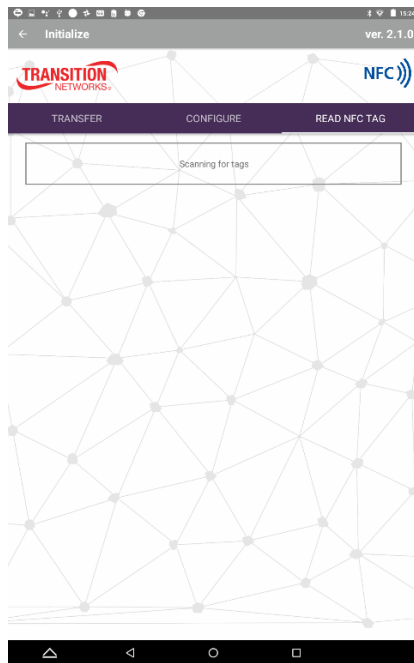
**EXPORT:** Click to export the highlighted/selected configuration file to make edits and changes using a different device. Note: this is a future enhancement and there is currently no capability to export or re-import files.

Click ← to go back to the Home page.

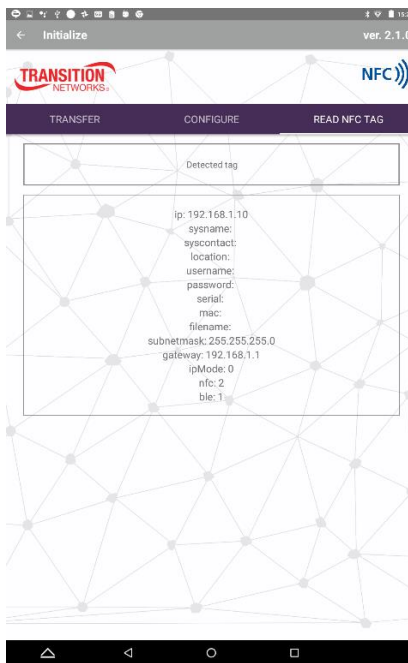
EXPORT: → *“Unfortunately TNMobileApp has stopped”* message displays. Click the OK button to clear the message. The message *“Scanning for tags”* displays, then the Detected tag screen displays (see below).

**Read NFC Tag** is used to check the configuration that has already been transferred to the switch. Select READ NFC TAG, then hold the smartphone or tablet so the NFC reader is positioned directly over the NFC tag on the switch that you want to check. When successfully read, you will hear a chime and the configuration information will be displayed on the NFC READ NFC TAG Results page as shown below. If the NFC tag was detected but not read, the information below is displayed.

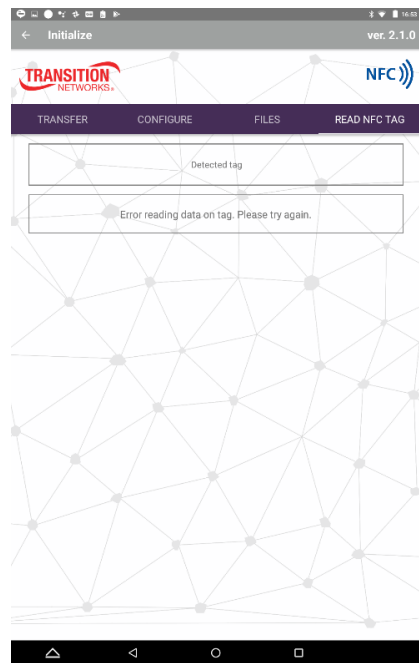
**Read NFC Tag start screen**  
*Scanning for tags*



**Read NFC Tag success**  
*Detected tag*



**Read NFC Tag Error**  
*Detected tag – Error reading data on tag. Please try again.*



**Parameter descriptions:**

**Detected Tag:** Indicates the tag was detected. The next box displays the information from the device.

**ip:** Displays the detected IP address.

**sysname:** Displays the detected system name.

**syscontact:** Displays the detected system contact.

**location:** Displays the detected system location.

**username:** Displays the detected user name.

**password:** Displays the detected system password.

**serial:** Displays the device serial number.

**mac:** Displays the device MAC address.

**filename:** Displays the name of the file.

**subnetmask:** Displays the detected subnet\_mask.

**gateway:** Displays the detected gateway IP address.

**ipMode:** Displays the detected IP mode (e.g., 0 = Static or 1 = DHCP).

**nfc:** Displays the detected NFC setting (always 2 = Disabled). Always set to disabled when applying a config via NFC.

**ble:** Displays the detected BLE setting (1 = Disabled or 2 = Enabled).

## BLE Interface

The BLE interface allows access to read/change equipment settings without requiring physical access to the switch using a console cable once it is mounted high on a wall or pole. The BLE interface provides alarm/status info, since LEDs and alarms aren't useful when products are located inside cabinets or enclosures, which eases troubleshooting effort and cost.

The BLE feature complies with BLE 4.2. If you do not want the switch to be accessible via BLE, the BLE feature can be disabled using the GUI or in an NFC configuration via the Mobile App. **Note:** if BLE is disabled via the Mobile App, it can only be re-enabled via the switch GUI or via the CLI. See the SESPM1040-541-LT-xx Operation Guide.

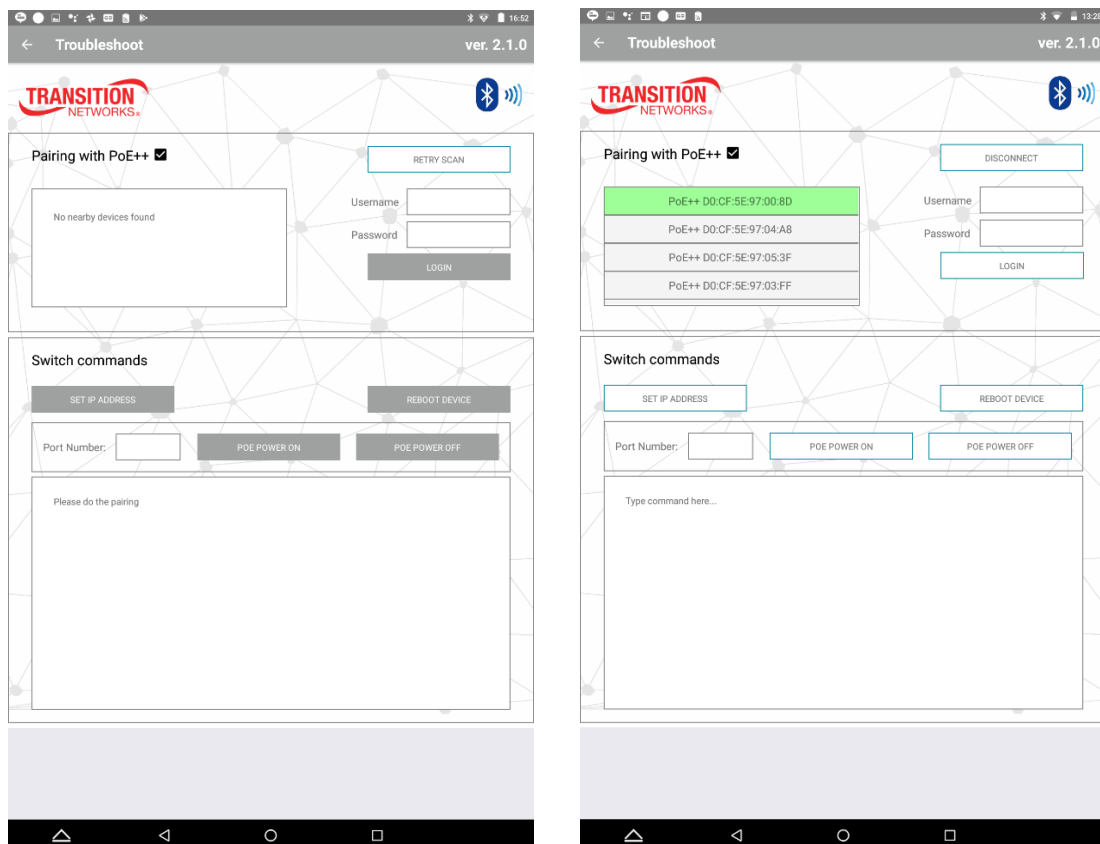
Although the Mobile App can be installed on multiple devices, the switch will only pair with one device at a time. You must re-pair when switching devices/users. Note that anti-virus and password protection are recommended with BLE operation.

## BLE Configuration

Troubleshoot is used to connect with and troubleshoot the switch via the BLE interface. BLE must be enabled on the switch and the Mobile App paired with the switch. **Note:** use the Switch Manager Mobile App for Bluetooth pairing; do not use the Android Bluetooth pairing function. F

To use Bluetooth features in an app, you must allow Location permission in your device's Settings menu.

BLE pairing must be disconnected before trying to disable BLE. If you try to disable BLE while a device is paired, BLE will not be disabled. The BLE Pairing page is shown below.



**Parameter descriptions:****Pairing**

The Mobile App should automatically start searching for eligible BLE devices to pair with. If it does not, select the RETRY SCAN button to initiate the search.

**Username:** After selecting the device to pair with, enter the Username that you selected for the specific switch configuration.

**Password:** Enter the Password that you selected for the specific switch configuration, then click the LOGIN button.

**Buttons:**

**POE++:** check the box to limit the set of available devices displayed to only the available PoE++ devices.

**RETRY SCAN:** Click to refresh the list of potential devices for Pairing. The button will change to DISCONNECT after the Mobile App is paired with a device.

**LOGIN:** Click after entering Username and Password to access the switch.

**STOP SCAN:** Click to cancel the Pairing. The button will change to RETRY SCAN for future pairing attempts.

**SET IP ADDRESS:** Click to change the IP address.

**REBOOT DEVICE:** Click to reboot the paired device.

**POE POWER ON:** Enter a port number then click this button to turn PoE power for the port on.

**POE POWER OFF:** Enter the port number then click this button to turn PoE power for the port off.

**DISCONNECT:** Click to cancel the pairing and disconnect from the current device.

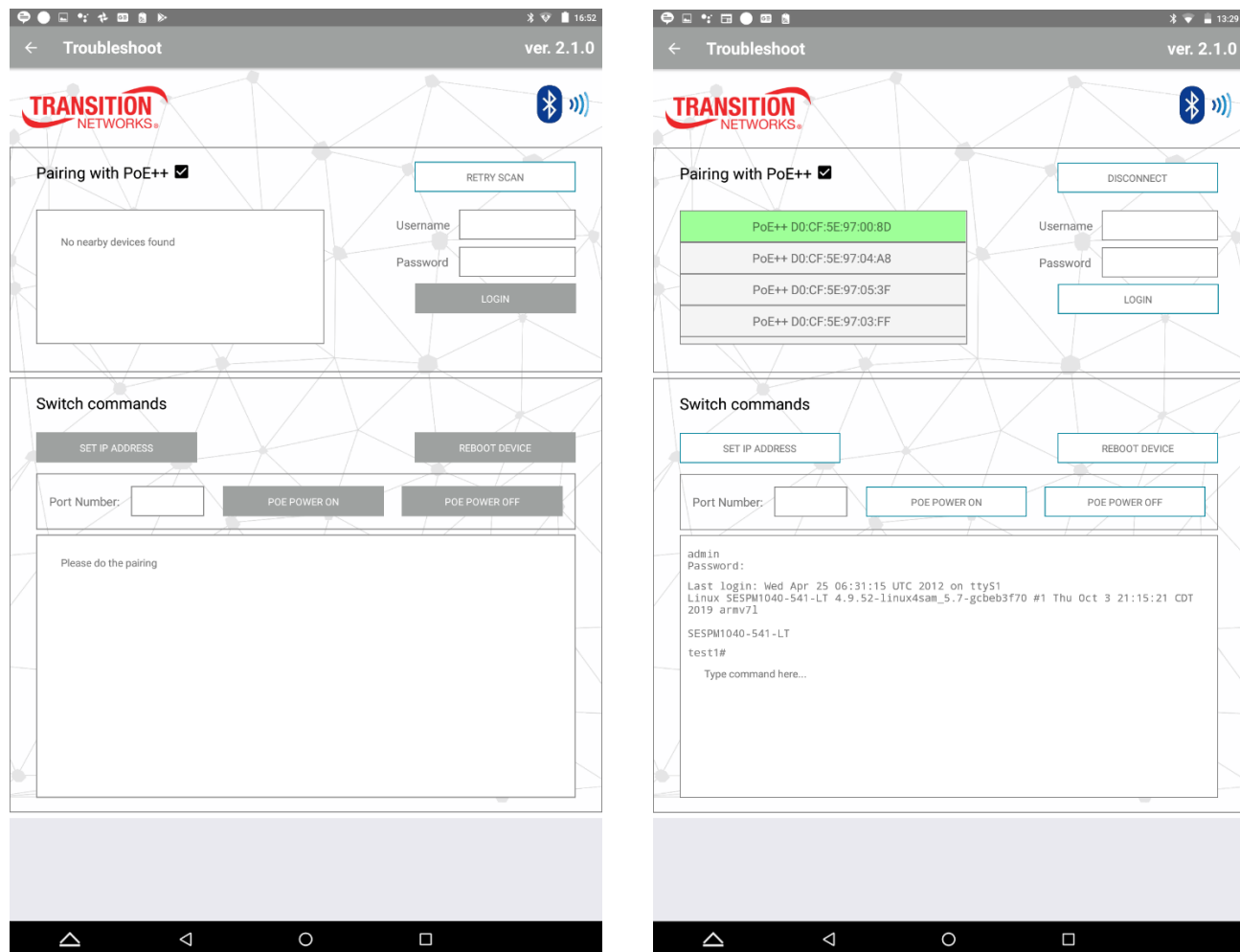
**Messages:**

Message: *Please do the pairing* means the Mobile App is not currently paired with a switch.

Message: *Scanning for devices...* means the Mobile App is attempting to pair with a switch.



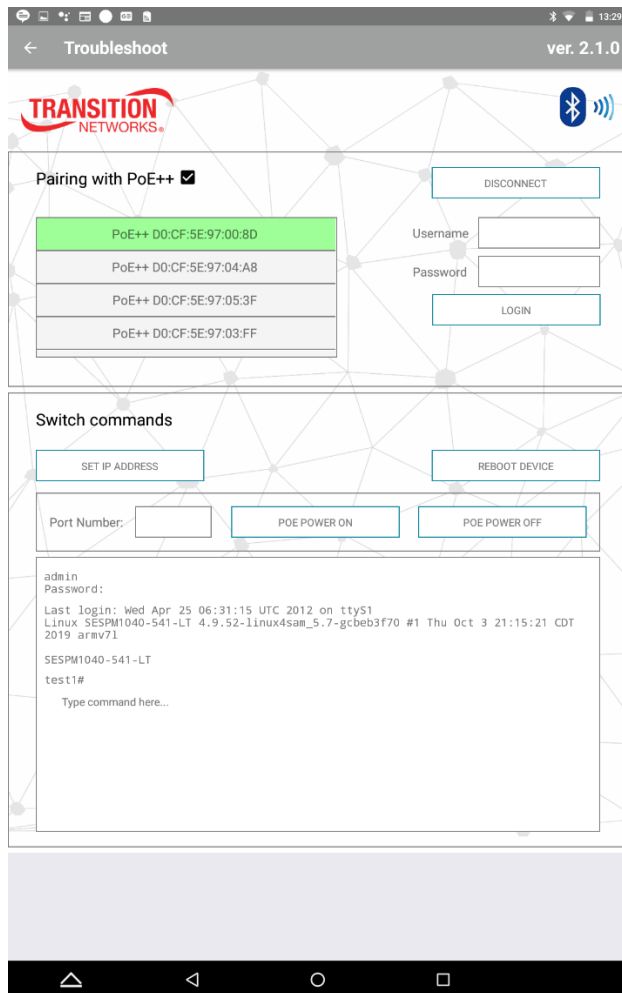
A list of available devices will display in the Pairing box on the BLE Pairing Prompt page as shown below.



Locate the device with the BLE Mac address of the switch you want to troubleshoot. Check if the devices have successfully paired; the switch BLE MAC address will be highlighted in the BLE Pairing section of the page as shown above.

Several common CLI commands have been set up as simple button commands. Alternatively, you can type other CLI commands directly in the large box at the bottom of the screen. You must first log in using Username and Password.

The BLE login page is shown below for a switch that is paired, already logged in, and prompting for an action.



#### Parameter descriptions:

**qwerty keyboard:** Keyboard keys for entering CLI commands. See the Operation Guide.

**SESPM1040-541-LT login:** The default Username and Password are **admin**. We recommend changing the login per your organization's security policy.

#### Messages:

*Login incorrect* displays if not logged in or incorrect login information is entered.

*Type command here...* displays to prompt for CLI command entry.

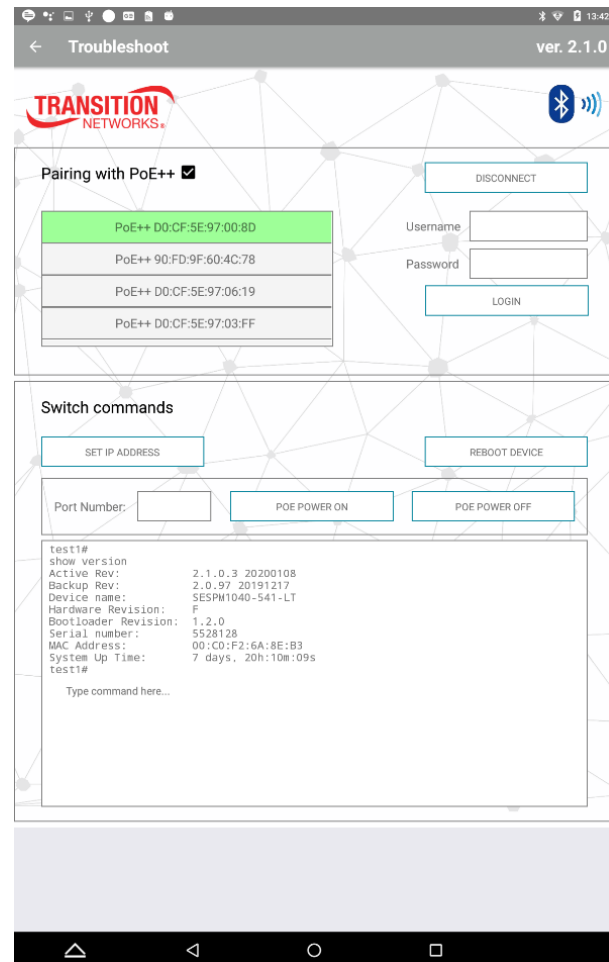
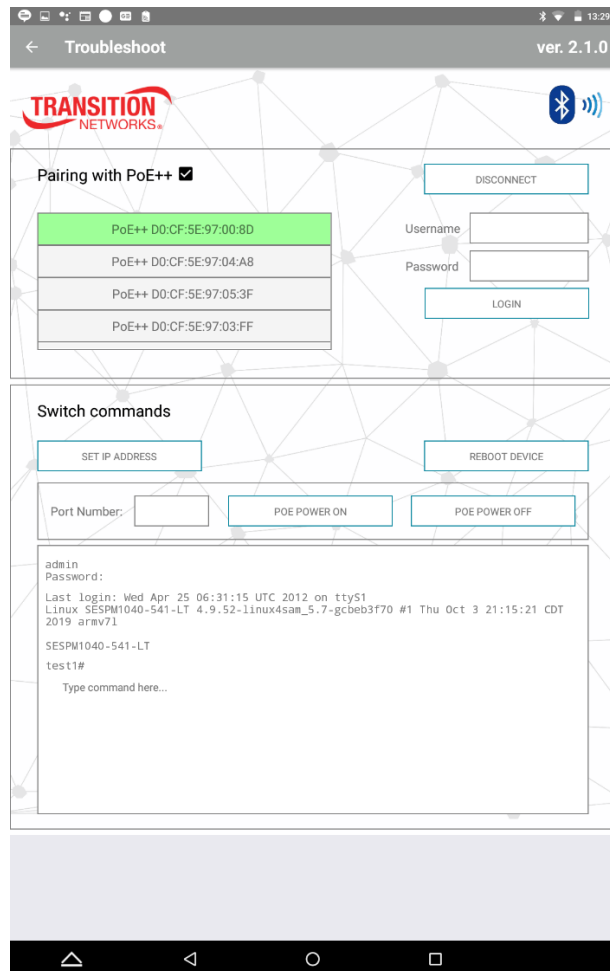
When you click the DISCONNECT button, the BLE Disconnected message displays as shown below.



Message: When the message *Disconnected from <mac address>* displays, click the **OK** button to continue.

## Switch CLI Commands

The CLI Command prompt is shown below. See the SESPM1040-541-LT Operation Guide for the full set of available CLI commands.

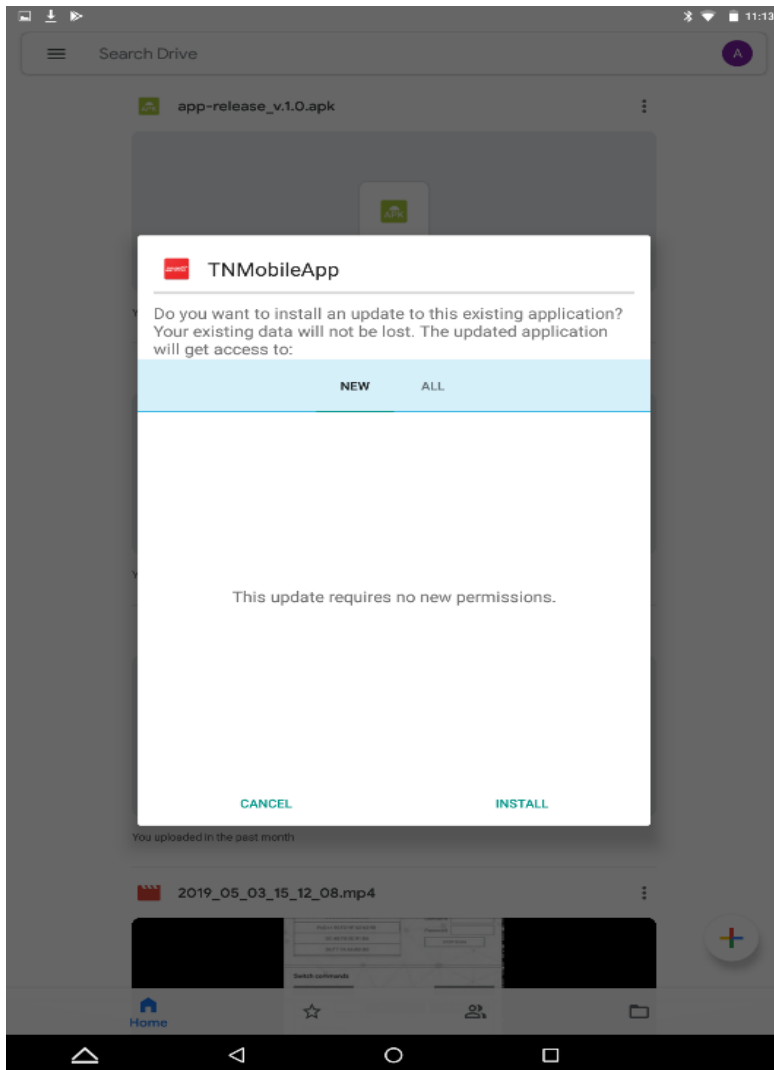


**Example: *show version* command**

```
SESPM1040-541-LT
test1#
Type command here...
SESPM1040-AC PLM 1#
# show version
Active Rev:      3.0.3 20210603
Backup Rev:      2.0.97 20191217
Device name:     SESPM1040-541-LT
Hardware Revision: H
Bootloader Revision: 1.2.0
Serial number:   5528128
MAC Address:     00:C0:3F:56:3F:08
System Up Time:  6 days, 06h:01m:42s
#
```

## Update Existing Application

To upgrade an existing version of the Mobile App, request a new version from the [Download Request](#) page on the Transition Networks website, and follow the on-screen instructions. Download and save the Switch Manager Mobile App (e.g., app-release\_v.2.1.0.apk) to a location on your mobile device.



## 3. Additional Information

### Q & A

**Q1.** What is the Switch Manager Mobile App used for?

**A1.** The Switch Manager Mobile App interfaces with the NFC and BLE features to allow switch configuration, remote diagnosis and troubleshooting without having to climb a ladder or scissor lift to connect to the switch.

**Q2.** What does the BLE feature do?

**A2.** The Bluetooth Low Energy feature allows remote access to the switch without having to physically connect with a cable, so monitoring and troubleshooting and changes can be made prior to leaving the job site or after ladders or scissor lifts have been removed. The range is approximately 100m.

**Q3.** Are the BLE and NFC features safe and secure enough for my network?

**A3.** NFC is considered very secure and is frequently used for contactless payments (e.g., Apple Pay). A secure channel is established and uses encryption for sending sensitive information. However, we always recommend users have antivirus software and passwords on their devices in case they are lost or stolen.

BLE uses Advanced Encryption Standard (AES), 128/256, SHA-1, SHA-2 (SHA-224 and SHA-256) and ECC (Elliptic Curve Cryptography) encryption. It uses an authenticated encryption algorithm designed to provide both authentication and confidentiality. AES was adopted by the US Government in 2002 and is used worldwide.

## Troubleshooting

Use the NFC app to configure before or during installation. Use the BLE app to troubleshoot after installation. See the Install Guide for PoE Modes, Compliance, Standards and Troubleshooting, and other related topics.

1. Check the Release Notes for any known issues.
2. Verify your port configuration. See the Install Guide.
3. Verify the “Console Port Setup” in the Install Guide.
4. Verify the CLI command syntax, parameters, and mode; see the Operation Guide.
5. Verify the Web UI operation; see the specific Web UI module in the Operation Guide.
6. Re-try the attempted operation from another UI (e.g., try Web UI).
7. Monitor and document LED conditions; see the Operation Guide.
8. Verify the switch firmwares are the latest versions and upgrade if available.
9. If a suspected PoE issue, see the Operation Guide.
10. Make sure related hardware (Camera, WAP, SFP, Injector, etc.) is connected and operating correctly. See the related device manuals and helps.
11. Check and update your [Android version](#).
12. See “NFC Troubleshooting” on page 22 if an NFC issue.
13. See “Bluetooth Troubleshooting” on page 22 if a Bluetooth issue.
14. Contact Tech Support; see “Contact Us” on page 23.

## NFC Troubleshooting

Check if you have NFC. Not all phones and tablets have NFC. Check your phone’s Settings menu:

1. On your Android device, tap on Settings.
2. Tap More.
3. Scroll down and you should see NFC and Android Beam options.

If your device has NFC, check that the chip and Android Beam are activated so that you can use NFC:

1. Go to Settings > More.
2. Tap on the NFC switch to activate it. The Android Beam function will also automatically turn on.
3. If the Android Beam does not automatically turn on, just tap it and select Yes to turn it on.
4. If you still have issues, see the [Android NFC webpage](#).

Check that NFC is enabled on the switch. Using the web GUI, go to Security, Management, NFC. If NFC State is Disabled, change to Enabled, hit Apply, and save the configuration.

## Bluetooth Troubleshooting

**Note:** use the Mobile App for Bluetooth pairing; do not use the Android Bluetooth pairing function. Also, The Mobile App will not allow you to disable the BLE when the device is paired.

If your Bluetooth accessory won't pair or connect to your Android device:

1. On your Android device, go to Settings > Bluetooth and make sure that Bluetooth is on. If you can't turn on Bluetooth or you see a spinning gear, restart your device. Then try to pair and connect it again.
2. Make sure that your Bluetooth accessory and Android device are close to each other.
3. Turn your Bluetooth accessory off and back on again.
4. Make sure that your Bluetooth accessory is on and fully charged or connected to power. If your accessory uses batteries, see if they need to be replaced. If you still can't pair or connect your Bluetooth accessory: check the [Android Help webpage](#).
5. When using the BLE feature on the Switch Manager Mobile App: If your configured switch does not appear in the list of Pairing Devices, select Retry Scan. Once paired, the switch configuration should remain highlighted in green until you Disconnect. If you lose pairing, try closing out of the Switch Manager Mobile App, go back into the Mobile App and pair again.
6. To use Bluetooth features in an app, you must allow Location permission in your device's Settings menu.
7. Check and update your [Android version](#).
8. Contact your mobile device manufacturer's Tech Support if you still have any of these issues:
  - You can't turn on Bluetooth or the setting is grayed out.
  - You can't connect any Bluetooth accessories with your device.
  - The accessory manufacturer confirmed that your accessory is working correctly.
9. Check that BLE is enabled on the switch. Using the web GUI, go to Security, Management, BLE. If BLE Broadcast is Disabled, change to Enabled, hit Apply, and save the configuration.
10. Contact Transition Networks Tech Support for issues with the Mobile App or the switch.

## Compliance Information

See the Install Guide for all regulatory agency compliance information.

## Tech Support

See the Install Guide.

## Contact Us

See the Install Guide.

## Warranty

See the Install Guide.

## Glossary of Terms

**Note** that the mention or definition of a term does not imply that the switch supports that particular feature.

**802.11b** standard has a maximum raw data rate of 11 Mbit/s, and uses the same media access method defined in the original standard. 802.11b products appeared on the market in early 2000, since 802.11b is a direct extension of the modulation technique defined in the original standard. The dramatic increase in throughput of 802.11b (compared to the original standard) along with simultaneous substantial price reductions led to the rapid acceptance of 802.11b as the definitive wireless LAN technology. Devices using 802.11b experience interference from other products operating in the 2.4 GHz band. Devices operating in the 2.4 GHz range include microwave ovens, Bluetooth devices, baby monitors, cordless telephones, and some amateur radio equipment.

**802.11g** modulation standard was ratified in June 2003. This works in the 2.4 GHz band (like 802.11b), but uses the same OFDM based transmission scheme as 802.11a. It operates at a maximum physical layer bit rate of 54 Mbit/s exclusive of forward error correction codes, or about 22 Mbit/s average throughput. 802.11g hardware is fully backward compatible with 802.11b hardware, and therefore is encumbered with legacy issues that reduce throughput by ~21% when compared to 802.11a.

**802.11n** is an amendment that improves upon the previous 802.11 standards by adding multiple-input multiple-output antennas (MIMO). 802.11n operates on both the 2.4 GHz and the 5 GHz bands. Support for 5 GHz bands is optional. Its net data rate ranges from 54 Mbit/s to 600 Mbit/s. The IEEE has approved the amendment, and it was published in October 2009. Prior to the final ratification, enterprises were already migrating to 802.11n networks based on the Wi-Fi Alliance's certification of products conforming to a 2007 draft of the 802.11n proposal.

**APK File and "Sideloading"**: The .apk (Android Package) is a package file format used by the Android OS for distributing and installing mobile apps. APK files are a type of archive file, specifically in zip format packages, based on the JAR file format, with .apk as the filename extension. APK files can have any name needed, as long as the file name ends in the file extension ".apk".

APK files can be installed on Android-powered devices just like installing software on a PC. When you download and install an Android application, you are installing an APK file on to your device. You can also install an APK file directly to a device (i.e., not via download from the network) from a desktop computer, using a communication program (e.g., adb) or from within a file manager app in a process known as "sideloading".

Installing APK files downloaded outside the Google Play is disabled by default. You can install unknown APK files by enabling "Unknown sources" from "Accounts and Security" in Settings. With Android apps, "sideloading" usually means installing an application package in APK format onto an Android device. Such packages are usually downloaded from websites other than Google play, usually with a computer. Sideloaded apps are only possible if you have allowed "Unknown Sources" in your Security Settings.

Methods to sideload an app on your Android phone / tablet include Manual, ADB, and AirDroid. The process for sideloading varies slightly by Android version.

ADB (Android Debug Bridge) is a versatile command-line tool that lets you communicate with a device. The adb command facilitates a variety of device actions, such as installing and debugging apps, and it provides access to a Unix shell that you can use to run a variety of commands on a device.

AirDroid is a free and fast app that helps you manage your Android devices from a web browser, all over the air. AirDroid lets you take complete control of your Android device from a web browser on a PC. AirDroid is a secure comprehensive free download app.



**BLE** (Bluetooth Low Energy): Bluetooth® Low Energy (LE) enables short-burst wireless connections and uses multiple network topologies. The Bluetooth LE broadcast topology supports localized information sharing and is well suited for beacon solutions, such point-of-interest (POI) information and item-finding and way-finding services. Bluetooth Low Energy (Bluetooth LE, BLE, formerly marketed as “Bluetooth Smart” is a wireless personal area network technology designed and marketed by the Bluetooth Special Interest Group ([Bluetooth SIG](#)) aimed at novel applications in the healthcare, fitness, beacons, security, and home entertainment industries. Compared to Classic Bluetooth, Bluetooth Low Energy is intended to provide considerably reduced power consumption and cost while maintaining a similar communication range. Mobile OS support: iOS, Android, Windows Phone, BlackBerry, MacOS, Linux, Windows 8, and Windows 10 natively support BLE.

**Endspan:** PSE type located at the end of the twisted-pair channel. For example, a switch.

**IEEE 802.3bt:** Trade names of PoE++, 4PPoE. Types 1, 2, 3, and 4. Max speed of 10GBASE-T. Power on 4 out of 4 pairs, up to 960mA / pair (480mA / wire); PSE: Max of 99.9 W, PD: Max of 71 W.

**NDEF:** (NFC Data Exchange Format) is a light-weight binary format, used to encapsulate typed data. It is specified by the NFC Forum, for transmission and storage with NFC, however it is transport agnostic. NDEF defines messages and records. An NDEF Record contains typed data, such as MIME-type media, a URI, or a custom application payload. An NDEF Message is a container for one or more NDEF Records.

**NFC** (Near Field Communication) is a form of contactless communication between devices like smartphones or tablets. Contactless communication allows a user to wave the smartphone over a NFC compatible device to send information without needing to touch the devices together or go through multiple steps setting up a connection. NFC technology lets smartphones and other enabled devices communicate with other devices with a NFC tag. [NearFieldCommunication.org](#) is devoted to educating individuals, small businesses, and large companies alike on the merits of near field communication. For more information about the official standards and regulations surrounding near field communication, check out the [NFC Forum](#).

**PD** (Powered Device): A device that receives power from a PSE over the twisted-pair copper cabling channel (e.g., an IP phone, WAP, or IP camera).

**PSE** (Power Sourcing Equipment): A device that delivers (sources) power over a twisted-pair copper cabling channel to a powered device (e.g., a switch).

## Record of Revisions

Rev.	Date	Description
A	10/14/19	Initial release of Switch Manager Mobile App at app-release_v1.0.apk.
B	1/31/20	Update to Switch Manager Mobile App app-release v 2.1.0. Add third parameter to BLE Config TROUBLESHOOT page, update <i>config</i> CLI commands. Add note to use the Mobile App for Bluetooth pairing, and not the Android BT pairing function. Remove the NFC enabled checkbox from the "Configure" tab.
C	3/3/20	Update troubleshooting information and permissions information.
D	6/7/21	Clarify disabling BLE. Add Passive PoE Module support; works with BLE but only via CLI commands. The buttons (Port Power On/Off, etc.) do not control passive PoE at this release.

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