

Training Simulator Communications Hub Standard 420 (TSCH STANDARD 420)

Quick Start Guide



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Document Version: 1.0
Document Date: July 30, 2016



About this Guide

Introduction

This Quick Start Guide shows the steps to start up quickly with the installation, use of Training Simulator Communications Hub and it's App.

Table below shows the revision history of the quick start guide.

Version	Date	Description
1.0	July 2016	Final Release
0.2	July 2016	<ul style="list-style-type: none">• Replaced Figure - 22, 24, 25, 26, 27, 28 and 29• Updated scenarios in Table 5
0.1	June 2016	Initial Draft



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This section familiarize with the product and provides the steps to get started quickly.

Introduction

Training Simulator Communications Hub Standard 420 (TSCH STANDARD 420) is a device which provides training to Communications Hub (CH) installers for on-field experience.

Figure -1. Standard 420 Training Simulator Communications Hub



LEDs

The TSCH STANDARD 420 has two LEDs for indication as shown in [Table 1](#).

<i>Table 1. LEDs Description</i>	
Name	Description
WAN	Indicates status of connection to the SM WAN network
HAN	Indicates status of connection to the HAN

LED State Indicators

Table 2. details the LED State Indicators ‘ON and OFF’ times for each of the three operating states – “Normal”, “Transitional” and “Error”. The corresponding flashing frequency is described as being Low, Medium or High frequency flashing.

Description	LED ON Time	LED OFF Time	Indication
HIGH FREQUENCY FLASH (HFF)	100ms	500ms	Indicates error operating state
MEDIUM FREQUENCY FLASH (MFF)	100ms	2000ms	Indicates transitional operating state
LOW FREQUENCY FLASH (LFF)	100ms	5000ms	Indicates normal operating state

Package Contents

Unpack the TSCH STANDARD 420 package. The package contains:

1. Standard 420 Training Simulator Communications Hub
2. Quick Start Guide

Product Installation

There are two ways to powered on TSCH STANDARD 420 as follow.

1. **Using Battery Supply** - TSCH STANDARD 420 has a battery case provided to install 9 volts battery as shown in Figure- 2.

 Duracell 9 volts (MN1604 type) battery is recommended.

Figure -2. Powering On TSCH STANDARD 420 Using 9 Volts Battery Supply



2. **Using SLS Meter Emulator or SMETS2 Electricity Meter** - Connect TSCH Standard 420 on ICHIS connector of the meter.

TSCH STANDARD 420 App Installation

In order to use TSCH STANDARD 420 Android or iOS App, it needs to be installed on the smart phone/tablet or iPhone/iPad. Follow the steps below to install TSCH STANDARD 420 Android or iOS App and get started with the product:

TSCH STANDARD 420 App on Android Smart Phone/ Tablet

Before you proceed for the App installation, make sure following.

- Android smart phone/tablet must have Android v4.0 and above.
- Either cellular data connection or WiFi internet service is available on smart phone/tablet to access Google Play store.
- Google account must be added on smart phone/tablet.
- Google Play Store App must be installed.

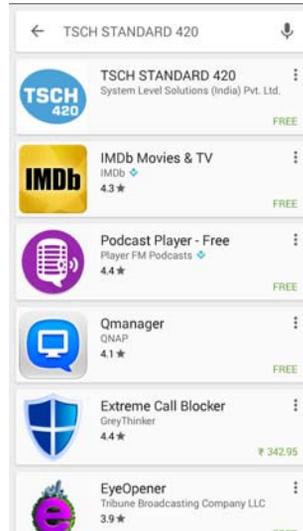
1. Open **Google Play Store** App. See [Figure- 4](#).

Figure -4. Google Play Store



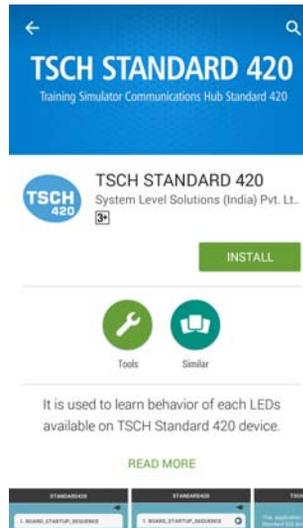
2. Type TSCH STANDARD 420 in search option and tap search icon. See [Figure- 5](#).

Figure -5. Search



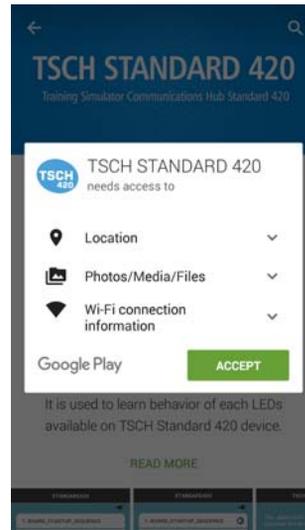
3. Tap **TSCH STANDARD 420** from the searched results. Make sure that publisher is **System Level Solutions (India) Pvt. Ltd.** See [Figure- 6.](#)

Figure -6. Install



-
4. Tap **Install**, and follow the on-screen instructions. See [Figure- 7](#).

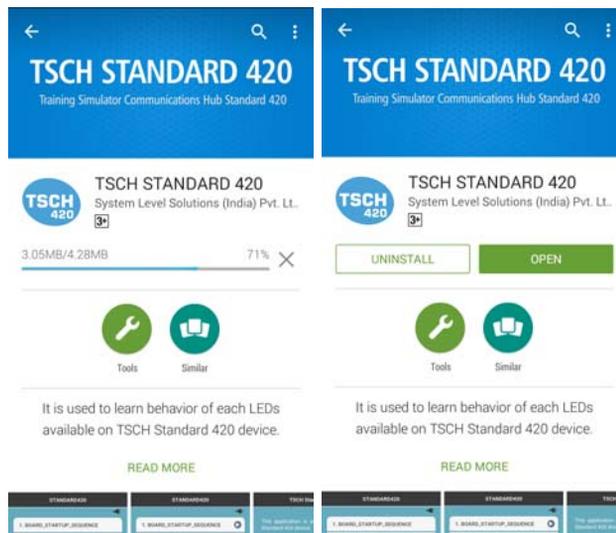
Figure -7. Accept



5. Once the App is downloaded and installed, tap **Open** to start the TSCH STANDARD 420 Android App. After installation, the shortcut is created on the dashboard of the smart phone/tablet. Touch TSCH

STANDARD 420 App  to open the App. See [Figure- 21](#).

Figure -8. Open



Set Up Automatic Updates

To set up automatic updates for TSCH STANDARD 420 App on your smart phone/tablet, follow the steps below:

1. Open the **Google Play Store** App .
2. Tap **Menu** icon ≡ > **Settings**.
3. Tap **Auto Update** apps.
4. Select an option:
 - 4.1 **Auto update apps at any time:** Updates apps at any time, using either WiFi or cellular data connection.
 - 4.2 **Auto update apps over WiFi only:** Updates only when you are connected to WiFi.

Update App Manually

To update TSCH STANDARD 420 app individually using Google Play Store App on smart phone/tablet, follow the steps below:

1. Open the **Google Play Store** app .
2. Tap the **Menu** icon ≡ > **My Apps**.

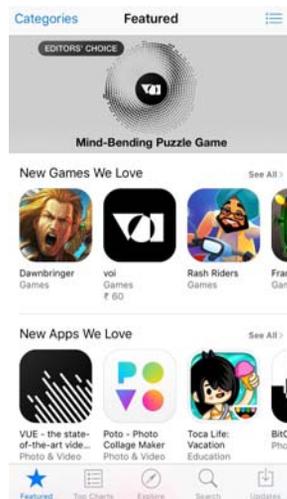
-
3. TSCH STANDARD 420 App with an update is available then TSCH STANDARD 420 App is labeled as **Update**.
 4. To update TSCH STANDARD 420 app, tap **Update**.

TSCH STANDARD 420 App on iPhone/iPad

Before proceeding for the installation of the App, make sure following:

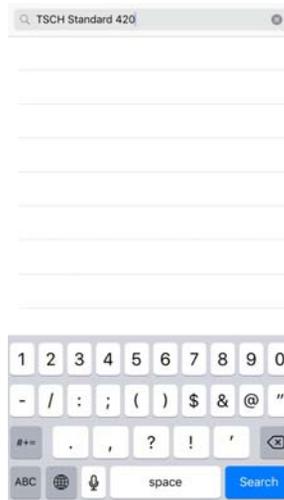
- iPhone/iPad must have iOS v7.0 and above.
 - Either cellular data connection or WiFi Internet service is available on iPhone/iPad to access App Store.
 - An Apple ID must be added on iPhone/iPad.
1. Open **App Store** App. See [Figure- 9](#).

Figure -9. App Store



2. Type **TSCH STANDARD 420** in search option and tap **Search** button. See [Figure- 10](#).

Figure -10. Search



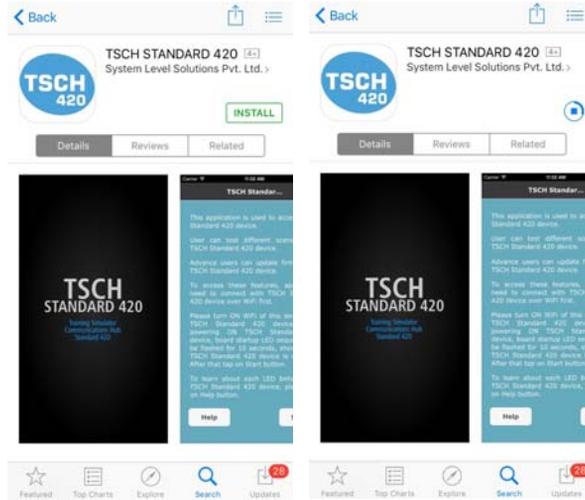
3. Tap **TSCH STANDARD 420** from the searched results. Make sure that publisher is **System Level Solutions Pvt. Ltd.** See [Figure- 11.](#)

Figure -11. Search Result



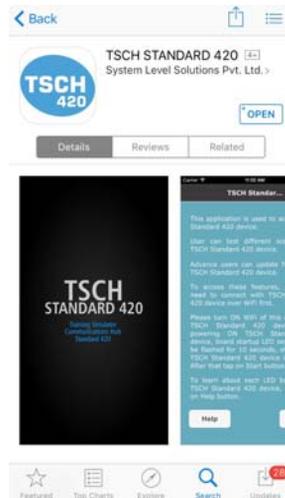
4. To get a **TSCH STANDARD 420** app, tap **Get** on the right side of the screen. The name changed to **Install**. Tap **Install**. It start downloading and installing the app in the iPhone/iPad. See [Figure- 12](#).

Figure -12. Installation Starts



5. Once the app is downloaded and installed, tap **Open** to start TSCH STANDARD 420 app as shown in [Figure- 13](#).

Figure -13. Open



6. After installation, the shortcut is created on the dashboard of iPhone/iPad. Touch  to open the App.

Set Up Automatic Updates

1. Tap **Settings > iTunes & App Store**.
2. If you are not already sign in, then sign in with your **Apple ID**.
3. Turn **ON** the content that you want to automatically download. See [Figure- 14](#).
4. You can turn Automatic Downloads on or off over your cellular data connection network on an iPhone or iPad WiFi + Cellular Data connection. Go to **Settings > iTunes & App Store** and turn Use cellular data connection on or off. Cellular data connection downloads are limited to a file size of 100 MB or smaller.

Figure -14. iTunes & App Stores

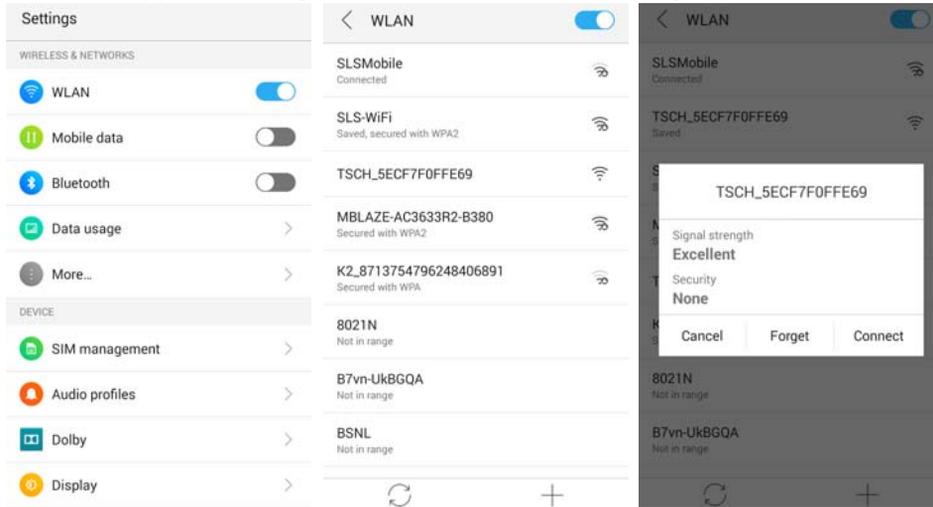


Update App Manually

Here's how you can manually update the TSCH STANDARD 420 app on your iPhone/iPad.

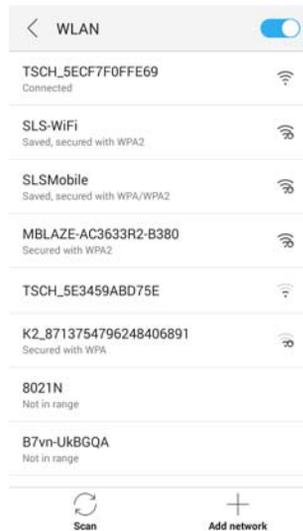
1. Tap on the **App Store** icon.
2. Tap on the **Updates** button on the bottom bar.
3. You will see a list of apps that have updates.
4. Find the TSCH STANDARD 420 app and tap on the **Update** button.

Figure -16. Android App Connecting to TSCH STANDARD 420 Through WiFi



4. It will automatically connected as shown in [Figure- 17](#).

Figure -17. Successful Connection with SSID



5. After successful connecting to the TSCH STANDARD 420, exit the WiFi settings.

Activate WiFi on iPhone/iPad

Follow the steps below.

1. From your Home screen, go to **Settings > WiFi**.
2. Turn on WiFi.
It will search for available WiFi networks. If the iPhone/iPad is in the range of TSCH STANDARD 420 WiFi network, the SSID e.g. TSCH_5ECF7F0FFE69 will be listed under WiFi network. See [Figure- 19](#).

 The SSID appear on search action is displayed with TSCH_[CHF ID] except first 4 digits of CHF ID where CHF ID is provided on TSCH STANDARD 420. See [Figure- 18](#).

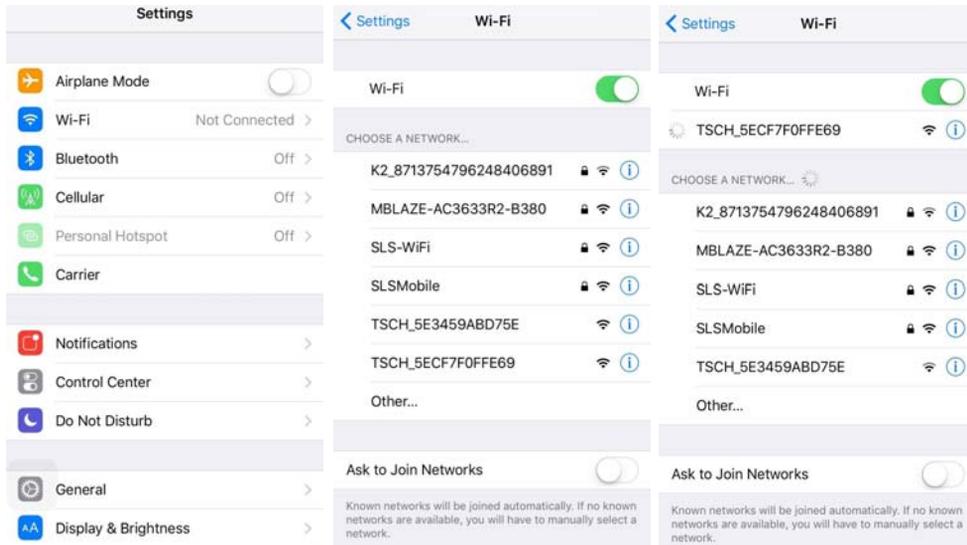
Figure -18. SSID On TSCH STANDARD 420



 If TSCH STANDARD 420 SSID is not found in WiFi list, then there are two possible reasons:

- The TSCH STANDARD 420 is not powered ON.
 - The TSCH STANDARD 420 is out of WiFi range of 10 meter.
3. Tap SSID to connect the TSCH STANDARD 420. See [Figure- 19](#).

Figure -19. iOS App Connecting to TSCH STANDARD 420 Through WiFi



4. It will automatically connected as shown in [Figure- 20](#).

Figure -20. Successful Connection with SSID



Starting the App

After successful connecting to the TSCH STANDARD 420, exit the WiFi settings.

Tap on  icon, it displays splash screen of the TSCH STANDARD 420 App as shown in [Figure- 21](#).

Figure -21. TSCH STANDARD 420 Splash Screen



On invoking the TSCH STANDARD 420 App, it displays the **TSCH STANDARD 420 App Information** as shown in [Figure- 22](#).

Figure -22. TSCH STANDARD 420 App Information

Table 3. describes the options on the TSCH STANDARD 420 App information screen.

<i>Table 3. TSCH STANDARD 420 App Information Options Description</i>		
Option	Option Name	Description
Help	Help	Displays TSCH STANDARD 420 help Information
Start	Start	Allows to start communication with connected TSCH STANDARD 420 SSID e.g. TSCH_5ECF7F0FFE69

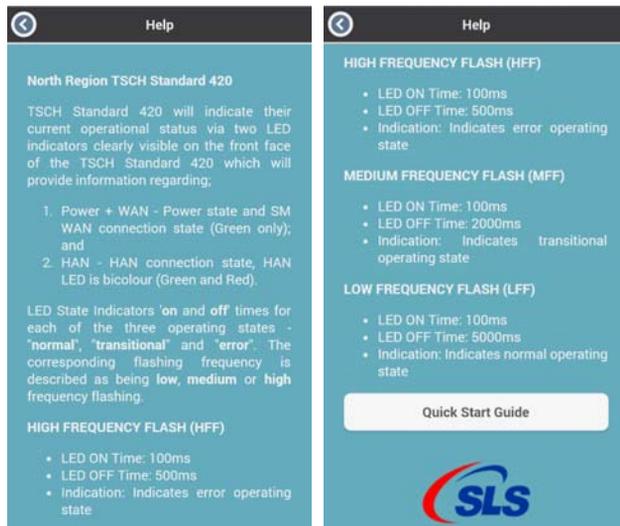
Help

Tap **Help** option on TSCH STANDARD 420 App information screen, it displays TSCH STANDARD 420 help information screen as shown in [Figure- 23](#).



Tap **Back** button on TSCH STANDARD 420 Help Information screen, to go back on **TSCH STANDARD 420 App Information** as shown in [Figure- 22](#).

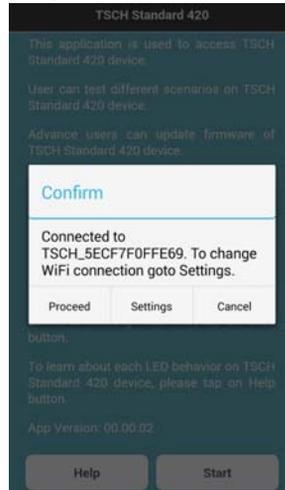
Figure -23. TSCH STANDARD 420 Help Information



Before connecting to TSCH STANDARD 420, make sure that the Mobile data (mobile internet connection) is turned off.

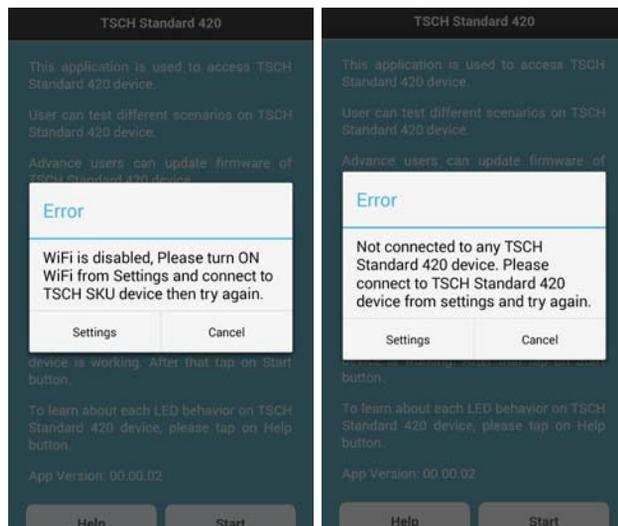
Tap **Start** **Start** option, the “**Confirm**” Dialog box pops up and allows to start communication with connected TSCH STANDARD 420 SSID as shown in [Figure- 24](#).

Figure -24. Confirm Messages



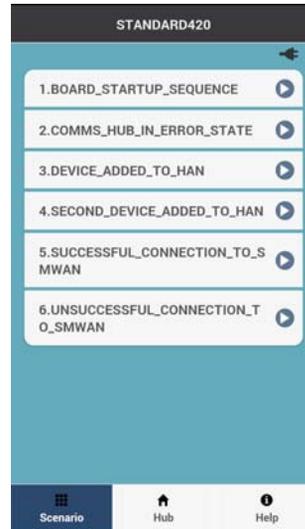
 If the “**Error**” dialog box pops up as shown in [Figure- 25](#). then activate WiFi and/or connect to TSCH STANDARD 420 by following the steps mentioned in “[Activate WiFi on Android Smart Phone/Tablet](#)” on page 12. or “[Activate WiFi on iPhone/iPad](#)” on page 14. by tapping **Settings**.

Figure -25. Error Messages



Tap **Settings** button to change WiFi settings. To continue testing, tap **Proceed** button. The scenarios sync starts. Wait till the scenarios sync process is completed. After the sync process completes, the scenario list screen appears as shown in [Figure- 26](#).

Figure -26. Home Page



[Table 4](#). describes the icons, buttons and options on the home page.

<i>Table 4. Home Page Icons, Buttons and Options Description</i>		
Icon/ Button/ Option	Icon/ Button/ Option Name	Description
	Plug	Indicates external supply through Meter from ICHIS connector
	Battery	Indicates battery supply
	Low Battery Status	Indicates low battery status
	Start	Starts the scenario

Table 4. Home Page Icons, Buttons and Options Description

Icon/ Button/ Option	Icon/ Button/ Option Name	Description
	Stop	Stops the scenario
	Back	Returns to the previous screen
	Scenario	Displays various scenarios
	Hub	Displays TSCH STANDARD 420 details
	Help	Displays TSCH STANDARD 420 App help information



Scenario

On tapping this option, it lists various scenario available for connected TSCH STANDARD 420.

Tap Start  button, to start running the scenario from the list. See [Figure- 27](#).

Figure -27. Start Scenario

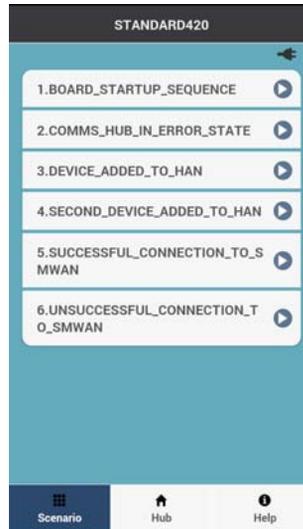


Table 5. shows TSCH STANDARD 420 scenario status LED description.

Scenario			LED Behavior		Duration in ms
DCC Training Scenario	Name	Step	SM WAN / POWER	HAN	
	BOARD_STARTUP_SEQUENCE		Solid Green	Off	200
			Off	Solid Green	200
			Off	Solid Red	200
			Solid Red	Off	200
			Solid Green	Off	200
			Off	Solid Green	200
			Off	Solid Red	200
			Solid Red	Off	200
			Solid Green	Off	200
			Off	Solid Green	200
			Off	Solid Red	200
			Solid Red	Off	200
			Solid Green	Off	200
			Off	Solid Green	200
			Off	Solid Red	200
			Solid Red	Off	200
Solid Green	Off	200			

Table 5. TSCH STANDARD 420 Scenario Status LED Description

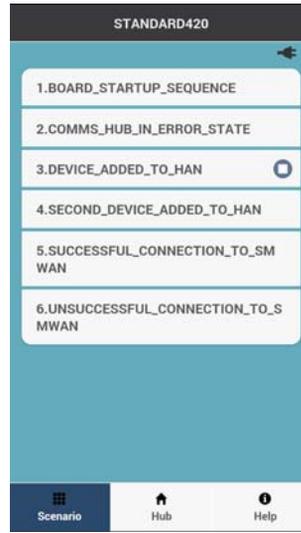
Scenario			LED Behavior		Duration in ms
DCC Training Scenario	Name	Step	SM WAN / POWER	HAN	
			Off	Solid Green	200
			Off	Solid Red	200
			Solid Red	Off	Continue
Comms Hub in error state	COMMS_HUB_IN_ERROR_STATE	Power Off	Off	Off	1000
		Power on, device initialising	Solid Green	Off	1000
		Device in error state	HFF Green	HFF Green	5000
		Watchdog Reset	Off	Off	Continue
Device Added to HAN	DEVICE_ADDED_TO_HAN	Wait for Whitelist	LFF Green	Solid Green	300000
		HAN in 'permit join' mode	LFF Green	MFF Green	10000
		HAN Device join success	LFF Green	Solid Red	5000
		HAN in 'permit join' mode	LFF Green	MFF Green	10000
		HAN initialised, one or more HAN devices in CHF Device Log	LFF Green	LFF Green	Continue
Second device added to HAN	SECOND_DEVICE_ADDED_TO_HAN	HAN in normal operation	LFF Green	LFF Green	10000
		HAN in 'permit join' mode	LFF Green	MFF Green	10000
		HAN Device join success	LFF Green	Solid Red	5000
		HAN in 'permit join' mode	LFF Green	MFF Green	10000
		HAN initialized one or more HAN device in CHF Device log	LFF Green	LFF Green	Continue

Table 5. TSCH STANDARD 420 Scenario Status LED Description

Scenario			LED Behavior		Duration in ms
DCC Training Scenario	Name	Step	SM WAN / POWER	HAN	
Normal Installation (successful connection to SM WAN)	SUCCESSFUL_CO NNECTION_TO_ SMWAN	Power Off	Off	Off	1000
		Power on, device initialising	Solid Green	Off	25000
		Attempting to connect to the SMWAN (HAN Initializing)	MFF Green	MFF Red	15000
		Attempting to connect to the SMWAN (HAN Initialized)	MFF Green	Solid Green	45000
		SM WAN connected*	LFF Green	Solid Green	Continue
failed installation (unsuccessful connection to SMWAN)	UNSUCCESSFUL_ CONNECTION_TO_ _SMWAN	Power Off	Off	Off	1000
		Power on, device initialising	Solid Green	Off	25000
		Attempting to connect to the SMWAN (HAN initializing)	MFF Green	MFF Red	15000
		Attempting to connect to the SMWAN (HAN initialized)	MFF Green	Solid Green	Continue

Tap **Stop**  button, to stop the running scenario as shown in [Figure- 28](#).

Figure -28. Stop Scenario



 Only one scenario can be run at a time and will keep running on TSCH STANDARD 420 until it is not stopped.



It displays the details of connected TSCH STANDARD 420 as shown in [Figure- 29](#).

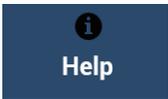
Figure -29. Hub Details



Table 6. gives the detail of the information displayed on Hub Details screen.

<i>Table 6. Information and Buttons of Hub Details Screen</i>	
Title	Description
SSID	Displays SSID of connected TSCH STANDARD 420
Type	Displays the type of TSCH STANDARD 420
Firmware Version	Displays current firmware version of TSCH STANDARD 420
Uptime	Displays the time duration from start of TSCH STANDARD 420
Scenarios Found	Displays total number of scenarios
Running Scenario	Displays name of running scenario
	Disconnects the connected TSCH STANDARD 420

Tap **Disconnect**  option, it redirects to **TSCH STANDARD 420 App Information** screen as shown in [Figure- 22](#).



Help

It displays TSCH STANDARD 420 help information screen as shown in [Figure- 30](#). At the end of the information, **Quick Start Guide**



button displayed which provide information to get started with TSCH and it's app.

Figure -30. TSCH STANDARD 420 Help Information



Troubleshooting

- 1. If TSCH STANDARD 420 SSID is not shown in TSCH STANDARD 420 Android and is App.**
 - 1.1** Verify WiFi connection and make sure the TSCH STANDARD 420 is in the range of 10 meter.
 - 1.2** Restart the TSCH STANDARD 420 again and verify.
 - 1.3** Restart the TSCH STANDARD 420 Android and iOS App and verify.
 - 1.4** Replace the batteries and try again.
- 2. If TSCH STANDARD 420 communication is broken multiple times.**
 - 1.1** Replace the battery and try again if low battery status.
 - 1.2** Move closer to TSCH STANDARD 420 and try again.
 - 1.3** Confirm an Android version is 4.0 or above to use the application.
- 3. If any issues with pre-loaded scenario.**
 - 1.1** Confirm the scenario is used for correct TSCH STANDARD 420 type.
 - 1.2** Contact your administrator to verify the scenario file.
- 4. If the TSCH STANDARD 420 Android and iOS App is not responding or getting stuck during operations.**
 - 1.1** Confirm an Android version is 4.0 or above to use the application.
 - 1.2** Confirm an iOS version is 7.0 or above to use the application.
 - 1.3** Reinstall the App.
 - 1.4** Contact your administrator for upgrading to higher version App.