# QUICK START

DevComFF uses Device Descriptions (DDs) to access data stored in the memory of the smart field device. These DDs are developed by the manufacturer for their products and, in turn, distributed by the FieldComm Group (FCG) worldwide. The latest DDs are included as part of the DevComFF installation. Visit the FCG website (www.fieldcommgroup.org) or the ProComSol website (www.procomsol.com) for update information.

The following steps will allow you to install and quickly begin using DevComFF:

**Step 1: Setup Your Android Device**

1. Allow installation of apps from sources other than the Play Store
Note: Below is for Samsung Galaxy 4, your Android device may have different key sequences.
a) Tap bottom left button on your Android device (Menu Button)
b) Select Settings
c) Select More
d) Select Security
e) Enable Unknown sources
2. Turn on Bluetooth
3. Connect Android device to PC via the USB cable.

**Step 2: Install the DevComFF App**

1. Copy the file "com.procomsol.devcomff.apk" to your device. Find it using a File Browser App and click on it to launch the Install App. See Section 4.2.1 for details

**Step 3: Activate DevComFF License**

Launch DevComFF by tapping the DevComFF icon.

You will be shown the number of days you can run before activation is required. You can use it for up to 10 days before you need to activate it. Activation only needs to occur once. See Section 4.2.2 for details.

**Step 4: Install DD Library**

After DevComFF is licensed or Demo mode is entered, you will be prompted to download the DD Library.

The Install could take up to 15 minutes based on your internet speed.

**Step 5: Connect the mobiLink communication interface**

Connecting to a Foundation Fieldbus device requires special interface hardware to be attached to your computer. DevComFF only works with the MOBI-FF and MOBI-CMPLT modems available from ProComSol, Ltd and other sources. The modem should be connected and configured.

On initial start the App will prompt you for a FF modem to use. Make sure your modem is turned on and tap the "Scan for mobiLinks" button in DevComFF. Select your FF modem.

**Step 6: Connect to the Foundation Fieldbus (FF) network**

Connect the mobiLink to the FF network at the power hub or other dedicated FF access point for communicators.

**Step 7: Live List**

Click the New Device icon to start populating the Live List. The Live List shows all the FF devices connected to the segment powered by the Power Hub. Click on the device you wish to configure or view.

**Step 8: Browse the Device**

On initial start, DevComFF sends a command to the field device, establishes a connection, and learns its identity. Once DevComFF knows the device identity, it locates the device's DD in the library and loads it. From this point forward operation of DevComFF is determined by the DD provided by the device manufacturer.

Menus and data are presented using a tree scheme. The organization of the data in the display window is dictated by the device DD. The display shows menus and data. To navigate to a different menu simply select it. To return to the previous menu, press the "Back" key on the device.

**Step 9: Modify the Device's Configuration**

The Menu tree allows access to all of the data exactly as described by the device manufacturer's DD. When you find elements of the field device's configuration you want to change, simply click and edit the data. Once you have changed the configuration to suit your needs, tap the "Commit" button to send the new data to the FF field device.

**Step 10: Performing Maintenance and Testing the Field Device**

Many devices perform Methods or Standard Operating Procedures (SOPs) that may need to be performed to ensure the device is in peak condition. These Methods may include calibrating the loop current, trimming the transducer values or performing some diagnostic test on the field device. Methods appear on the screen just like menus, but have a blue background. Click on the Method and it will start running in a new window. The Method will guide you through the process ensuring the procedure is completely and consistently performed. When the Method is complete the window will disappear.

**Step 11: Exit**

When you are through working on the field device simply exit DevComFF. Once the App exits, you can then disconnect the FF interface hardware.

# Table of Contents

# 1 INTRODUCTION

The Smart Device Communicator (DevComFF) allows access to and management of a FF compatible field device's configuration and calibration. This manual provides the information about the Hardware setup, Communication with Smart devices, and functions of DevComFF.

DevComFF is unique in that it uses the DD of the connected device to determine what information to display, what variables are available for edit, and what procedures to follow for calibration, setup, and maintenance.

## 1.1 Acronyms and Definitions

| Acronym | Definition |
|---|---|
| FF | Foundation Fieldbus. The communication protocol. |
| DD | Device Description File. This contains the device information. |
| DDL | Device Description Language |
| FCG | FieldComm Group, formerly the Fieldbus Foundation (FF) |
| DevComFF | Smart Device Communicator |
| ☰ | Window select button |

## 1.2 Conventions Used in This Manual

Following formatting conventions are used in this guide:

| Convention | Description |
|---|---|
| Words in **bold** type | Field names including buttons in the display, or important phrases. |
| → Arrow | Window select button followed by the selection to make are separated by →.<br>For example, select ☰ → **New Device** to connect to a new device. |
| UPPERCASE | Acronyms |
| UPPERCASE within angle brackets | Command keys<br>For example, tap <BACK>. |
| "Parenthesis" | Names of window elements, like "OK". |

## 1.3 Document Organization

DevComFF user manual is organized into the following sections:

| | |
|---|---|
| **Section 1** | Describes the scope and objective of DevComFF user manual along with the organization of the remaining part of the manual. |
| **Section 2** | Provides an overview of the DevComFF application and its architecture. |
| **Section 3** | Provides the information pertaining to hardware and software requirements for the DevComFF application. |
| **Section 4** | Provides the steps to install, activate, and uninstall the DevComFF application. |
| **Section 5** | Provides the steps to start the DevComFF application and connecting to field devices. |
| **Section 6** | This section explains different aspects of the DevComFF application and its functionalities. |

## 1.4 Getting Help

If you need help or encounter problems when using DevComFF or this guide, please contact ProComSol, Ltd. See Appendix C for contact information. Please provide the following information.

Create a text description of the problem. If possible, provide the text in event sequence, which will enable the duplication of the problem. Provide information about the system. This information must include:

- DevComFF version and License ID
- Mobile device information: make, model, and Android version
- What DD (Device Descriptor) is loaded for the FF device
- FF Device information: make, model, and device revision
- Point of contact: name, telephone number, and e-mail address

# 2 OVERVIEW OF DEVCOMFF

Field devices such as flow, pressure, level, temperature transmitters, and valve positioners provide the physical connection to the process. These devices allow the control system to monitor and manipulate process conditions. FF devices maintain a real-time database of process, configuration, identification, and diagnostic information. This information can be accessed using the FF Communications Protocol.

FF devices are capable of providing functions and features far beyond the basic task of providing a process input or accepting a control output to manipulate process conditions. Many FF compatible device manufactures create a DD (Device Description) describing all of these functions and features specific to that device. The DD also provides information essential to the successful configuration and calibration of the device.

DevComFF uses these DD's to access the data stored in a device, providing full configuration and setup support for all registered FF DD's.

DevComFF accesses and presents field device data based solely on its DD. No other files, information or custom drivers are required. DevComFF is intended to monitor and configure a single device at a time, it is directly connected to the current loop of the particular device and:

- Provides user interface to configure the FF field device,
- Provides a means to configure and view all the parameters related to FF field device, and
- Provides an option to view the detailed status and diagnostic capability of the device.

DevComFF allows viewing and modifying of field device parameters based on the DD. Using the device's DD, DevComFF performs various tests to verify the proper operation of the FF device. DevComFF runs as a standalone software application and must have a FF compatible modem attached to the system to interrogate the FF device.

# 3 SYSTEM REQUIREMENTS

The following minimum system requirements are recommended for operation of DevComFF.

| | |
|---|---|
| Mobile Device | Memory RAM: 1 GB<br>Memory ROM: 2 GB<br>Screen: 960x540 qHD |
| SD Card | Optional |
| FF Modem | ProComSol HM-BT-BAT-ER, HM-BLE, HM-USB-ISO, mobiLink, or equivalent |
| Bluetooth | Bluetooth 2.0 – HM-BT-BAT-ER<br>Bluetooth 4.0 – HM-BLE |
| USB Port | HM-USB-ISO |
| Operating System | Android Jelly Bean (4.3) |

# 4 DEVCOMFF INSTALLATION

## 4.1 Prerequisites

You need to be familiar with the basic functions of the following when installing DevComFF:

- Android operating system
- FF communication interface
- FF field device

## 4.2 Installing the DevComFF Application

### 4.2.1 DevComFF Application

To install the DevComFF application, perform the following steps:

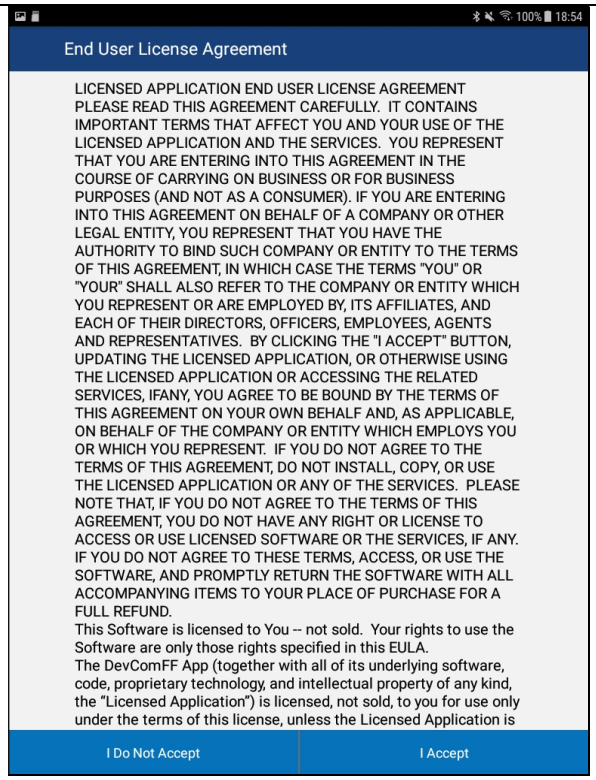
| Step | Action |
|---|---|
| 1 | Copy the file “com.procomsol.devcomff.apk” to your device. It is recommended to put it in the “Download” folder. |
| 2 | On Android device, launch the “MyFiles” app or equivalent. |
| 3 | Navigate to the directory where you saved the file in Step 1. |
| 4 | Click on the file “com.procomsol.devcomff.apk”. |
| 5 | At the “Do you want to install this application?” select “Install”. |

### 4.2.2 Activating DevComFF

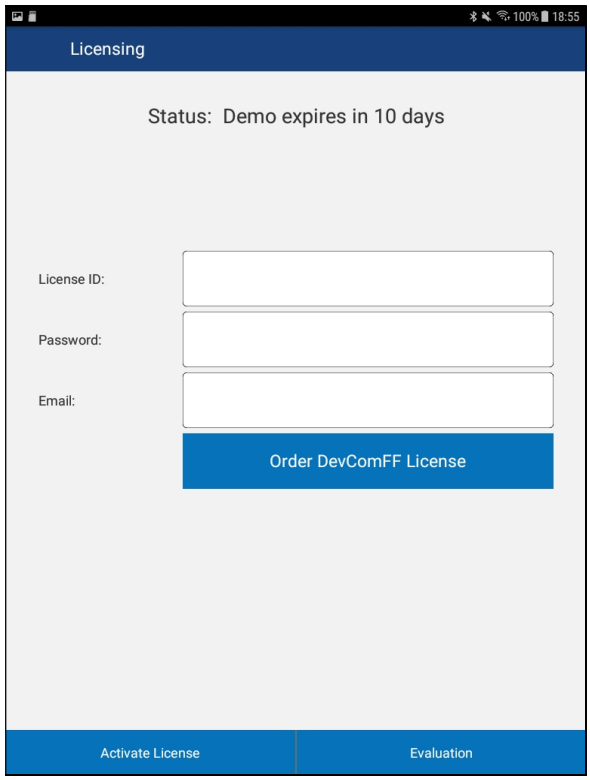
DevComFF must be activated for use after 10 days. The following procedure will activate the software (this only needs to occur one time):

| Step | Action |
|---|---|
| 1 | Launch the DevComFF App. Accept the EULA (End User License Agreement). If you do not accept the App will close. |

| Step | Action |
|---|---|



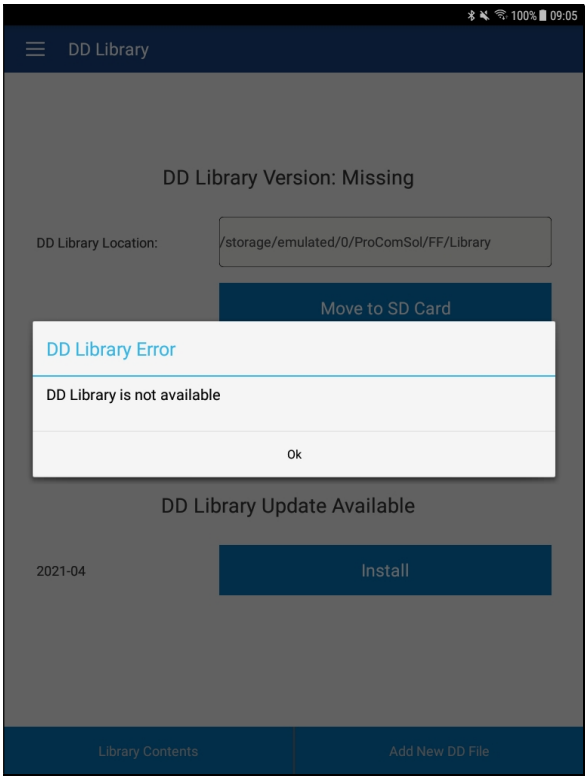

1 After the License Agreement is accepted, the Licensing window is shown:

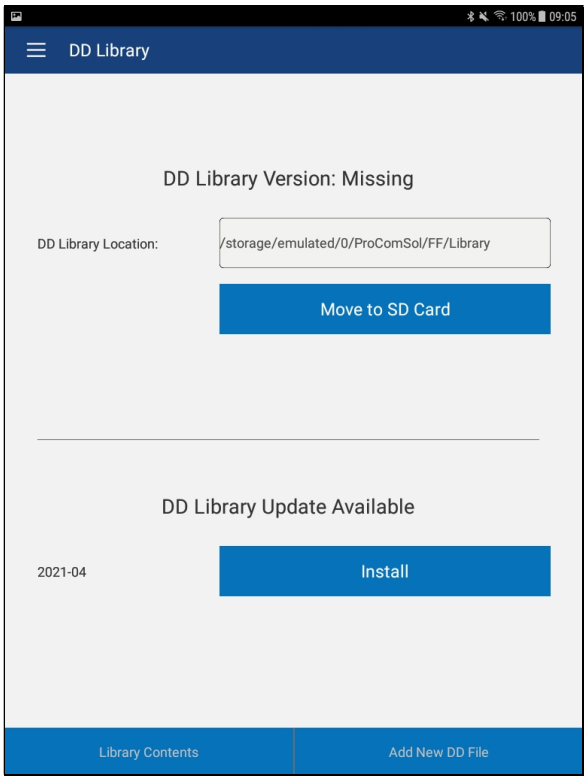


| Step | Action |
|---|---|
| 2 | To activate your license: Enter the License ID and Password given in your license purchase. Also enter your Email address if you wish to receive update notifications. Then tap “Activate License”. Once activated, this window will no longer appear during start up. |
| 3 | To proceed in Evaluation mode, tap “Evaluation”. You can use the App for 10 days before activation is required. |
| 4 | If you need to purchase a license, tap “Order DevComFF License” and you will be sent to the DevComFF page on the ProComSol website. |

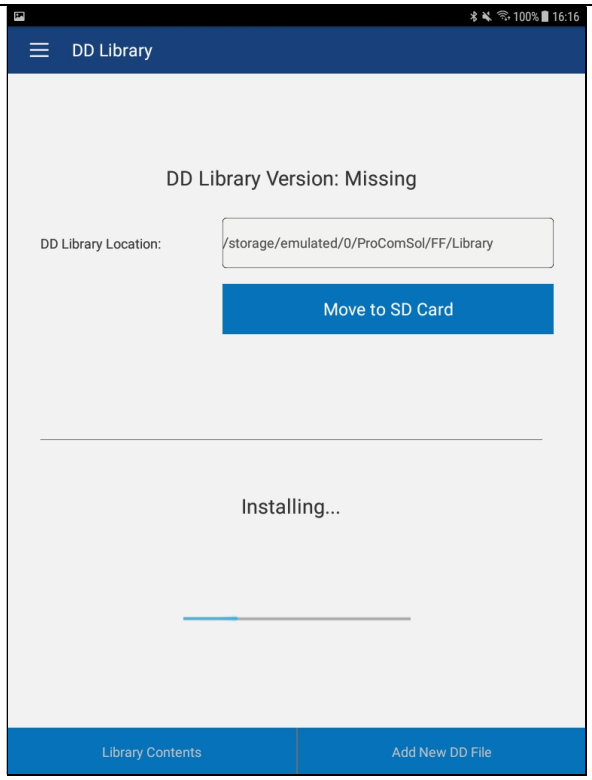
### 4.2.3 Installing the DD Library

The DD Library is required for the App to function. Perform the following to perform the initial DD Library load to your device:

| Step | Action |
|---|---|
| 1 | The following Window is shown after the Licensing Window:<br>  <br>Tap “Ok” to continue. |

| Step | Action |
|---|---|
| 2 |  <br>Tap “Install” to continue. |
| 3 | The following screen will appear. Note that the full DD Library download takes about 15 minutes. Do not close this screen! |

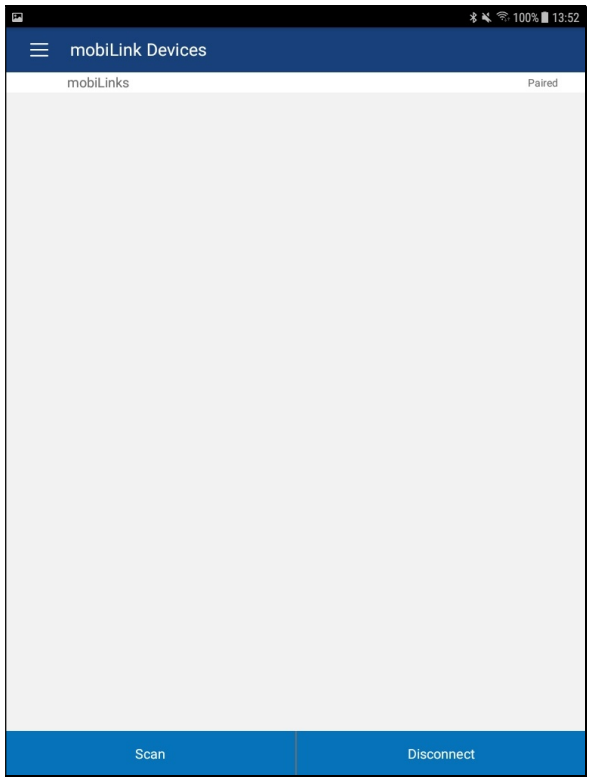
| Step | Action |
|---|---|



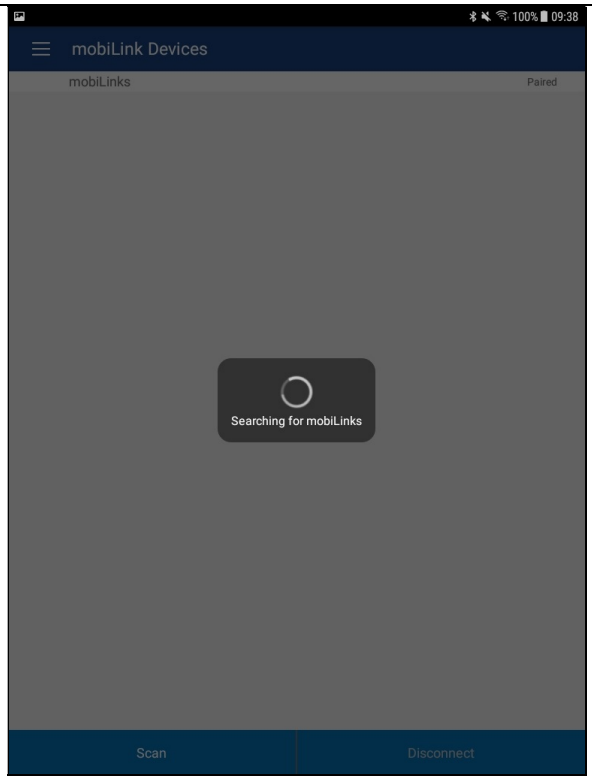

4 The following screen will appear when the DD Library install is successfully completed:

### 4.2.4 Selecting a FF Modem

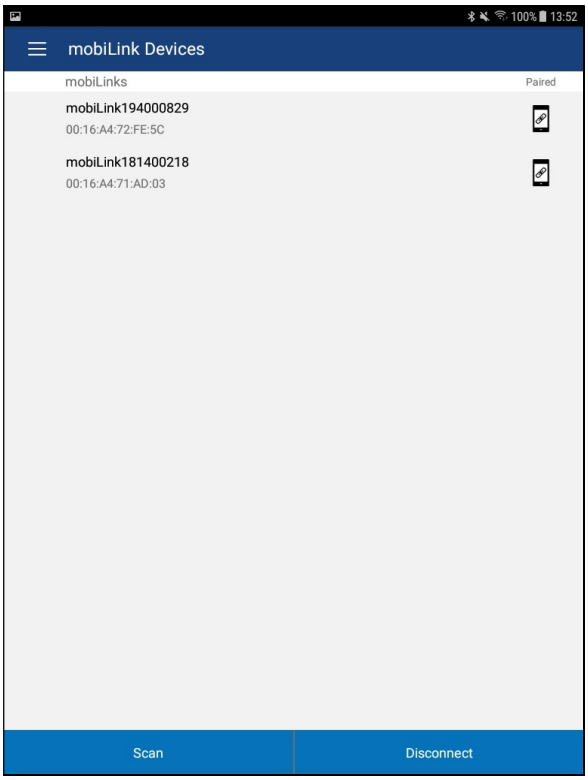
A FF Modem is required for communication to your FF device. The following procedure is used to select the modem (this only needs to occur one time):

| Step | Action |
|---|---|
| 1 | The following Window is shown after the initial DD Library install is complete:   |
| 2 | Tap “Scan” to search for mobiLink devices within Bluetooth range. This screen will show while the scan is in process: |

| Step | Action |
|---|---|




3 The next Window will show all available mobiLink devices after "Scan" was tapped.



| Step | Action |
|---|---|
| 6 | Tap the desired mobiLink on the list. Once a mobiLink is selected and a successful connection is made, this Window will not appear again during start up.<br><br>After selecting a mobiLink, communications with the FF segment will begin. |

## 4.3 Connecting to the FF Network

The DevComFF application communicates with the FF Field Devices through a FF compatible communication interface (e.g., a "FF Modem"). Using this communication interface you will transmit real-time FF data between DevComFF and the connected FF compatible field device.

Using the clips on the wires from the mobiLink, connect to the FF Power Hub or other dedicated FF communicator connection point.


**Figure 1 Typical DevComFF Hardware Setup**

## 4.4 Uninstalling the DevComFF Application

To uninstall the DevComFF application, perform the following steps on the Android Device:

| Step | Action |
|---|---|
| 1 | Go to the Application Manager (or equivalent) screen. |
| 2 | Select “DevComFF” |
| 3 | Select “Uninstall”. |
| 4 | Select “OK” |

# 5 USING DEVCOMFF

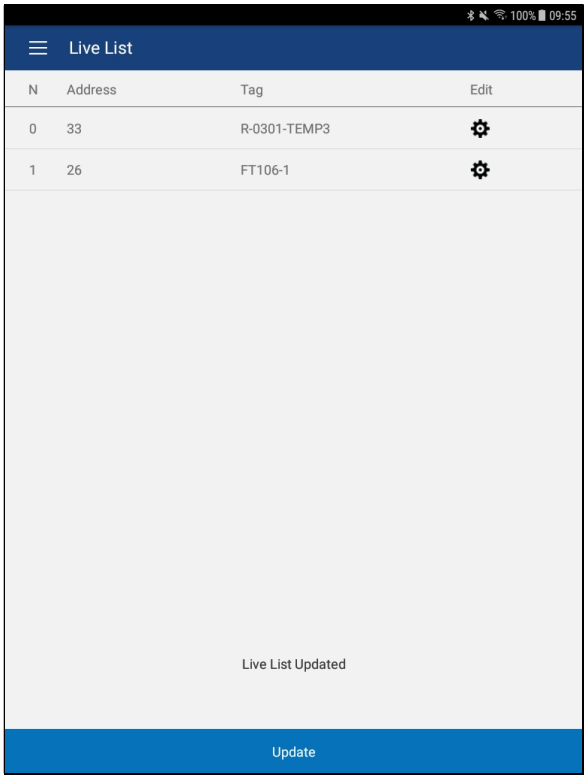
## 5.1 Starting DevComFF

Establish the physical connection between the field device and the FF Modem by connecting the FF leads to the FF power hub or dedicated FF communicator connection point in the segment. With the physical connection established, launch DevComFF by tapping the DevComFF icon on your device screen.

### 5.1.1 Live List

When first launching DevComFF, the App determines what devices are connected to the FF Segment. It polls address 0-247 and shows the results on the Live List.

| Step | Action |
|---|---|
| 1 | Start the DevComFF App. The App identifies the devices on the segment and displays them when found. For example: |

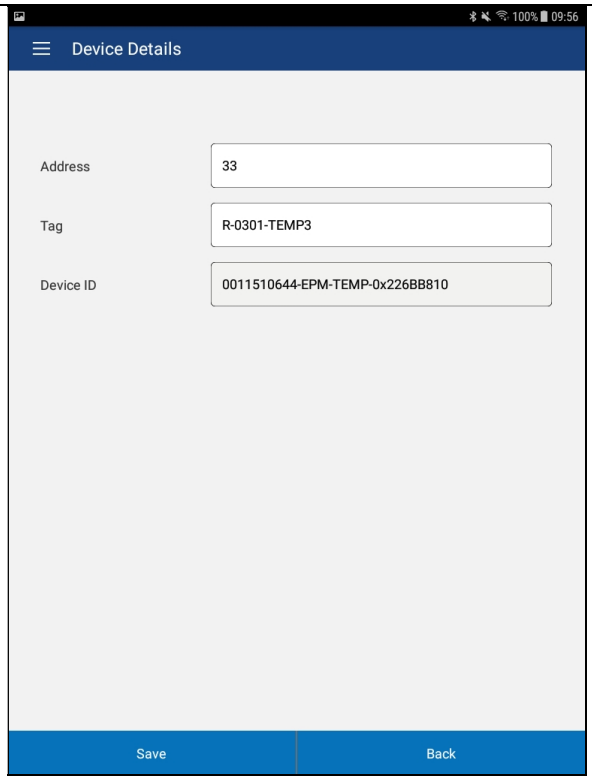



From here you can tap the Tag of the device you want to connect to, or tap the Edit icon to edit the Address and Tag of the selected device.

### 5.1.2 Device Edit

When the Edit icon is tapped, details of the device are displayed and can be edited.

| | |
|---|---|
| 1 | Details of the device are displayed and can be edited. |

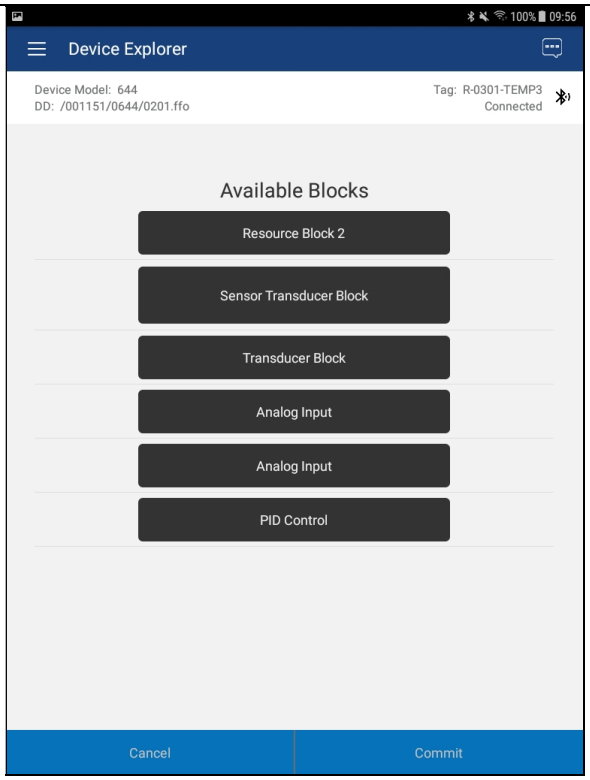



Make the required changes and then tap Save to make the changes permanent in the FF device. Tap Back to go back to the Live List. Note that DeviceID is read only.

### 5.1.3 Device Connect/Block List

When the Tag of the device you want to connect to is tapped, the App connects to that specific device, loads the proper DD file, and then displays menus and data based on the DD file loaded. The first menu displayed is a list of the blocks in the device.

| | |
|---|---|
| 1 | An example of a block list. Note that each device type will have a different list based on its DD file. |

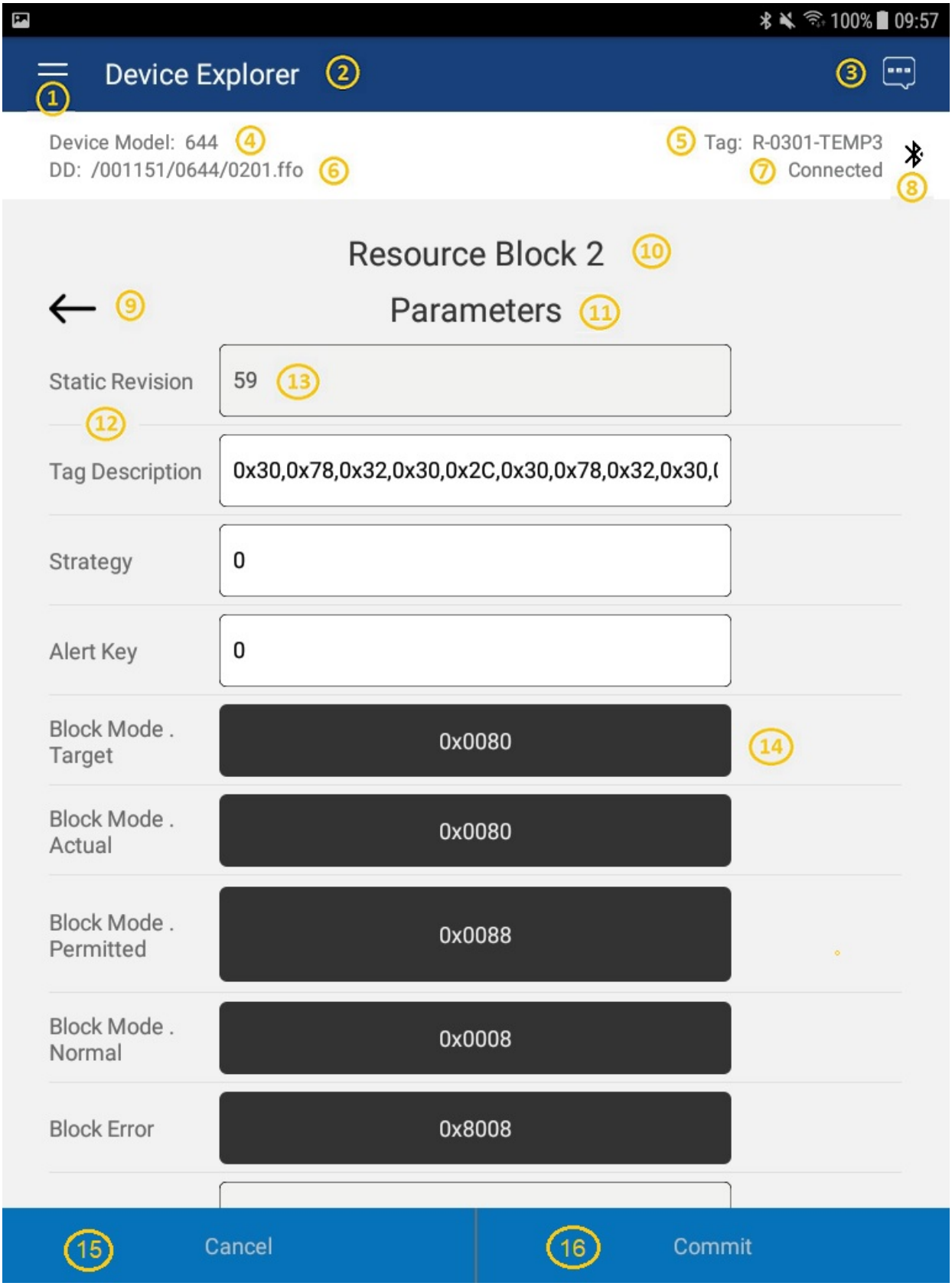



From here, tap on the block you wish to expand or perform other tasks as needed.

## 5.2 Getting Familiarized with DevComFF

### 5.2.1 The Device Explorer Window Fields

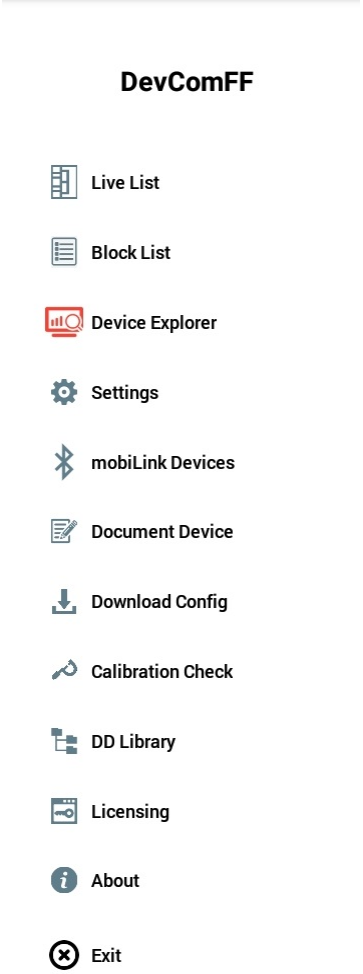
The DevComFF Device Explorer window is designed to provide the operator with valuable information in order to make work quick and easy. Below is a typical Device Explorer window with each field described:


100% 09:57
Device Explorer
1
2
3
Device Model: 644
4
DD: /001151/0644/0201.ffo
6
5 Tag: R-0301-TEMP3
7 Connected
8
Resource Block 2
10
9
Parameters
11
Static Revision
59
13
12
Tag Description
0x30,0x78,0x32,0x30,0x2C,0x30,0x78,0x32,0x30,(
Strategy
0
Alert Key
0
Block Mode . Target
0x0080
14
Block Mode . Actual
0x0080
Block Mode . Permitted
0x0088
Block Mode . Normal
0x0008
Block Error
0x8008
15
Cancel
16
Commit

1 - Window Navigation icon, aka “Hamburger” icon
2 - Window name
3 - Device Status Icon
4 - Device model of connected FF device
5 - Tag name of connected FF device
6 - DD loaded for connected FF device
7 - mobiLink status
8 - Communication indication
9 - Back softkey for menu navigation
10 - Block Name
11 - Menu title for current menu
12 - Parameter Label
13 - Parameter Data
14 - Sub menu
15 - Commit, save edit changes to connected FF device
16 - Cancel, return edit changes to original value

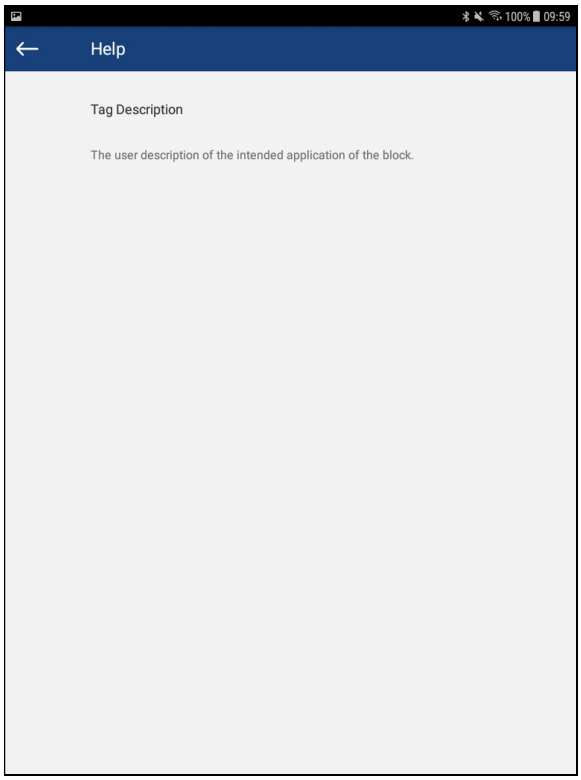
### 5.2.2 Navigating the Window Menus using the ☰ icon (aka “Hamburger”)

DevComFF has several windows with specialized information. Tap the Hamburger icon and the following Window appears, details in Section 6.5: Note that the red icon indicates the active Window when the Hamburger icon was tapped. This helps the user return to the previous window.

| Menu | Explanation |
|---|---|
|  | **DevComFF –** App name<br><br>**Live List -** List of FF devices found on the segment.<br>**Block List** - List of Blocks found on the connected FF device.<br>**Device Explorer** – Main device window with device data<br>**Settings** – Launches Settings Window<br>**mobiLink Devices** – Launches mobiLink Selection Window.<br>**Document Device** – Launches the Document Device Window<br>**Download Config** – Launches the Saved Configurations Window<br>**Calibration Check** - Launches the Calibration Check Window<br>**DD Library** – Launches the DD Library Window.<br>**Licensing** – Launches the License Window.<br>**About** – Shows copyright information, support information, and update information.<br>**Exit** - Exit DevComFF. |

### 5.2.3 Using the Help Menus

When you select a parameter label, a window will appear with information about the parameter. Below is an example:




### 5.2.4 Menu Color Scheme

DevComFF application uses different colors to represent different elements of the application. The following table lists the colors and their meanings:

| Color Example | Meaning |
|---|---|
| <Menu Name> | Indicates a menu in the navigation tree |
| <Label> <Data> | Indicates an "Enumerated Variable" item (Note the triangle) |
| <Label> <Data> | Indicates a Read Only "Variable" item (Note the data background is gray) |
| <Label> <Data> | Indicates an Editable "Variable" item (Note the data background is white) |
| <Method Name> | Indicates a "Method" (Standard Operating Procedure) item |
| <Edit Display Name> | Indicates an "Edit Display" item |

# 6 FUNCTIONS AND BASIC OPERATIONS

## 6.1 Overview

DevComFF allows the user to monitor and configure a single device at a time in the field. Each device had a DD that determines what device information is present. A DD may contain any of the following parameters/elements:

**Variable**

A variable is defined as the data contained in the device (e.g. Device Firmware Version). There are three types of variables:

Numeric – Variable data consists of numbers
Text – Variable data consists of text and/or numbers
Enumerated – Variable data is from a list of valid data points.

The above variables are further definable as follows:

Editable Variable – It allows the operator to modify the value and download it to the device.
Non-Editable Variable – It is a read-only data from the device.

**Edit Display**

This option is used to view a group of parameters. You can also modify a single parameter from this group, based on which other parameters of the device get altered.

For example, if the Engineering Unit of the device is modified, the corresponding Low Limits and High Limits change as per the Engineering Unit set.

**Method / Standard Operating Procedure (SOP)**

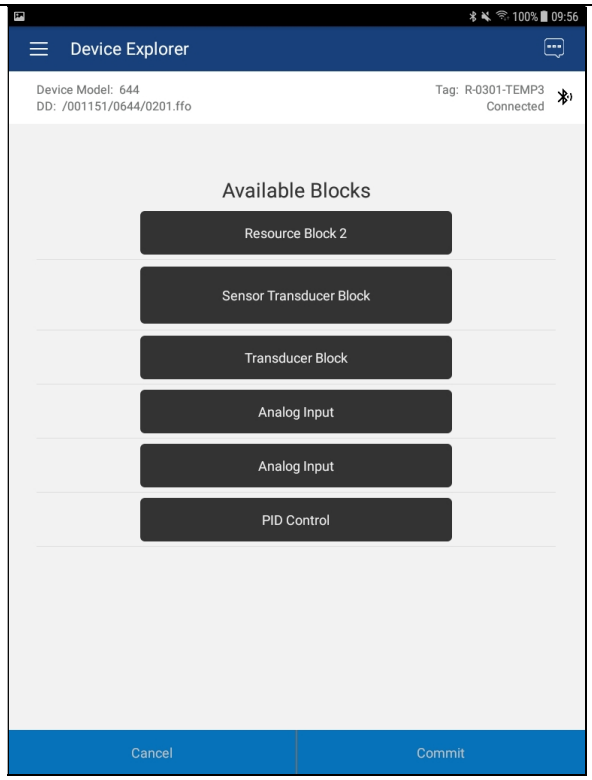
This option helps to perform various tests on the device for instance, Self Test and Loop Test. A Method or SOP is a series of steps that are executed in a sequence results in the completion of some device related tasks. When a method gets invoked, it gives various warning messages and options to the user, by which the user can thoroughly test the device. If a test is aborted by operator command at any stage of the sequence, the method invokes additional steps to bring the device back to its original state before the test.

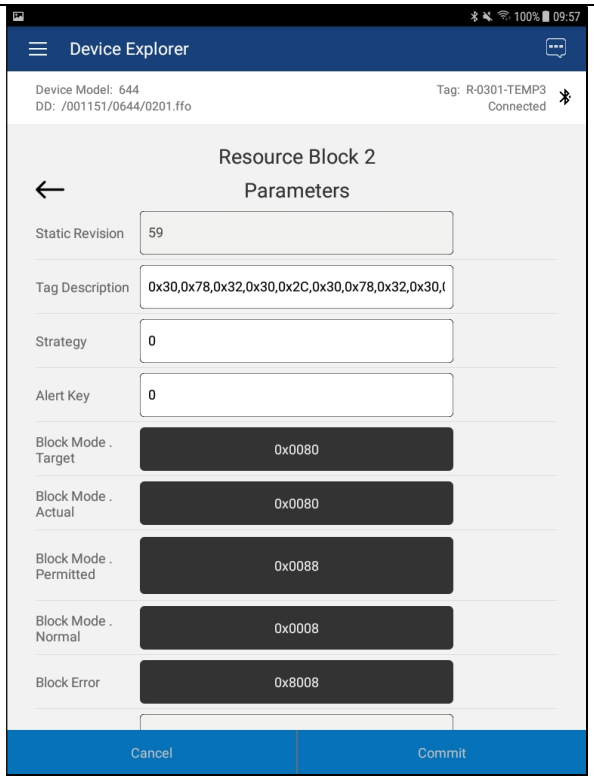
## 6.2 Configuring Device Information

### 6.2.1 Overview

DevComFF allows you to view and configure the field device parameters based on the device description (DD). The related variables are grouped under various menus of different levels as defined in the DD file. The following table describes the details about the device configuration:

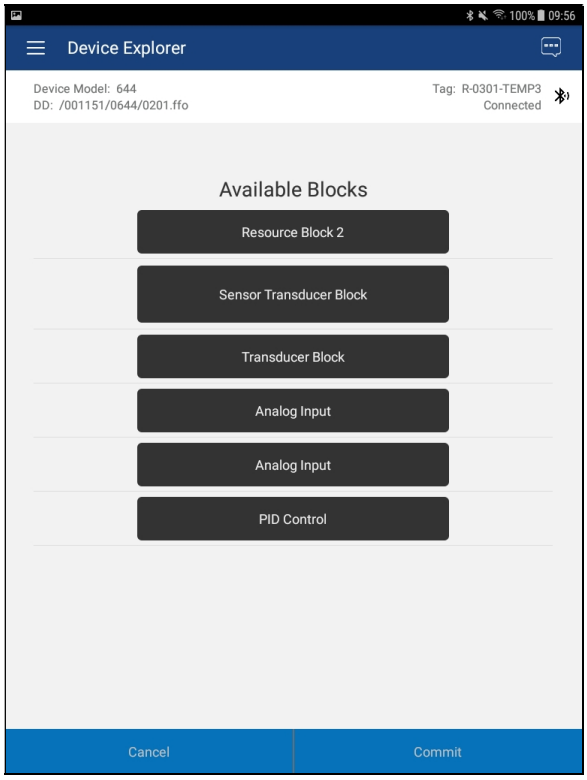
| Step | Action |
|---|---|
| 1 | Ensure that the application is running and communications have been established: |

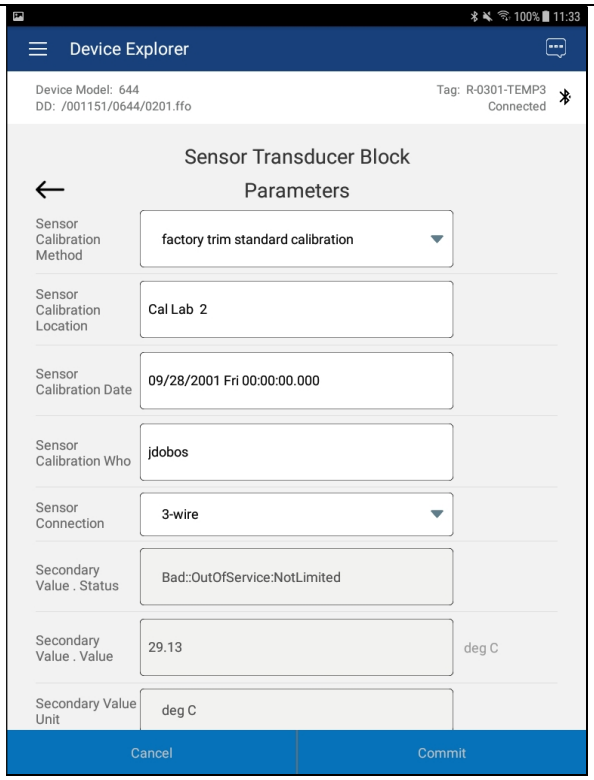
| Step | Action |
|---|---|
| |  |
| 2 | There are three types of variables: Numeric, Text, and Enumerated. In turn these variables can be read/write and read only. Dynamic variables are also read only.<br>Following points describe how the device parameters represents their status when connected to DevComFF:<br>White Data Background: Modifiable Values<br>Gray Data Background: Read only Values<br>Data field with gray triangle: Enumerated data |

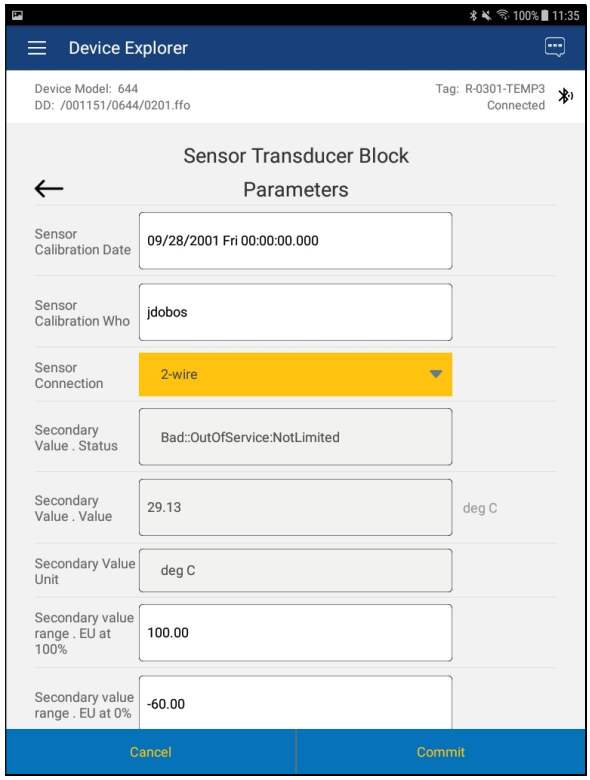
| Step | Action |
|---|---|
| |  |
| 3 | Select the parameter and configure the values, as required. |
| 4 | The subsequent topics explain how to configure device parameters. |

### 6.2.2 Variable Edit

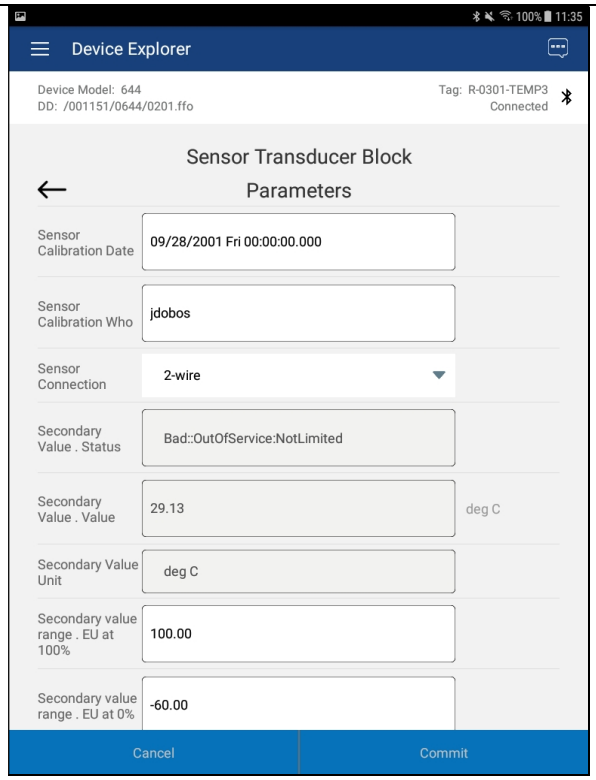
To edit a parameter of the connected device, perform the following steps:

| Step | Action |
|---|---|
| 1 | Ensure that the application is running and communications have been established:   |
| 2 | Select the menu where the editable parameter is present as shown below. For this example we are editing Sensor Calibration Location: |

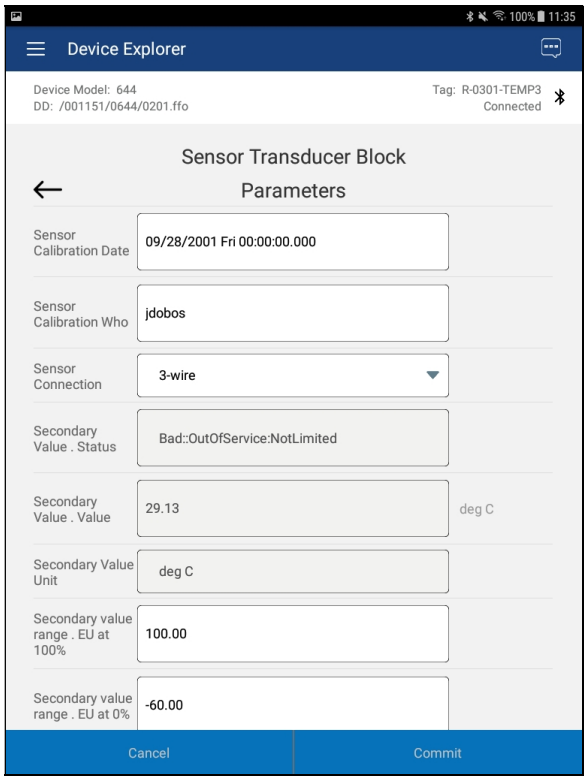
| Step | Action |
|---|---|
| |  |
| 4 | Make the changes to the parameter value, as required. |

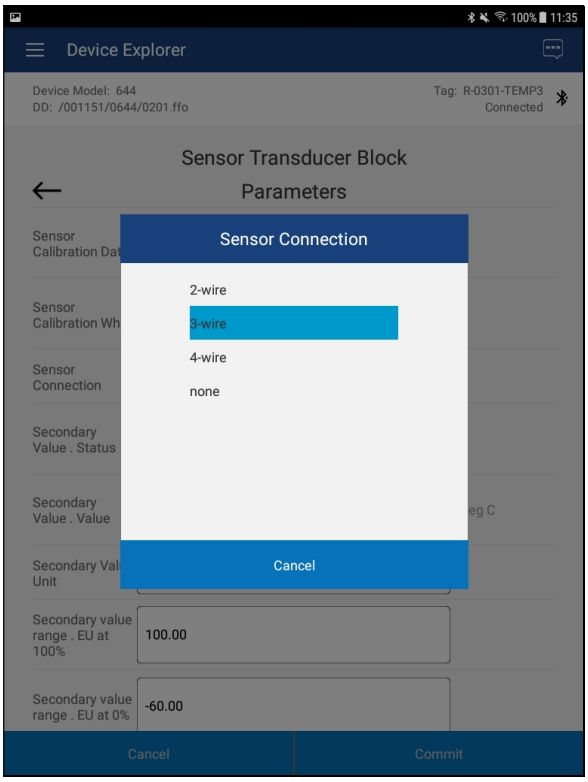
| Step | Action |
|---|---|
| 5 | Use the Back key or “Done” button to remove the keyboard. Note that the changed variable data background is now Yellow and the “Commit” and “Cancel” buttons are also Yellow:  |
| 6 | Click on the “Commit” button to send the new value to the device. The buttons and data return to white when complete: |

| Step | Action |
|---|---|

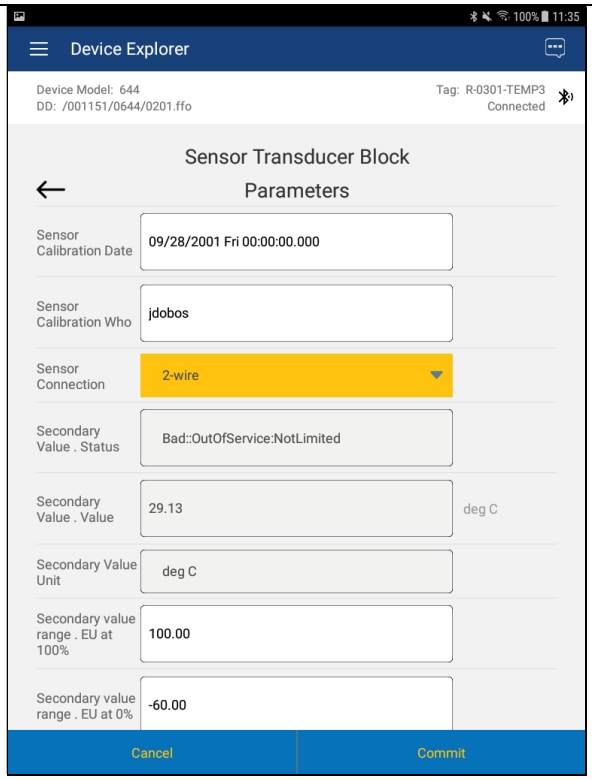



7 For Enumerated variables, the process is very similar. Start by selecting the menu where the desired parameter is located:

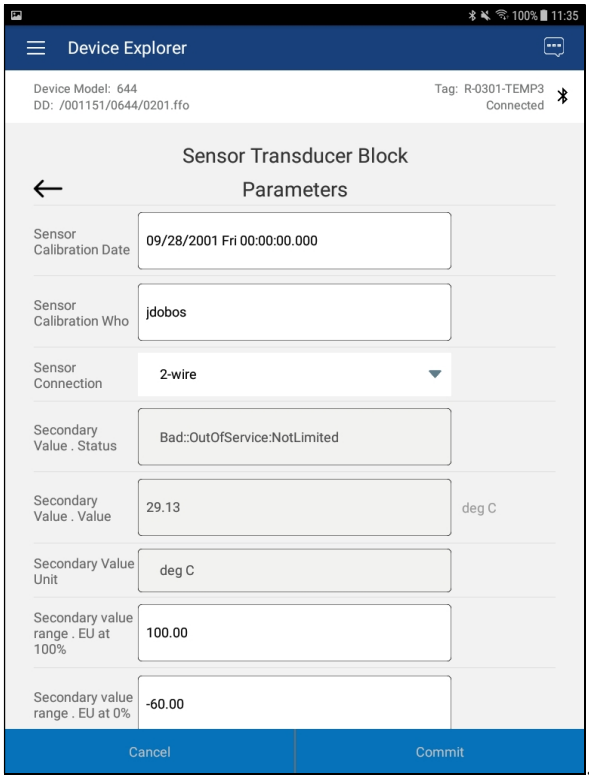


| Step | Action |
|---|---|
| 8 | Select the variable data to edit it. A list will appear with the valid values to use:   |
| 9 | Select the value you wish to use. |
| 10 | Once selected, the list will disappear and the new value will be inserted into the data field. Note that the changed variable background is now Yellow and the “Commit” and “Cancel” buttons are also Yellow: |

| Step | Action |
|---|---|




11 Click on the “Commit” button to send the new value to the device:



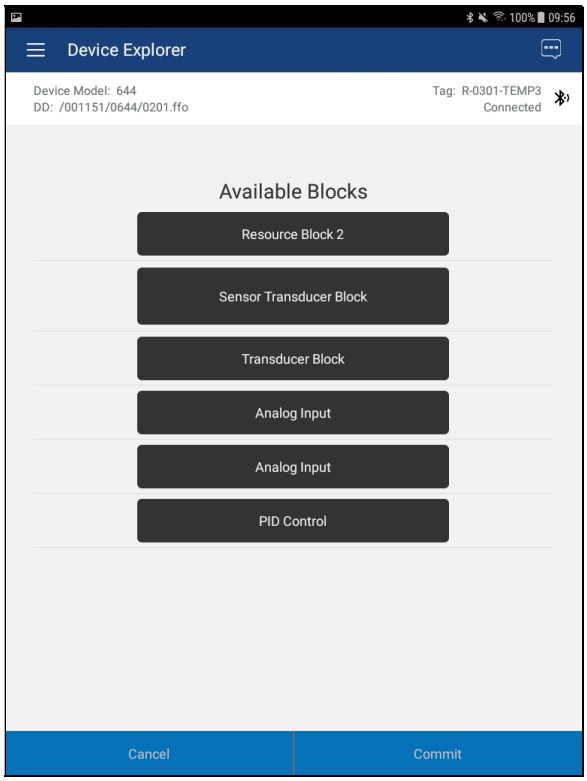
### 6.2.3 Executing Methods or Standard Operating Procedures

Methods are defined in the DD file for the device that DevComFF is connected to. You can select the Method and execute it for calibrating the device, trouble shooting, etc. Method execution leads you through a number of steps, like in a wizard.

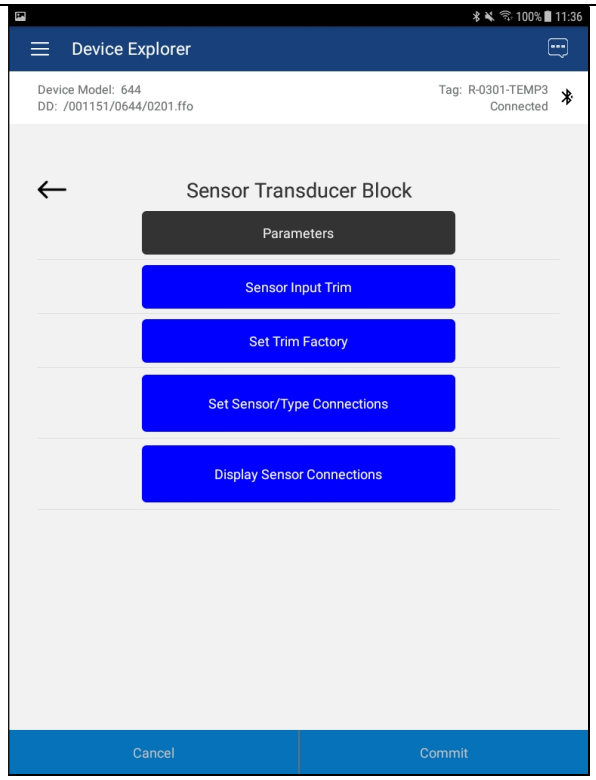
A Few examples of methods include,

Set high and low range calibration points
Calibrate the device
Run the advanced diagnostic test procedure
Execute tests to gather information on device operation.

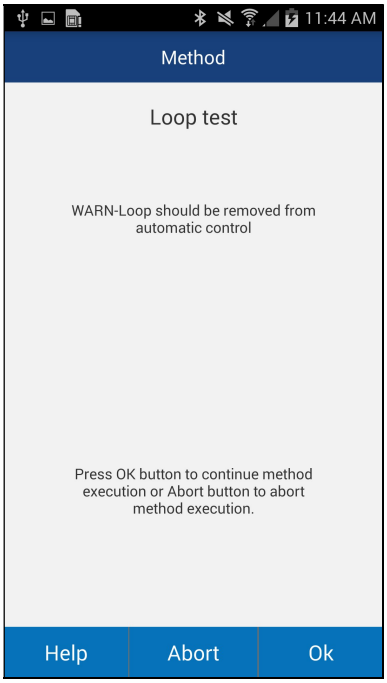
To execute a Method, perform the following steps:

| Step | Action |
|---|---|
| 1 | Ensure that the application is running and communications have been established:   |
| 2 | Select the menu where the method is present and select the desired Method: |

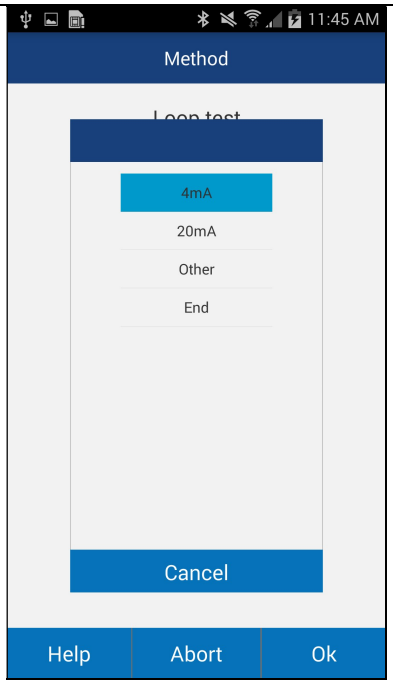
| Step | Action |
|---|---|




3 Below is an example of a Method window:




4 Click “OK” to move to the next dialog in the Method sequence. Some methods require more user input such as selecting an enumerated value as below:

| Step | Action |
|---|---|
| |  |
| 5 | Click "Abort" to cancel the Method execution. |
| 6 | Click "Help" to get specific help for that step of the Method. This Help information is provided by the device DD. |

## 6.3 Calibrating FF Field Devices

Calibration of field devices and loop test are achieved by executing the Methods or Standard Operating Procedures that are specific to device. Methods are defined based on the test parameters specific to the device, providing information for the calibration of that device.

See the previous section for Method execution.

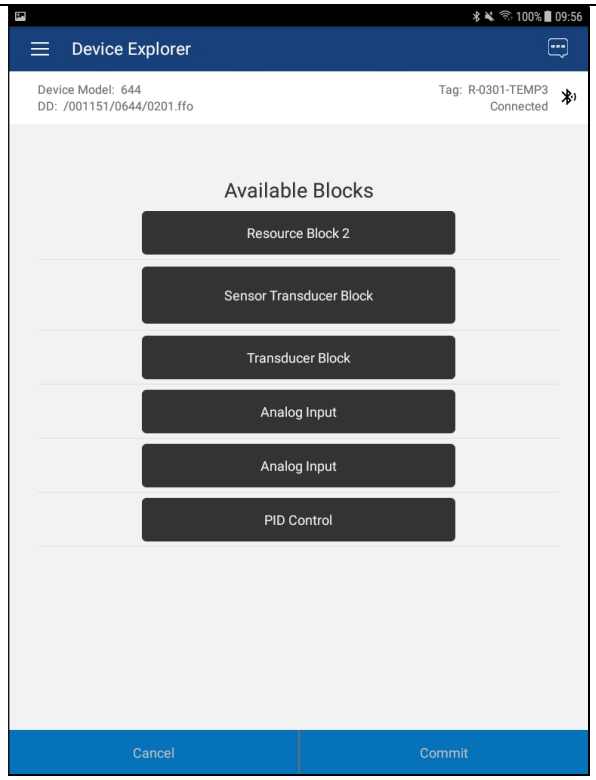
## 6.4 Viewing the Device Status

DevComFF provides the user with the ability to monitor the device specific status of the device.

To view the device and status, perform the following steps:

| Step | Action |
|---|---|
| 1 | Ensure that the application is running and communications have been established: |

| Step | Action |
|---|---|




2 Select the Device Status icon. The following window is displayed:

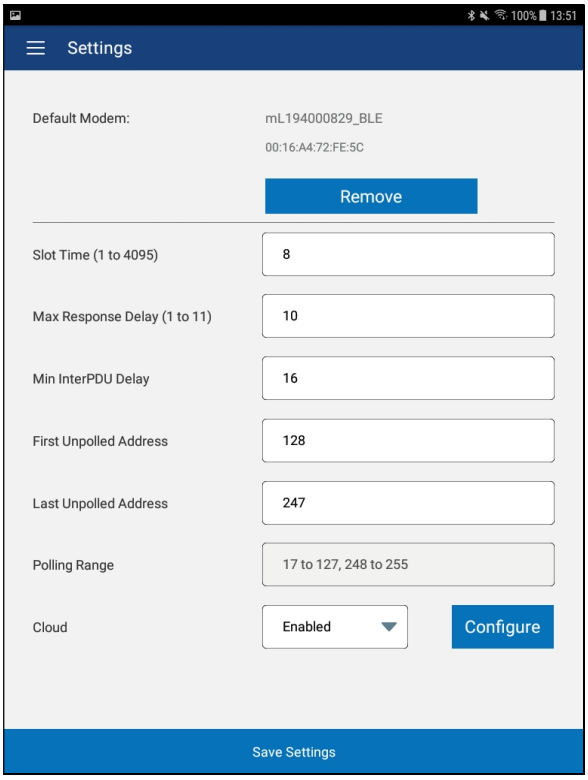
| Step | Action |
|---|---|
| | The status text is shown for block. |
| 3 | Tap the Back button to close the Device Status window. |

## 6.5 Window Detailed Description

### 6.5.1 Settings

There are several Settings that may need to be changed by the user to perform a desired activity. Below is a description of what Settings are available:

| Step | Action |
|---|---|
| 1 | Ensure that the application is running. Communications do NOT need to have been established. |
| 2 | Select ☰ → **Settings** from the main window. The Settings window is displayed: |




Each Setting is explained below.

#### 6.5.1.1 Default Modem

This option allows the user to disconnect the modem. Tap "Remove" to clear the modem from App memory.

#### 6.5.1.2 Slot Time

This option allows the user to select the Slot Time. Valid range is 1 to 4095.

#### 6.5.1.3 Max Response Delay

This option allows the user to set the Maximum Response Delay. Valid range is 1 to 11.

#### 6.5.1.4 Min InterPDU Delay

This option allows the user to select the Minimum InterPDU Delay. Valid range is xx to yy.

#### 6.5.1.5 First Unpolled Address

This option allows the user to select the range of addresses polled when looking for devices on the FF segment. Valid range is xx to yy.

#### 6.5.1.6 Last Unpolled Address

This option allows the user to select the range of addresses polled when looking for devices on the FF segment. Valid range is xx to yy.

#### 6.5.1.7 Polling Range

This is a notification showing the user the address range that will be polled. It is based on the First and Last Unpolled Address settings.

#### 6.5.1.8 Cloud

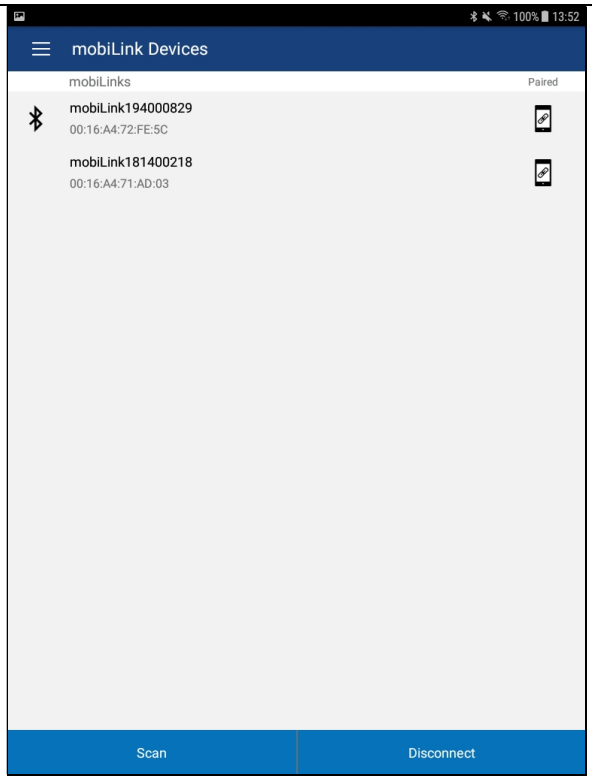
This option allows the user to enable or disable the cloud features for this device. See Section 6.9 for Cloud details.

| Step | Action |
|---|---|
| 1 | Tap the triangle next to the current Cloud setting. A drop down list will appear with the valid options. |
| 2 | Tap the desired selection. If "Enabled", then the Cloud Configure button becomes active. Tap this button to configure the Cloud User. See Section 6.9.1. |
| 3 | Note that it is not necessary to tap "Save Settings" to save the Cloud setting. |

### 6.5.2 mobiLink Devices

This window allows the user to view the current modem or to change what modem to use for communications.

| Step | Action |
|---|---|
| 1 | The Window will show all available mobiLink devices with the current selected mobiLink highlighted and/or marked with the Bluetooth icon. |

| Step | Action |
|---|---|
| |  |
| 2 | Tapping the currently selected mobiLink will restart the connection. |
| 3 | Tapping “Scan” will look for nearby mobiLink devices using Bluetooth. |
| 4 | Tapping “Disconnect” will remove the connection to the current mobiLink. |

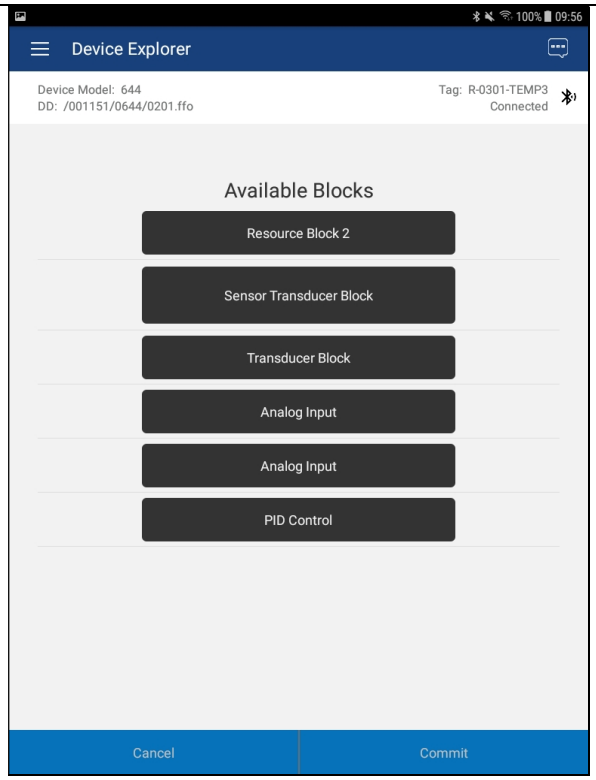
### 6.5.3 Document Device

FF Device configurations can be saved to memory as a comma delimited text file and formatted PDF file to document the device.

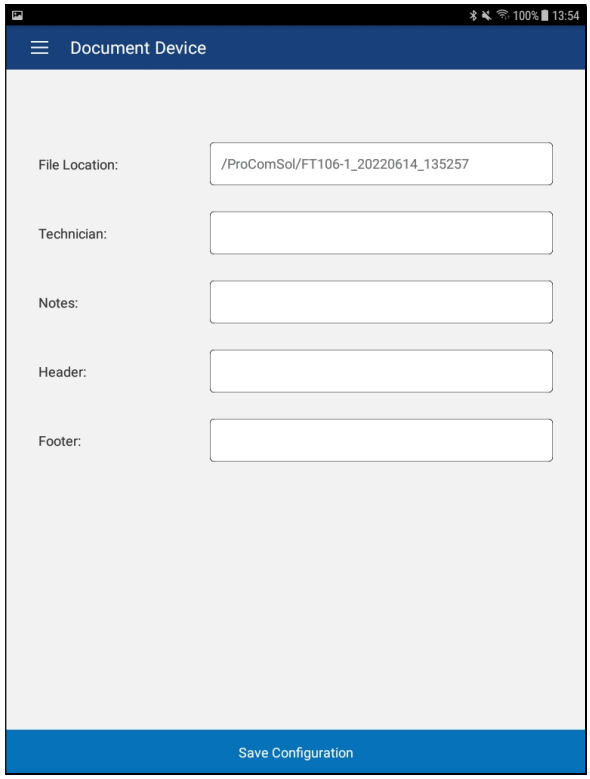
To save device configurations to disk, perform the following steps:

| Step | Action |
|---|---|
| 1 | Ensure that the application is running and communications have been established: |

| Step | Action |
|---|---|




2 Select ☰ → **Document Device** from the main window. The Document Device window is displayed:

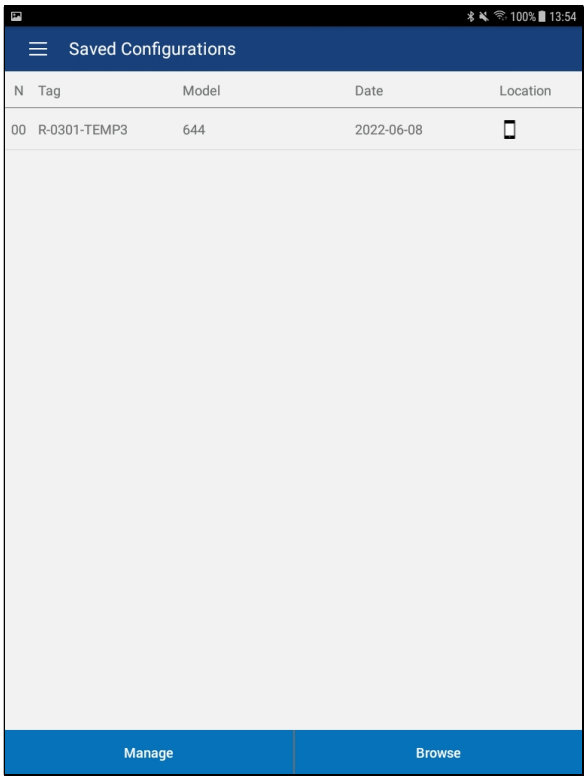


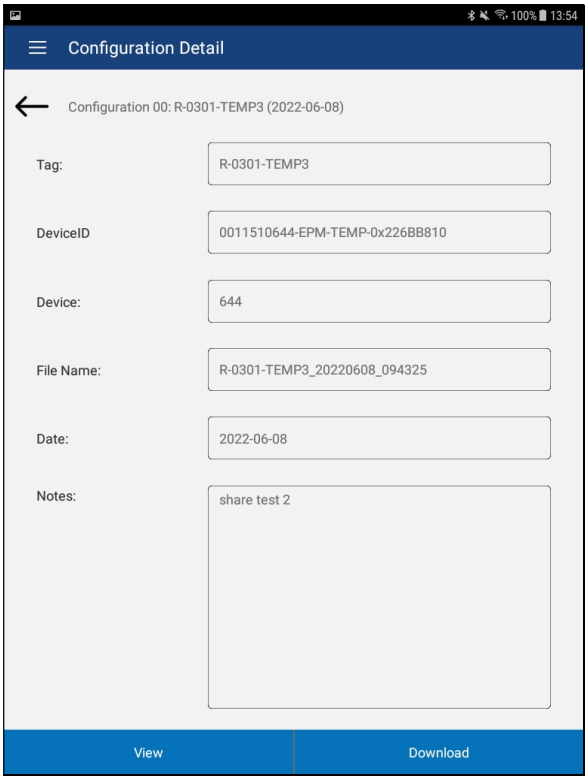
| Step | Action |
|---|---|
| 3 | The default directory is \ProComSol. The default file name is Tag_Date_Time. The filename can be changed by the user. Edit the directory and filename as needed. |
| 4 | Enter Notes in the Notes field if desired. Enter Technician name in the Technician field if desired. |
| 5 | Enter Header and Footer information for the PDF file if desired. |
| 6 | Tap the "Save Configuration" button to save device configuration to text file and PDF file. |
| 7 | When complete, the PDF file will be displayed. You may need to select which App you want to use to display the PDF file. |

### 6.5.4 Download Config

The saved FF Device configurations can be viewed and even downloaded to other devices. If using Cloud functionality, also see Section 6.9.5.

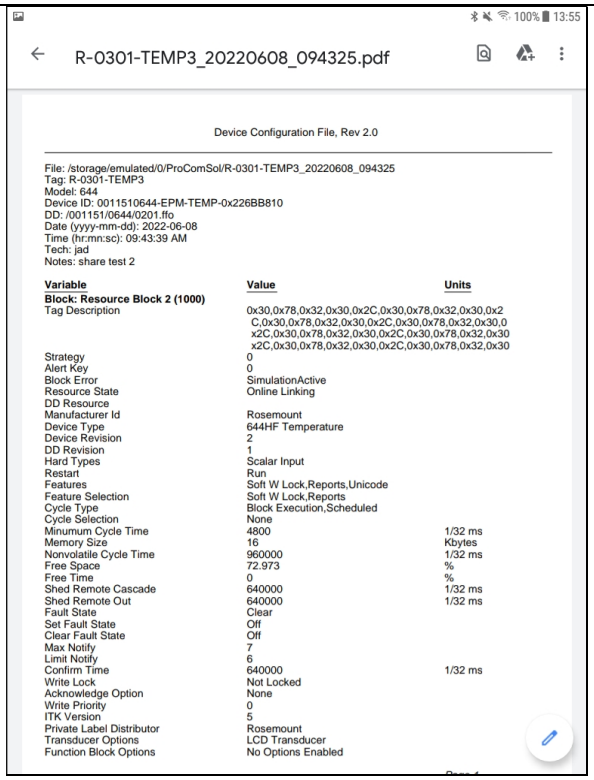
To view saved device configurations, perform the following steps:

| Step | Action |
|---|---|
| 1 | Select ☰ → **Download Config** from the main window. The Saved Configurations window is displayed:  |

| Step | Action |
|---|---|
| | The  icon means the configuration file is stored locally on the device. |
| 2 | The saved configurations are shown in the order they were created. You can scroll up and down the list if necessary. |
| 3 | Tap a configuration to view details of the configuration. When a configuration is tapped, the Configuration Detail window is displayed:<br>  <br>This window shows the details of the saved configuration. |

### 6.5.4.1 View Saved Configuration

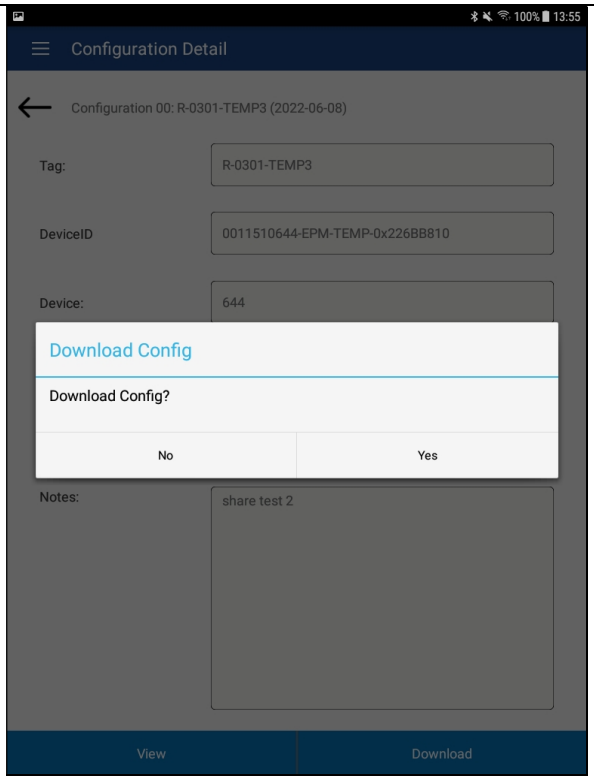
| Step | Action |
|---|---|
| 1 | From the Configuration Detail window, tap “View”. |
| 2 | The PDF file for the saved configuration is shown using the Android device PDF viewer App: |

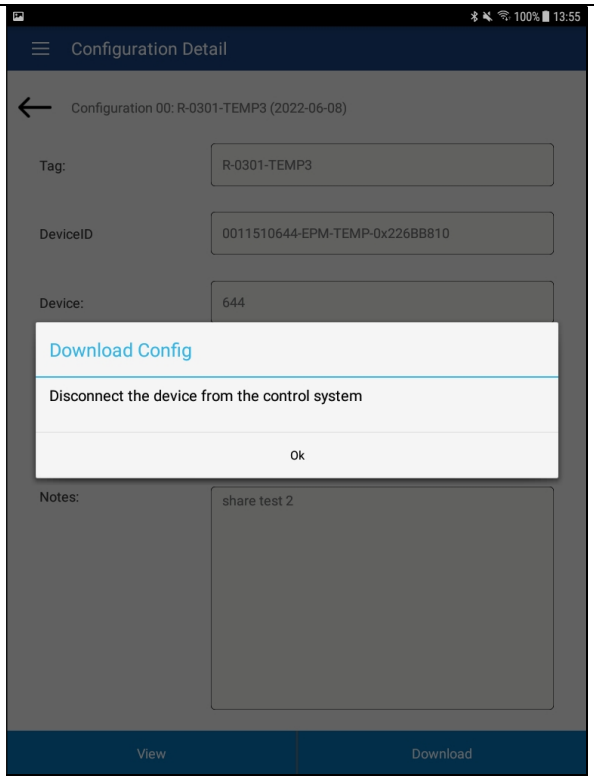
| Step | Action |
|---|---|
| |  |
| 3 | Tap the “Back” key to dismiss |

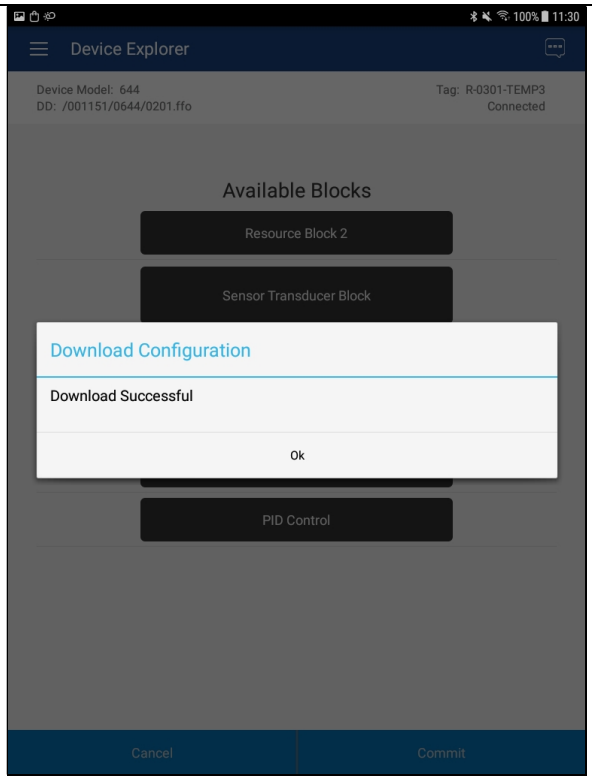


### 6.5.4.2 Configuration Write

| Step | Action |
|---|---|
| 1 | Ensure that the application is running and communications have been established. |
| 2 | From the Configuration Detail window, tap “Write”. The following Prompt is displayed: |

| Step | Action |
|---|---|
| |  |
| 3 | Tap “Yes” to continue or “No” to go back to the Configuration Detail window. |
| 4 | If “Yes”, tapped, the following prompt appears: |

| Step | Action |
|---|---|
| |  <br>This alerts the user that a configuration change can upset the process and the device should not be connected to the process. |
| 5 | Tap “Ok” when device is not connected to the process. |
| 6 | When the configuration write is complete, the following prompt will be displayed: |

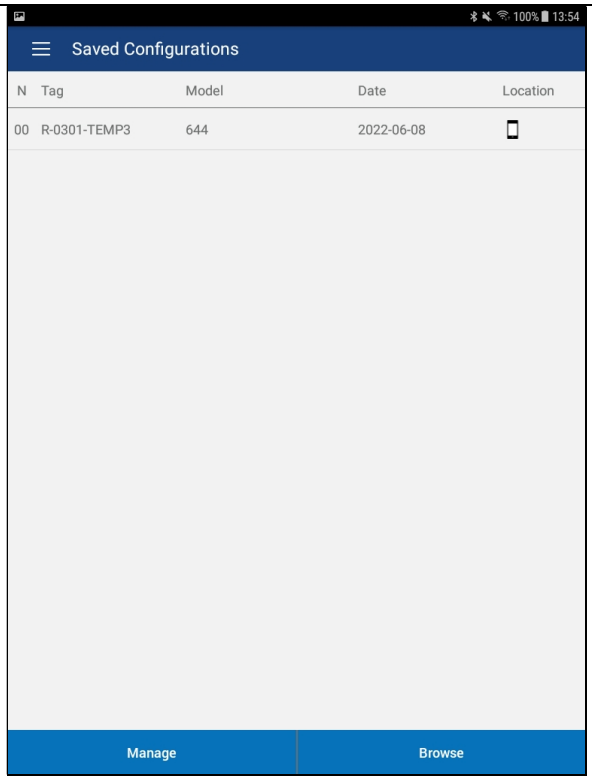
| Step | Action |
|---|---|
| |  <br>Tap "Ok" to dismiss. |

### 6.5.4.3 Configuration Browse

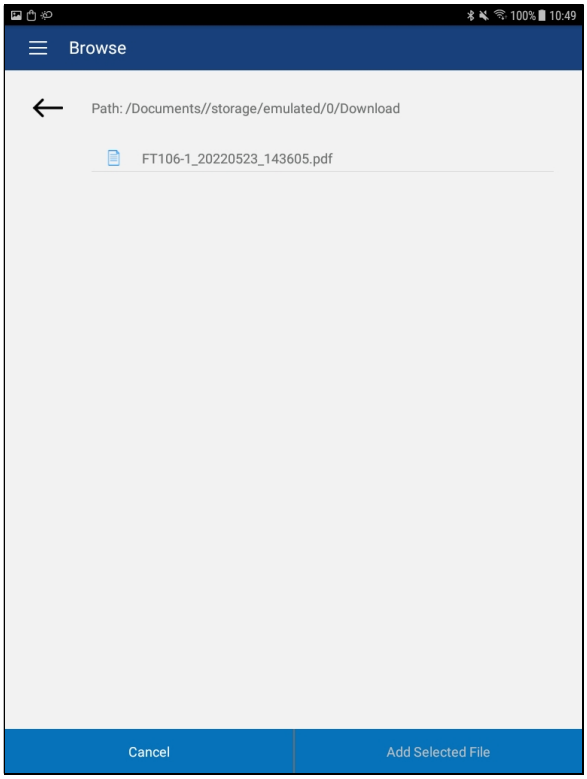
This function allows the user to bring configurations saved from another source into their device. The other source can be other DevComFFDroid users or even DevComFF2000 users.

| Step | Action |
|---|---|
| 1 | Copy the zzz.pdf, zzz.dc, and zzz.txt (where zzz is the configuration root file name) files to the Android device. The recommended directory is the /Download directory |
| 2 | Select ☰ → **Download Config** from the main window. The Saved Configurations window is displayed: |

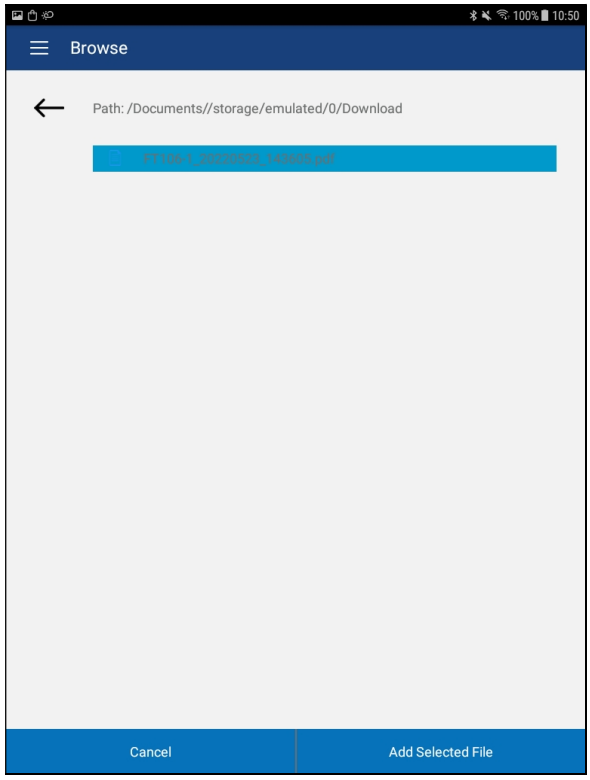
| Step | Action |
|---|---|



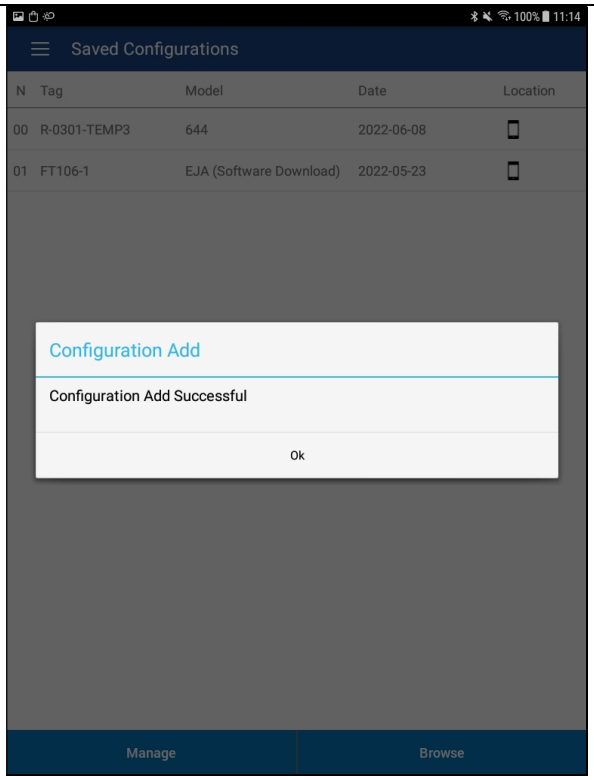

3 Tap “Browse”. The Browse window is displayed:



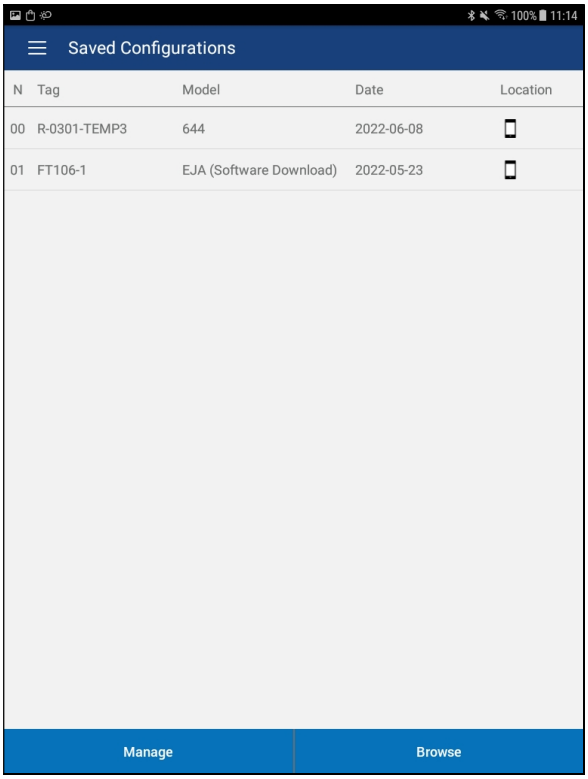

This window will just show the .pdf files. You can navigate to

| Step | Action |
|---|---|
| | other directories using the Back key. |
| 4 | Select the desired configuration to add to the device. Once selected, the "Add Selected" button becomes active:   |
| 5 | Tap "Add Selected", and the following prompt appears when the Configuration Add is complete: |

| Step | Action |
|---|---|

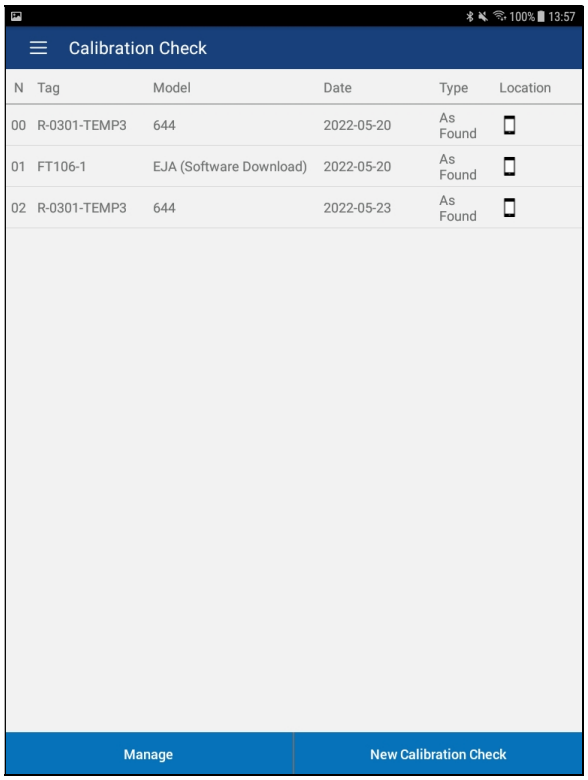



6 The added configuration now appears in the Saved Configuration list and can be viewed, downloaded, etc.



### 6.5.5 Calibration Check (Cal Check)

Calibration Check is feature that with an external calibrator, turns the DevComFF App into a Documenting Calibrator. It is a simple process to see if the FF device measurement results match the input value. The user picks the number of points to check between the LRV (Lower Range Value) and the URV (Upper Range Value). The results are stored for later analysis.

| Step | Action |
|---|---|
| 1 | Select ☰ → **Calibration Check** from the main window. The list of performed Cal Checks is displayed:  |



#### 6.5.5.1 View Saved Cal Checks

To view saved Cal Checks, perform the following steps:

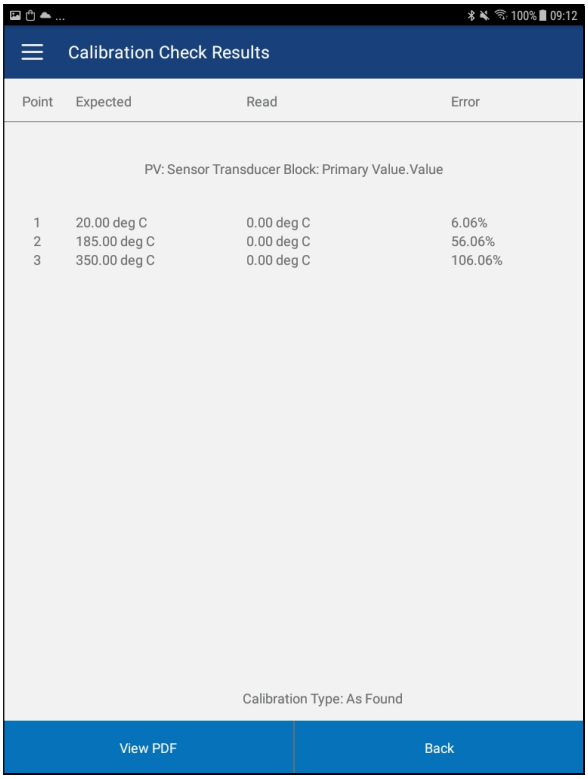
| Step | Action |
|---|---|
| 1 | Tap the Cal Check of interest from the list of Cal Checks |
| 2 | The window below appears: |

| Step | Action |
|---|---|

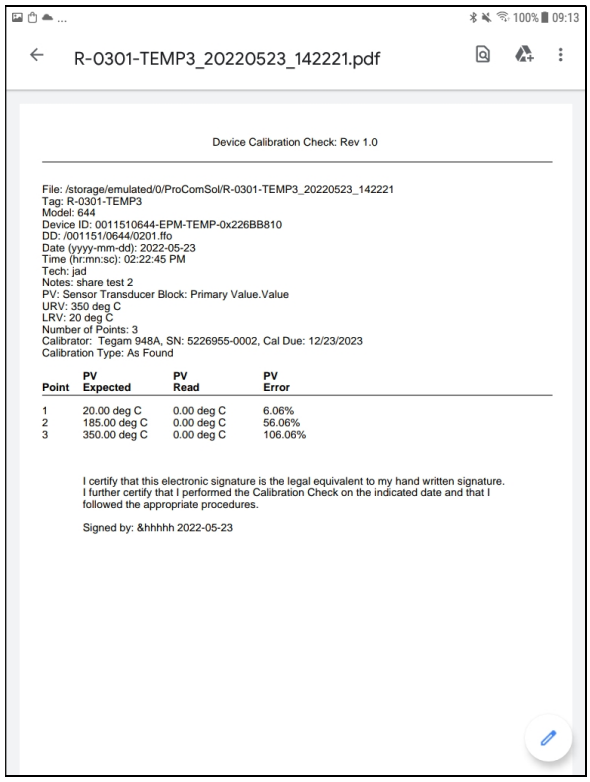

This window shows the details of the saved Cal Check.

3 Tap “View” to get the results of the Cal Check.

4



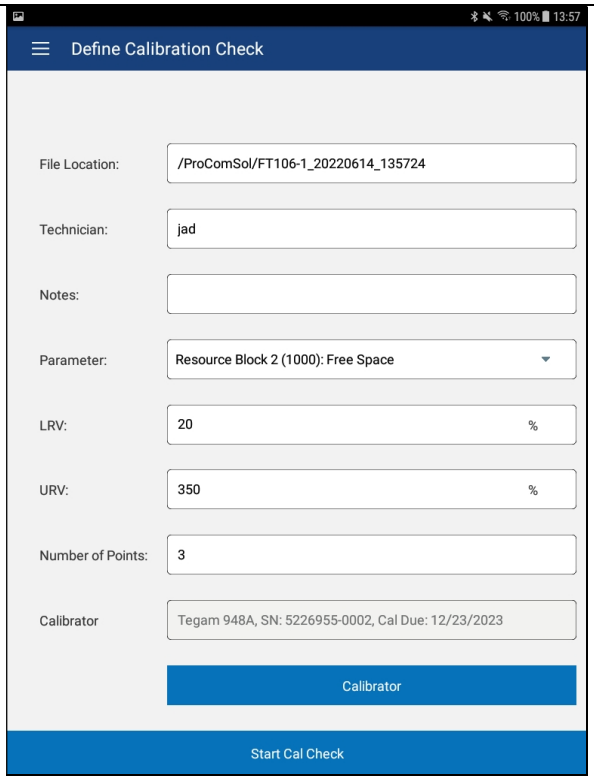
| Step | Action |
|---|---|
| | Cal Check results. |
| 5 | Tap “View PDF” to view the Cal Check results PDF File. |



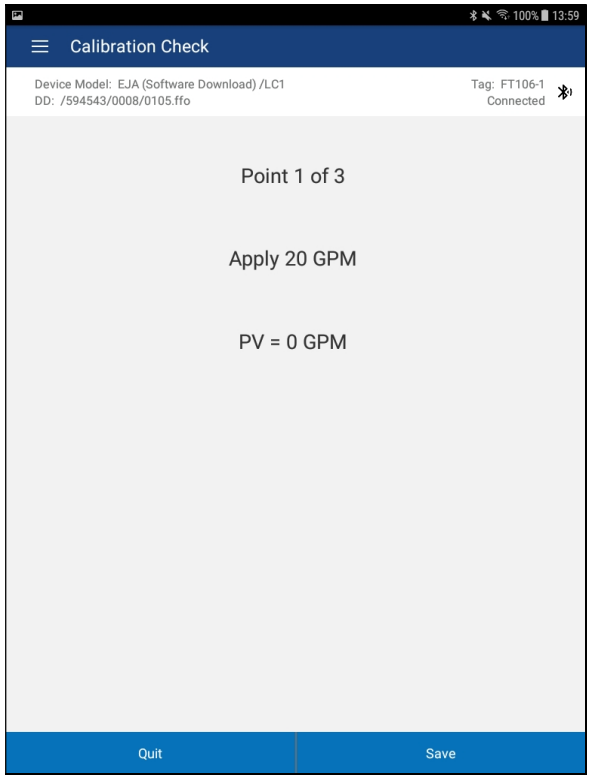

### 6.5.5.2 Create a New Cal Checks

To create a new Cal Checks, perform the following steps:

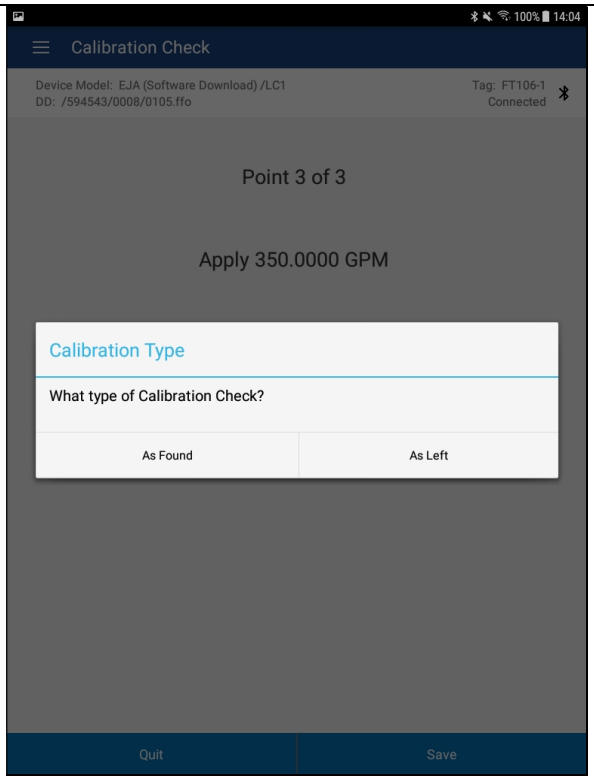
| Step | Action |
|---|---|
| 1 | From the Calibration Check Window, tap “New Calibration Check” |
| 2 | The window below appears. Enter the appropriate data. |

| Step | Action |
|---|---|
| |  |
| 3 | The default directory is /ProComSol. The default file name is Tag_Date_Time. The filename can be changed by the user. Edit the directory and filename as needed. |
| 4 | Enter Notes in the Notes field if desired. Enter Technician name in the Technician field if desired. |
| 5 | Select the parameter to check from the drop down list. The parameter is shown with the Block name, Block address, and parameter name. The list only shows the dynamic parameters from the device DD. |
| 6 | Manually enter the URV and LRV data. The units are read from the DD for the selected parameter and are read only. |
| 7 | Number of Points is the number of calibration check points you wish to examine between (and including) the LRV and URV values. |
| 8 | The Calibrator data shown is the last selected calibrator. To select a different calibrator, edit an existing calibrator, or to create a new calibrator, tap the “Calibrator” button. See section x.x.x for details. |
| 9 | Tap “Start Cal Check” to begin. |
| 10 | The Cal Check now steps through each point telling the user |

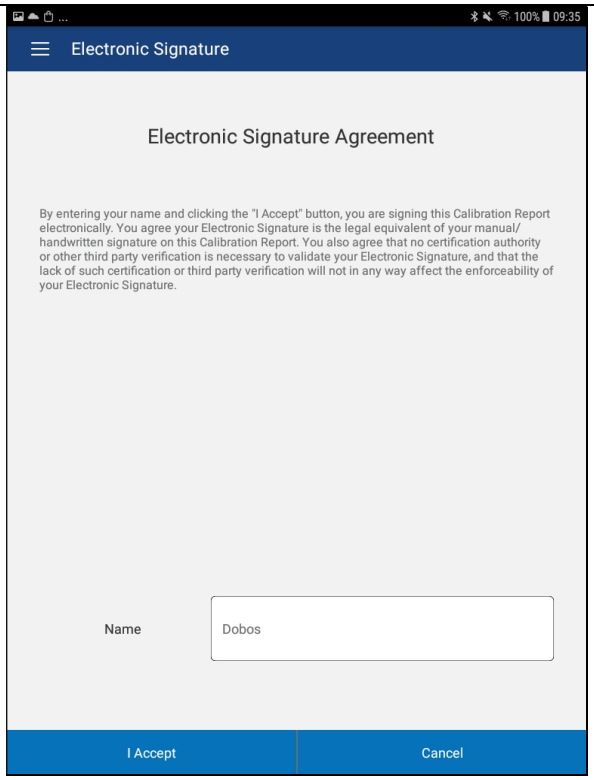
| Step | Action |
|---|---|
| | what value to apply to the FF device using an external calibrator. |



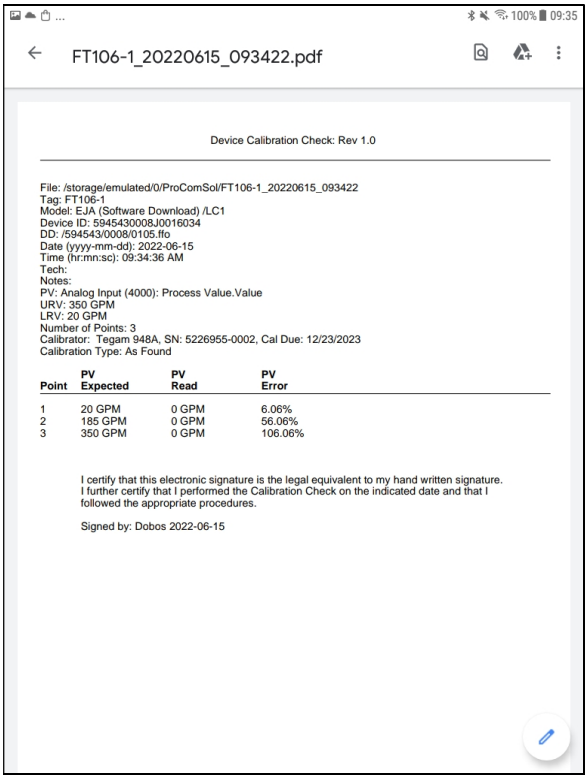

| | |
|---|---|
| 11 | Tap “Save” to move to the next calibration point. Apply the new input value and keep repeating until all points are saved. |
| 12 | After the last point is saved, the user is asked if this is an “As Found” or an “As Left” calibration check. |

| Step | Action |
|---|---|
| |  <br>Tap the appropriate response. |
| 13 | The user is then asked to sign the calibration report electronically. The signing statement is shown and the user enters their electronic signature text in the edit box. |

| Step | Action |
|---|---|

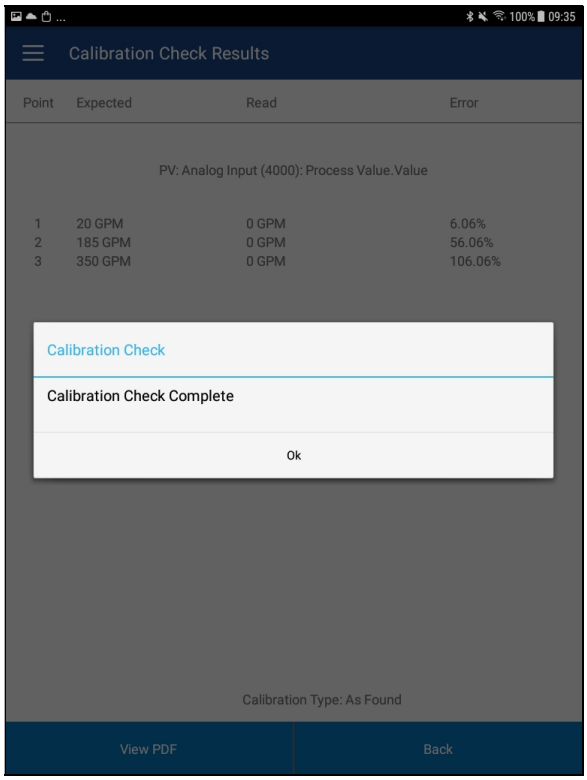



12 A Calibration Check PDF report is then shown.

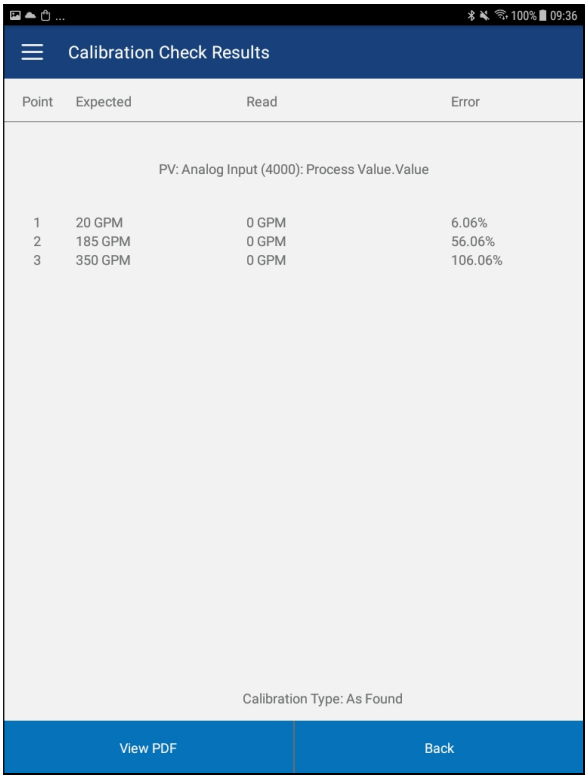



Click the <- icon to dismiss the PDF file.

| Step | Action |
|---|---|
| 13 | The Cal Check finish indication is shown if successful. |




| | |
|---|---|
| 13 | Tap “OK” to see the Cal Check Results. |

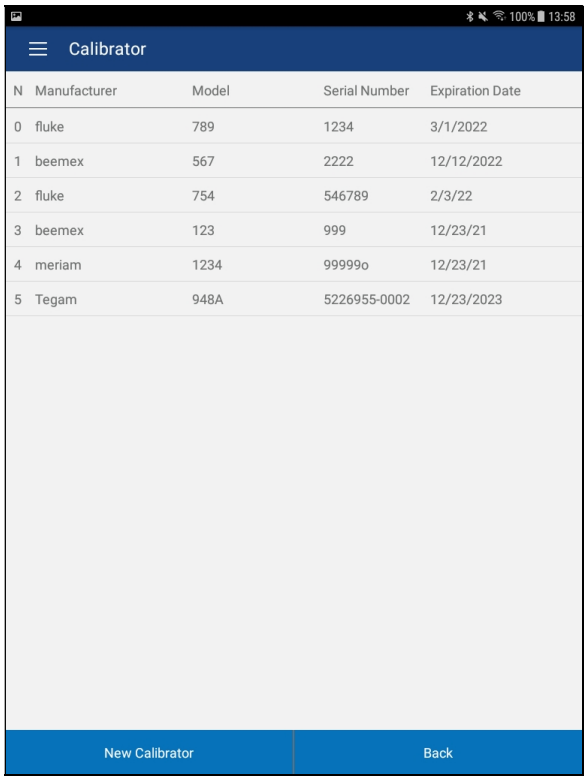


| Step | Action |
|---|---|
| | Note that Error is % of scale. |

### 6.5.5.3 Cal Check Calibrator

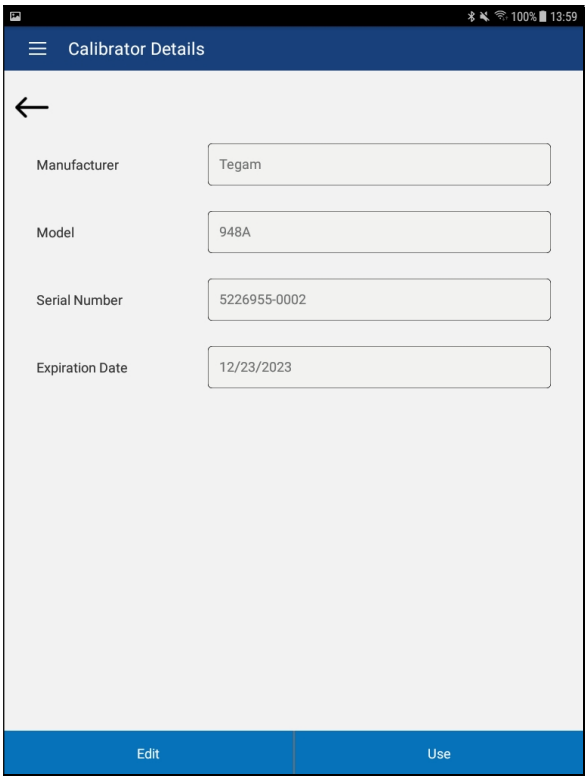
This section describes how to select, edit, or create a Calibrator that is recorded as part of the Cal Check Calibration report.

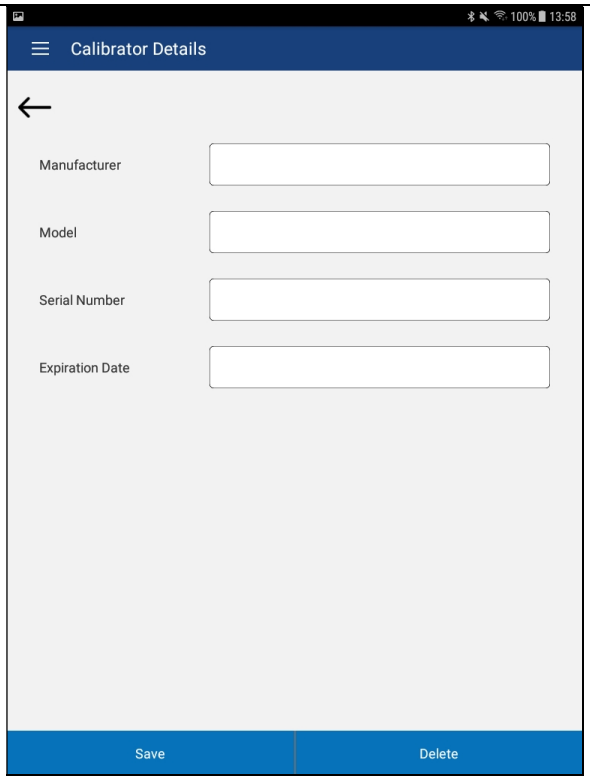
| Step | Action |
|---|---|
| 1 | Tap the “Calibrator” button on the Cal Check Window. |
| 2 | The window below appears: |




This window shows s list of the saved Calibrators.

| | |
|---|---|
| 3 | Tap the desired Calibrator to use or to edit. The Calibrator Detail window appears. |

| Step | Action |
|---|---|
| |  <br>Tap "Edit" to change the information. Or tap "Use" if this is the calibrator you are using to perform the Cal Check. |
| 4 | If "Edit" was tapped, a blank Calibrator screen appears. Enter the appropriate information. |

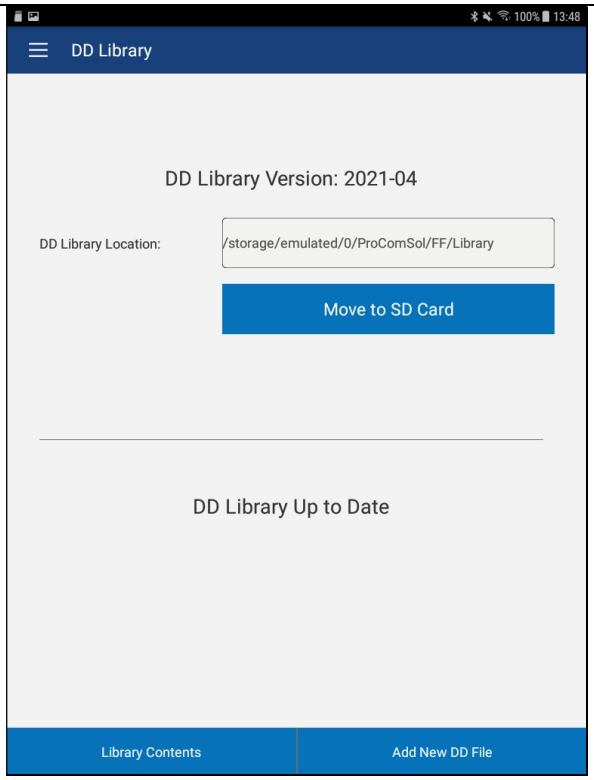
| Step | Action |
|---|---|
| |  |

### 6.5.6 DD Library

This window allows the user to move the DD Library to the SD Card (if available), view the library contents, and even add new DD files to the library.

#### 6.5.6.1 Move DD Library

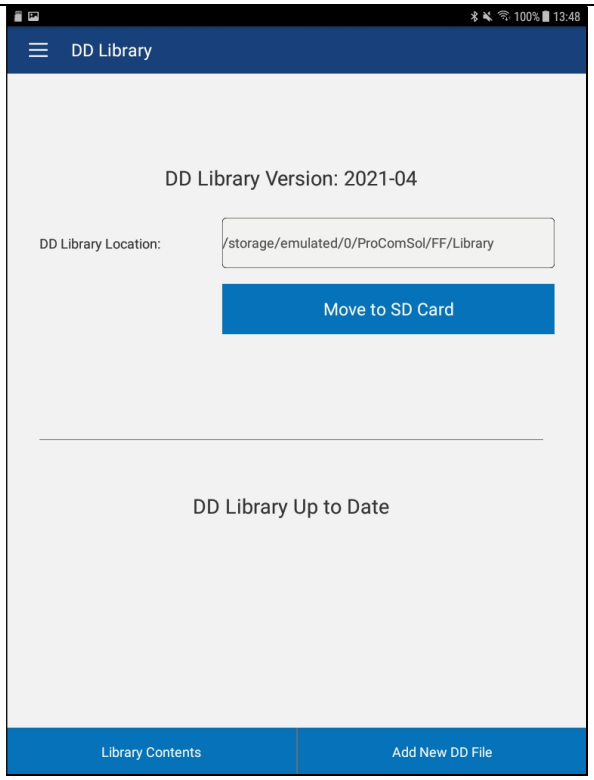
| Step | Action |
|---|---|
| 1 | Ensure that the application is running. Communications do NOT need to have been established. |
| 2 | Select ☰ → **DD Library**. The DD Library Window is displayed: |

| Step | Action |
|---|---|
| |  |
| 3 | Tap “Move to SD Card” to move the library from the main memory to the SD Card. This button will be shown if an SD Card is available. |

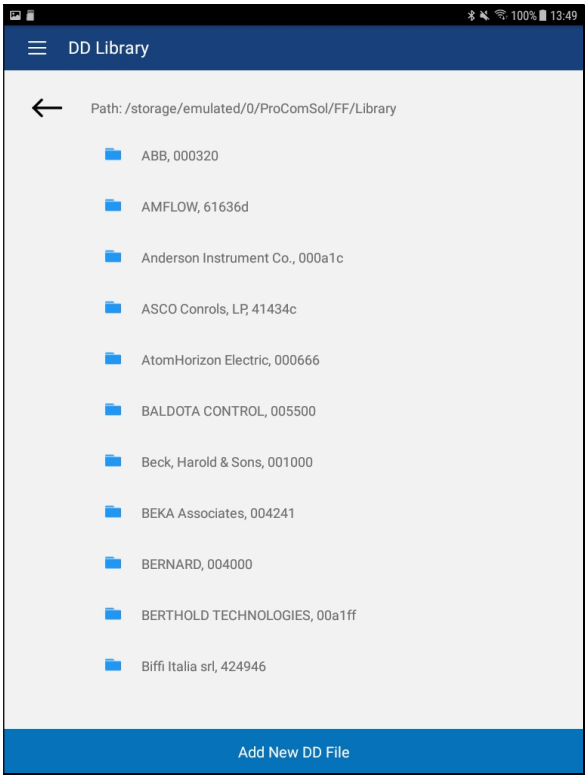
### 6.5.6.2 View DD Library

| Step | Action |
|---|---|
| 1 | Ensure that the application is running. Communications do NOT need to have been established. |
| 2 | Select ☰ → **DD Library**. The DD Library Window is displayed: |

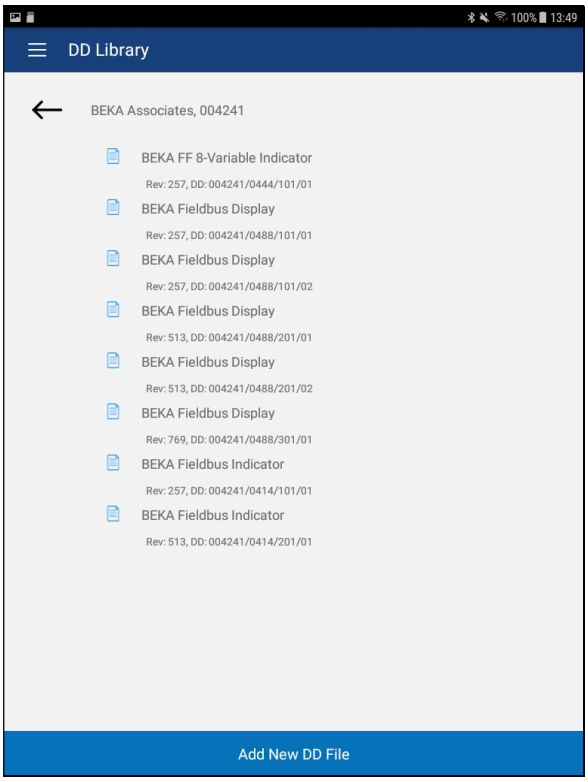
| Step | Action |
|---|---|




3 Tap “Library Contents” The following Window is displayed:



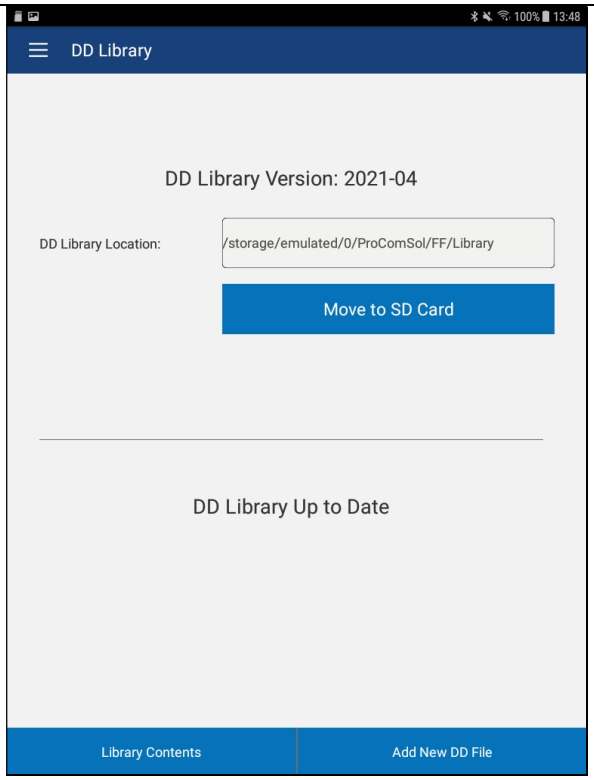

The list of manufacturers is shown in alphabetic order.

| Step | Action |
|---|---|
| 4 | Select a manufacture and the list of devices for that manufacturer are displayed:  |

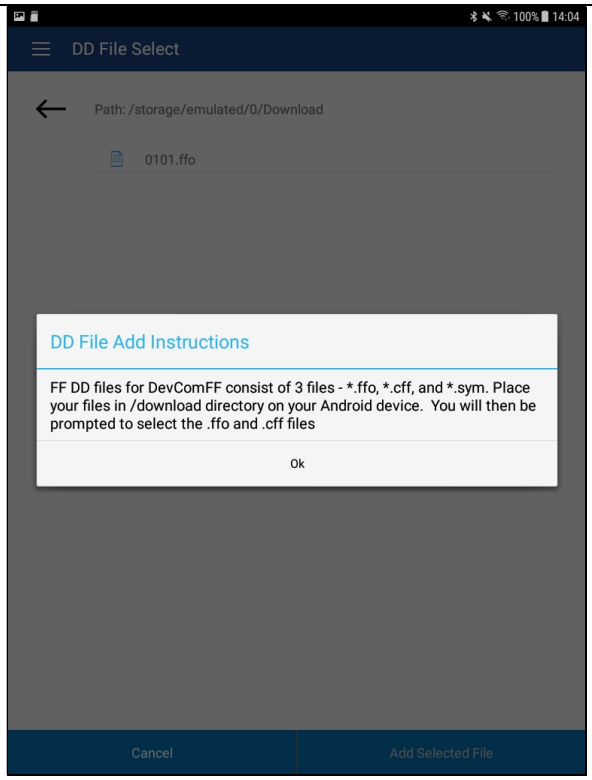


### 6.5.5.3 Add File to DD Library

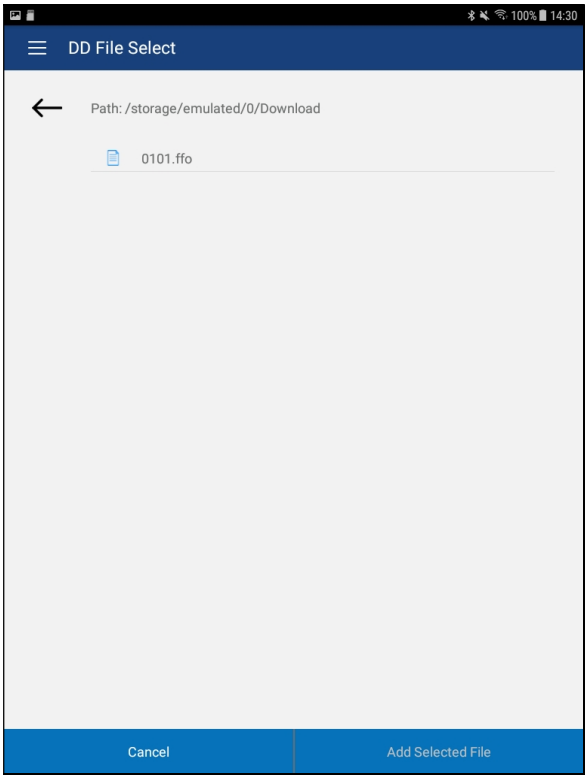
| Step | Action |
|---|---|
| 1 | Ensure that the application is running. Communications do NOT need to have been established. |
| 2 | Select ☰ → **DD Library**. The DD Library Window is displayed: |

| Step | Action |
|---|---|
| |  |
| 3 | Tap “Add New DD File” The following instruction message is shown:<br><br>“FF DD files for DevComFF consist of 3 files - *.ffo, *.cff, and *.sym. Place your files in /download directory on your Android device. You will then be prompted to select the .ffo and .cff files” |

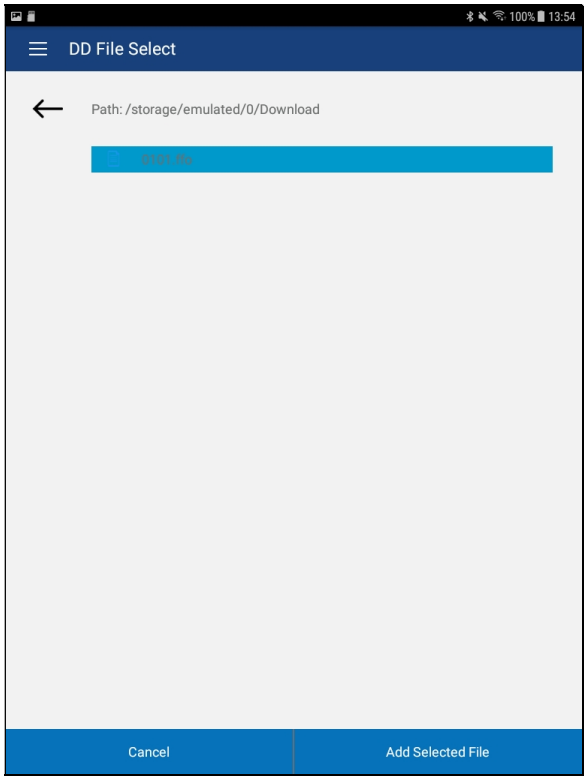
| Step | Action |
|---|---|




3 Tap “Ok” to continue. The following file selection Window displays the .ffo files found in this library.



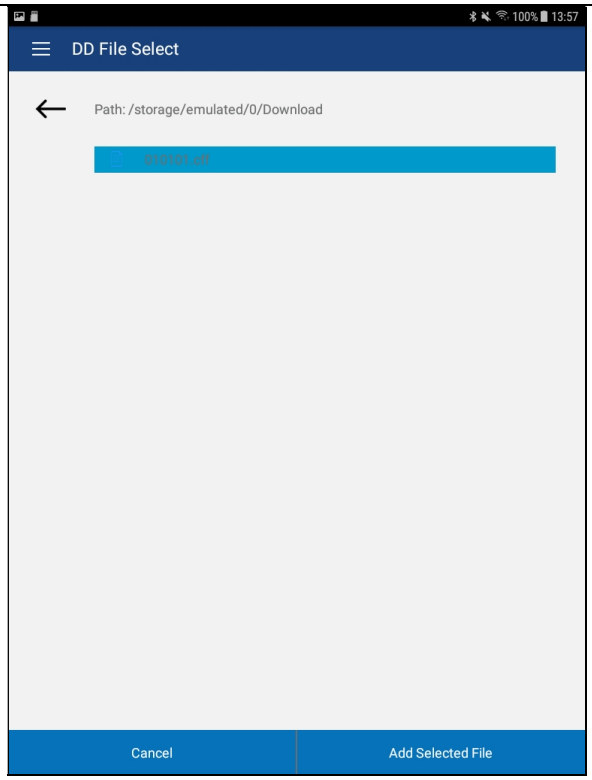
| Step | Action |
|---|---|
| | Use the <- key to navigate the Android device file structure until you find the file you would like to add. |
| 4 | Once the desired file is found, select it to activate the “Add Selected” Button. |



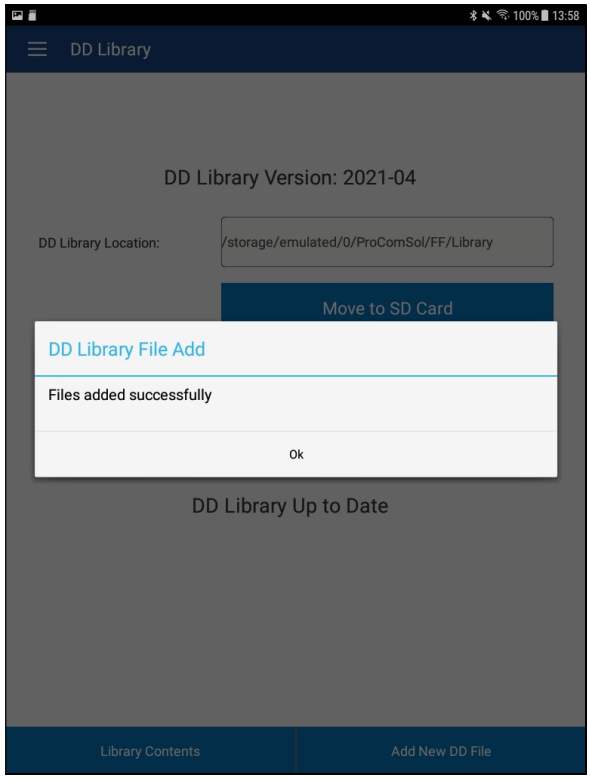

Tap “Add Selected” to add the file to the DD Library.

| | |
|---|---|
| 5 | Repeat the same process for the .cff file: |

| Step | Action |
|---|---|

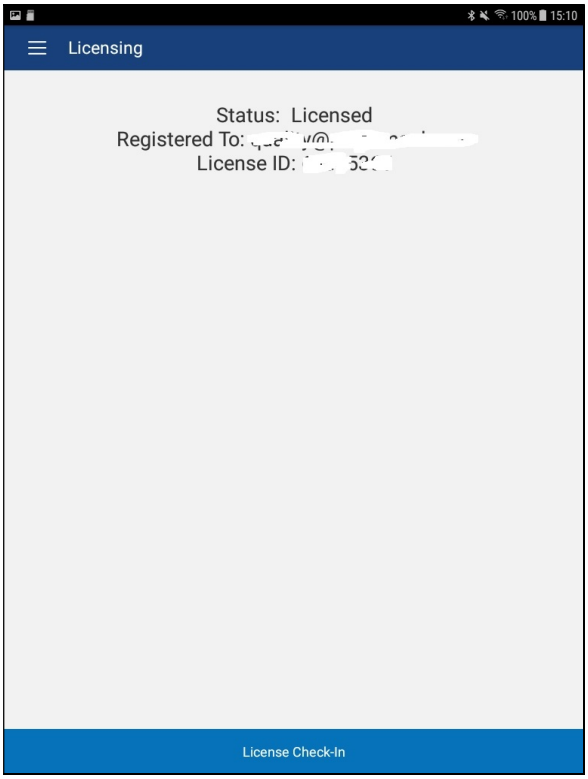



6 You will see the message below if successful.



### 6.5.7 Licensing

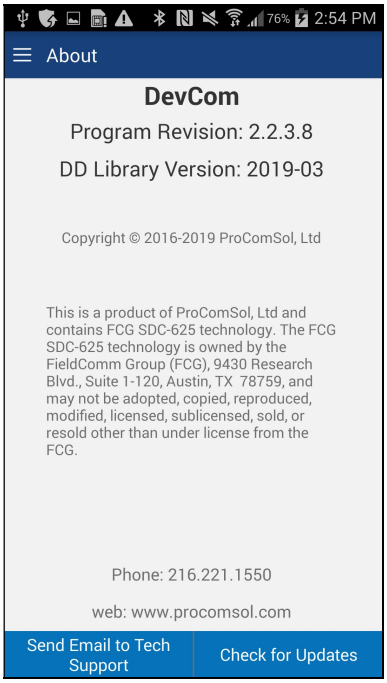
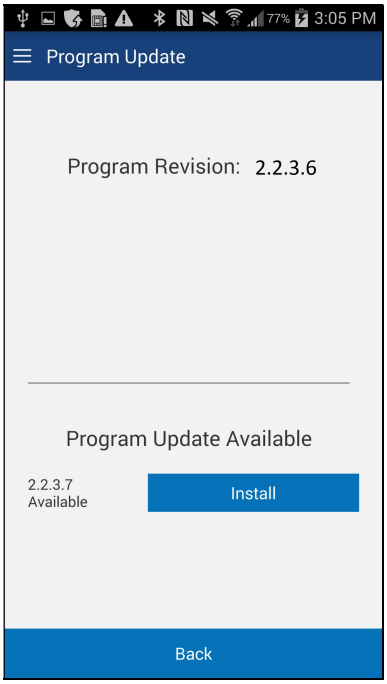
The user may need to review license status to get the number of days left in the evaluation for example. This window shows License details.

| Step | Action |
|---|---|
| 1 | Ensure that the application is running. Communications do NOT need to have been established. |
| 2 | Select ☰ → **Licensing**. The Licensing Window is displayed:   This image shows an Activated license. |
| 3 | Tap the "License Check-In" to send the license back to our server. It can then be used on another Android device. This makes sharing licenses easy and convenient. |

### 6.5.8 About

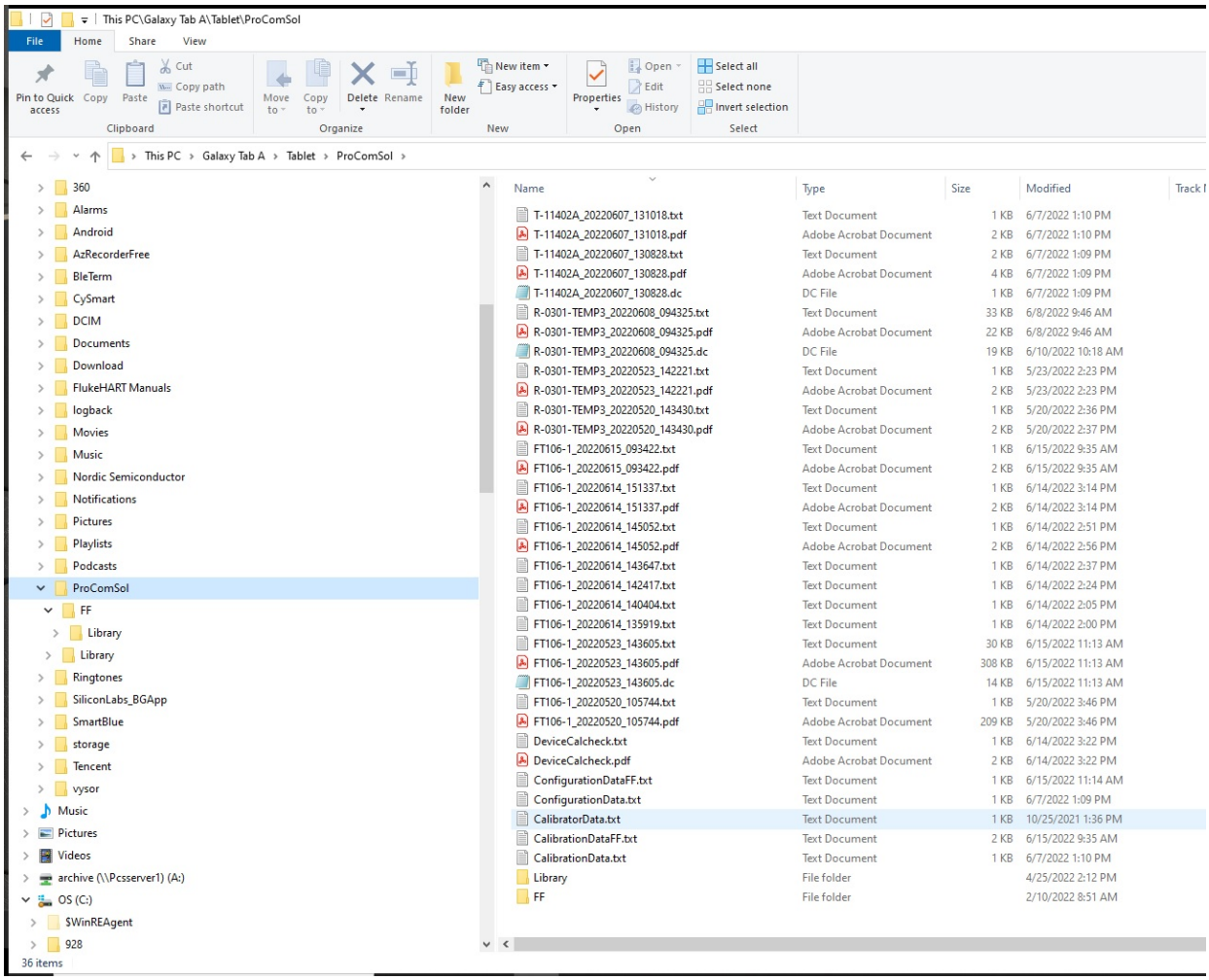
This window summarizes revision status and provides support contact information for the DevComFF App:

| Step | Action |
|---|---|
| 1 | Ensure that the application is running. Communications do NOT need to have been established. |
| 2 | Select ☰ → **About** from the main window. The About window |

| Step | Action |
|---|---|
| | is displayed:<br>  <br> |
| 3 | Tap “Send email to Tech Support” to bring up your Email App which you can then send to ProComSol to get help for your issue. |
| 4 | Tap “Check for Updates” to see if an App update is available.<br>  <br> |
| 5 | Tap “Install” to copy the .apk file to your device. |

## 6.6 PC Interface to Mobile Device

The Windows Explorer program is a convenient way to copy configuration files back to the PC for archiving and storage. The Android device looks like a disk to the Windows file system. Below is an example screen shot:

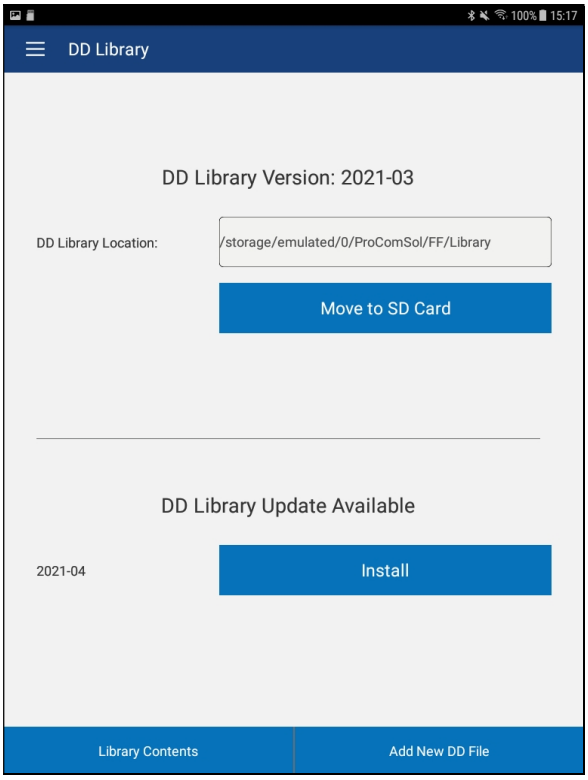



The default location for the saved configuration files is the directory "\ProComSol". Simply highlight the desired files and copy to your PC. Once on the PC, they can be viewed or imported to many different software packages.

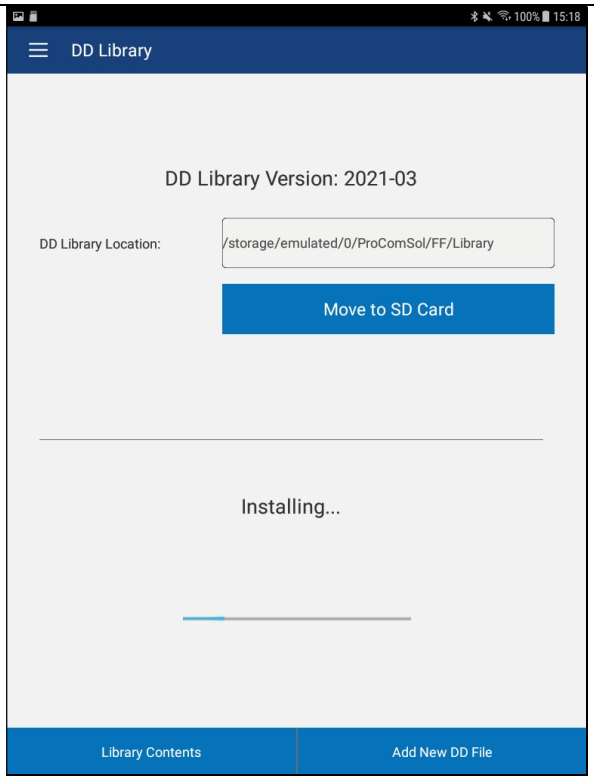
## 6.7 DD Library Updates

The DD Library is update approximately four times per year. There are new devices added and current DDs updated. Note that a DD Library update will NOT affect DDs that you added yourself. Users who provide their Email address to ProComSol will be notified when DD Library Updates are available. The Email will provide detailed instructions on how to obtain the update.

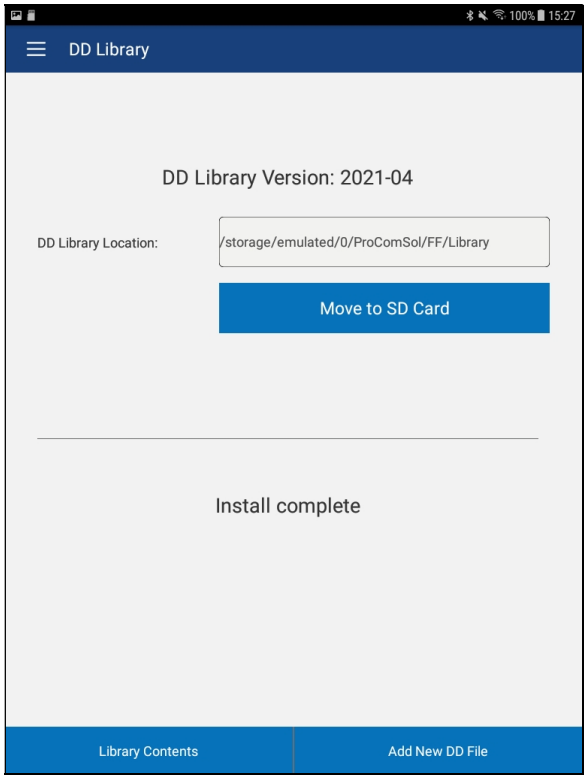
The DevComFF App also notifies the user of an update with a "Push Notification" from our server. Also, simply go to the DD Library window to see if an update is available as shown below:

| Step | Action |
|---|---|
| 1 | Ensure that the application is running. Communications do NOT need to have been established. |
| 2 | Select ☰ → **DD Library**. The DD Library Window is displayed:<br>  <br><br>The App contacts the ProComSol server to see if a newer version is available and shows an "Install" button if yes. Tap the "Install" button to begin download and installation of the DD Library Update. |
| 3 | A progress bar shows the status of the update. Speed depends on the quality of your internet connection. Do not close this screen during an update! |

| Step | Action |
|---|---|



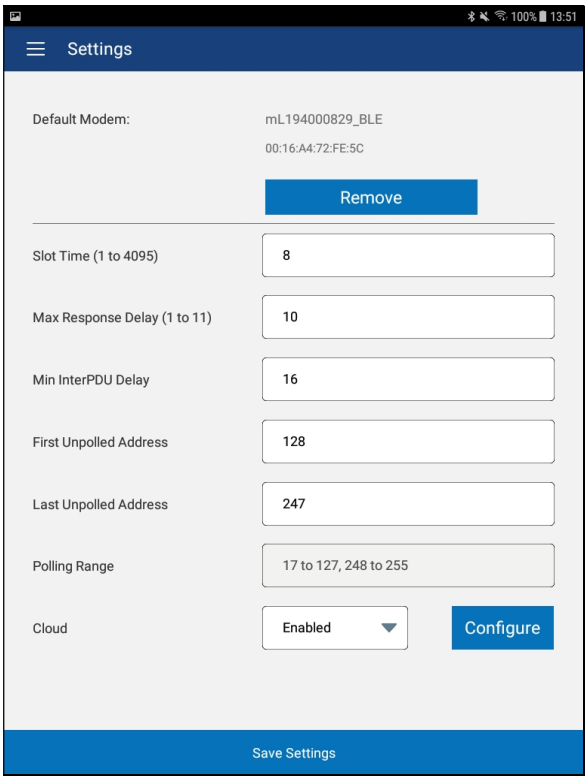

4 The user is notified when the download and install is complete.

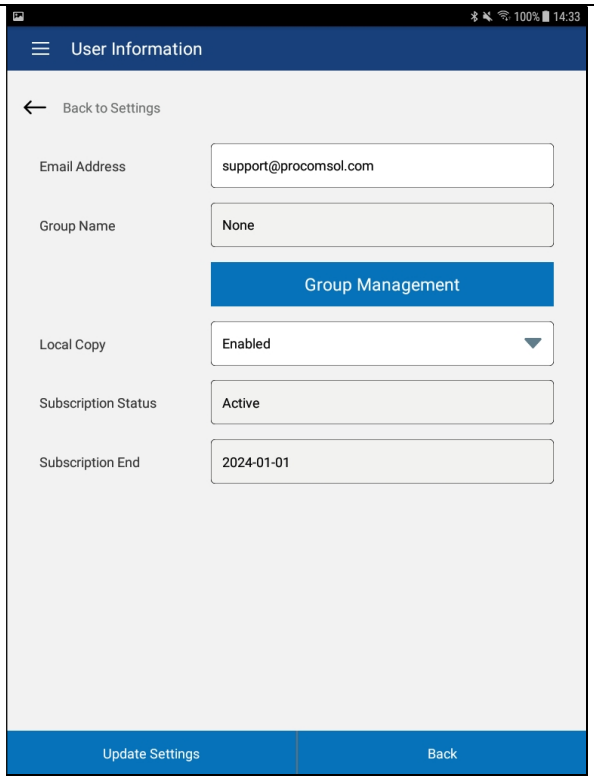


## 6.8 Cloud

### 6.8.1 User Setup

DevComFF allows you to make use of a Cloud account on the ProComSol server. You can store your device configuration and Cal Check data in a safe, secure, off-site server. This protects your data and allows you to share your device configurations and Cal Checks with your team members. Team members must join a Group in order to share data with other Group members. To get started you need to purchase a Cloud Subscription. Then you enable the Cloud features and Create or Join existing Groups as needed. To get started, go to the Settings window.

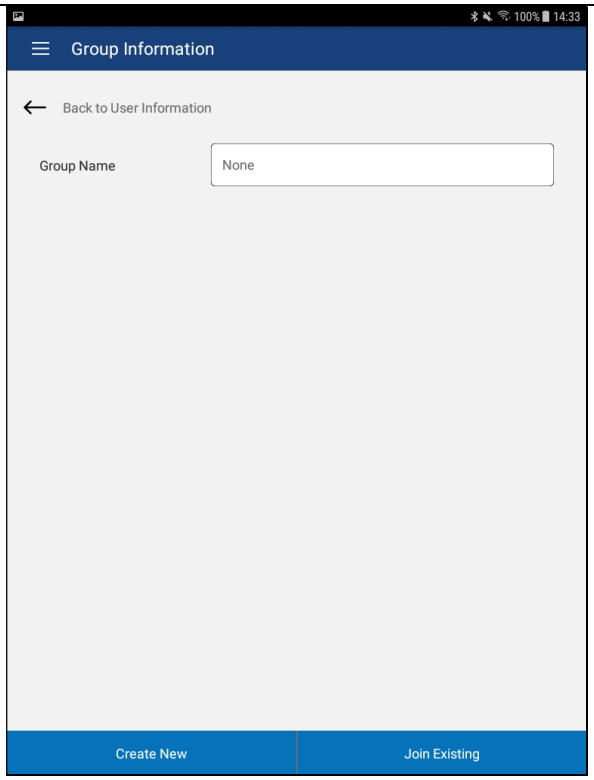
| Step | Action |
|---|---|
| 1 | Go to the Settings Window and change Cloud from Disabled to Enabled:   This will enable the “Configure” button. |
| 2 | Tap “Configure” to bring up the User Information Window. |

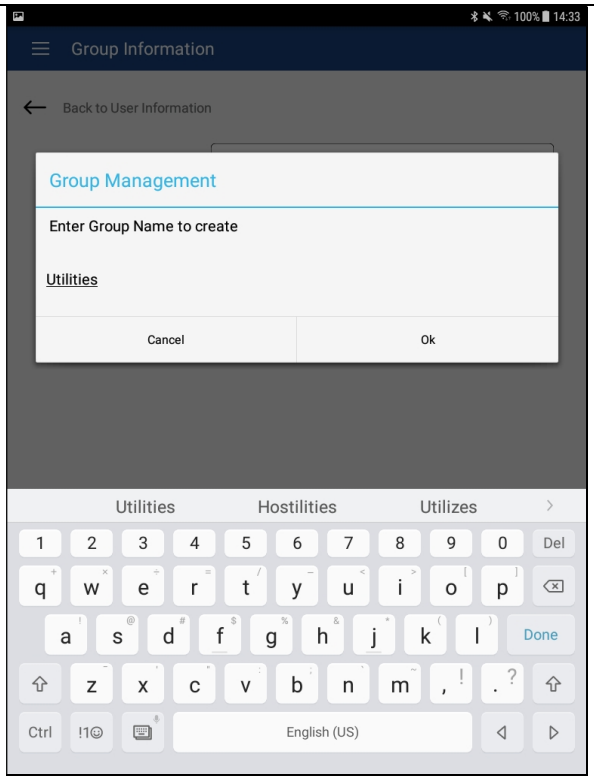
| Step | Action |
|---|---|
| |  |
| 3 | Enter your email address. Decide whether you want a local copy of your device configuration and Cal Check data stored on this device or that you just want the data to go to the Cloud only. Set "Local Copy" appropriately.<br>This window also shows the status of your Cloud Subscription. |

### 6.8.2 Group Create

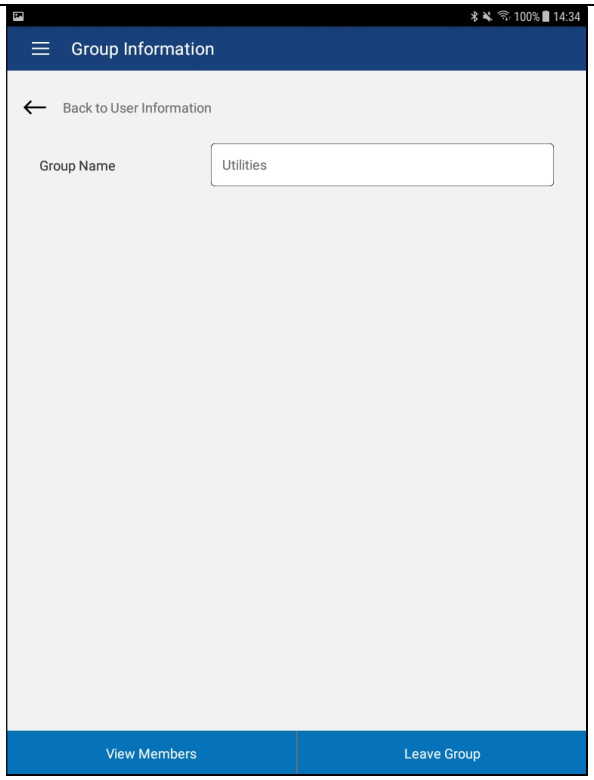
Once you enable your Cloud account you can create a new Group for sharing your data or you can join an existing Group. If you Create a Group, you are the Admin for that Group. This allows you to invite team members, approve team members that request to join, and to manage Group membership going forward. To setup or manage Groups, tap the "Group Management" button. The Group Information window then appears.

| Step | Action |
|---|---|
| 1 | Tap "Group Management" to bring up the Group Information window. |

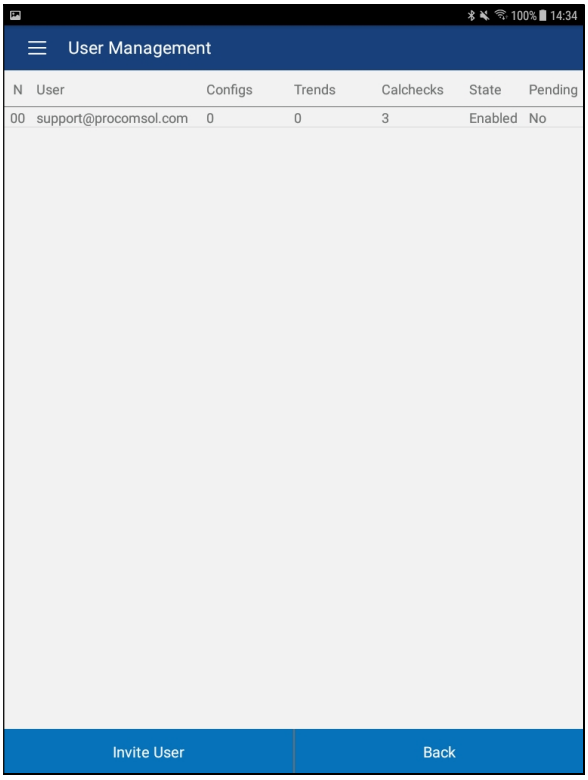
| Step | Action |
|---|---|
| |  <br>From here you can Create a new Group as an Administrator, or Join an existing Group. |
| 2 | Tap “Create New” to create a new Group. |

| Step | Action |
|---|---|
| |  <br>Type a new Group Name in the box and tap “Ok” to create. |
| 3 | After the Group Creation Success message, the window now looks like below. From here you can View the other group members or Leave the Group. |

| Step | Action |
|---|---|




4 Tap “View Members” to see the members in this Group.



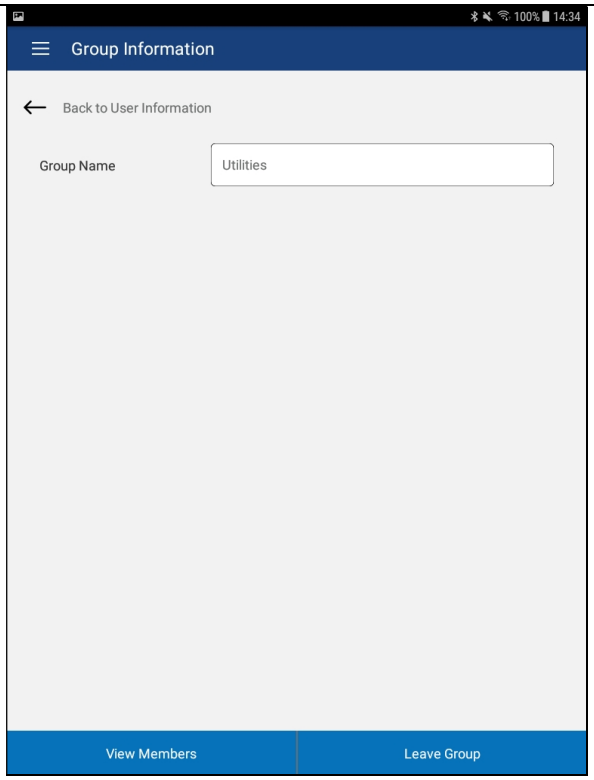

Columns Explained for this Admin User:

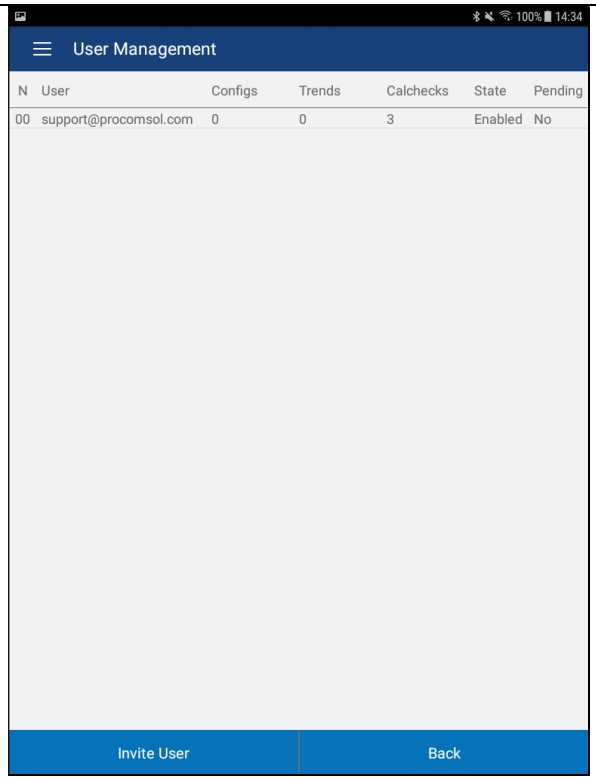
| Step | Action |
|---|---|
| | N - Simple index of members<br>User - The email address of the user<br>Configs (Configurations) - Number of Configurations this user has on the cloud.<br>Trends - Number of Trends this user has on the cloud. Trends is an upcoming feature.<br>Calchecks (Cal Checks) - Number of Cal Checks this user has on the cloud.<br>State - The State of this user. Enabled or Disabled.<br>Pending - The Group Join state of this user, known as Pending. If Yes, the user has requested to join this group and the Group Administrator needs to Accept or not.<br><br>Note that the above screen is for the Admin of this Group. If not the admin, the logged-in user can only see N, User, Configs, Trends, and Calcheck data. |

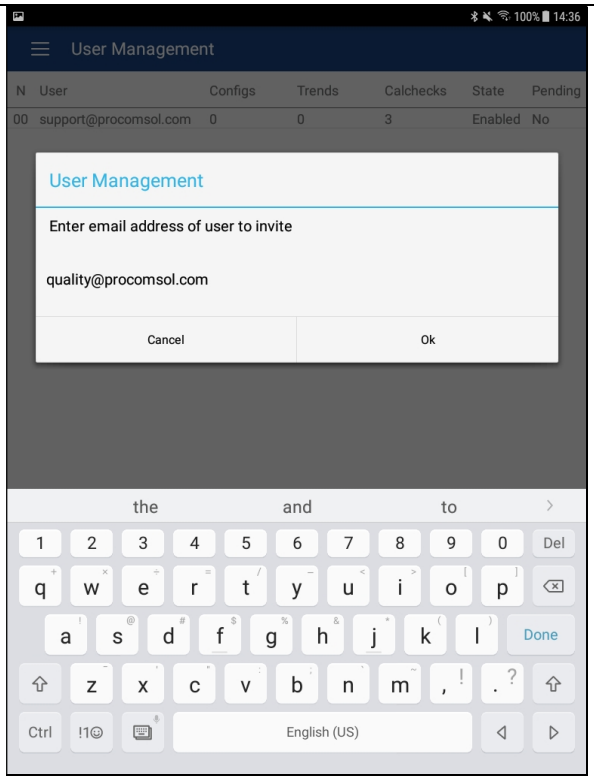
### 6.8.3 Group Join, Administrator Invite

The Administrator for a group can invite other users to join. Once invited, the user will have to accept the invitation from within DevComFF in order to have Group access. This section describes this process. Note that this user is an Administrator for his Group.

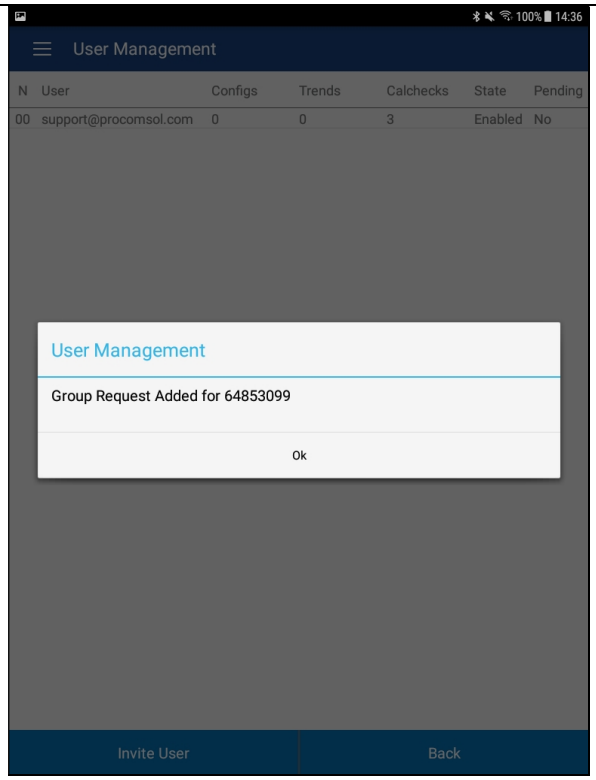
| Step | Action |
|---|---|
| 1 | The Administrator user taps the “Group Management” button to get to the Group Information window. |

| Step | Action |
|---|---|
| |  |
| 2 | Tap “View Members” to see the members in this Group. The User Management window appears. |

| Step | Action |
|---|---|
| |  <br>Tap “Invite User” to invite a user to join the group. |
| 3 | Enter the email address of the user you wish to invite. Note that the user does not yet need to be created. . |

| Step | Action |
|---|---|
| |  <br>Tap “Ok” when done. |
| 4 | An email is sent to the user to prompt him to create an account and join this Group. |

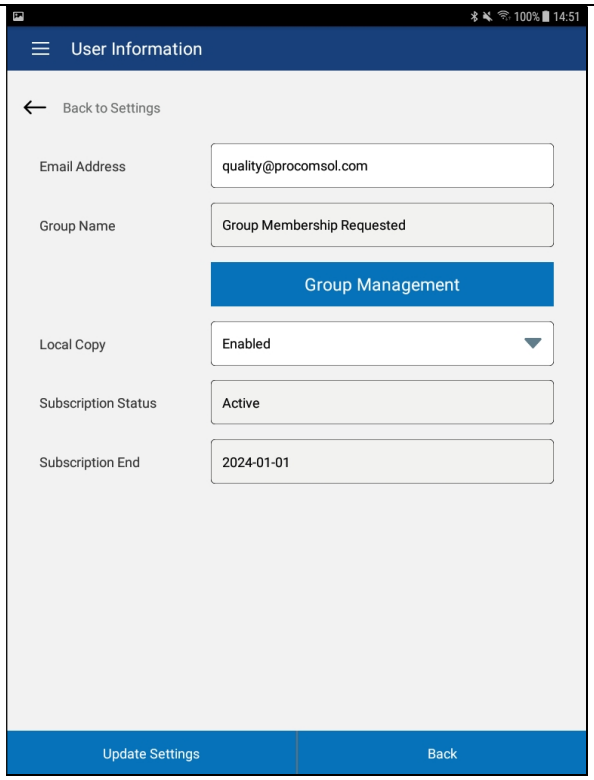
| Step | Action |
|---|---|



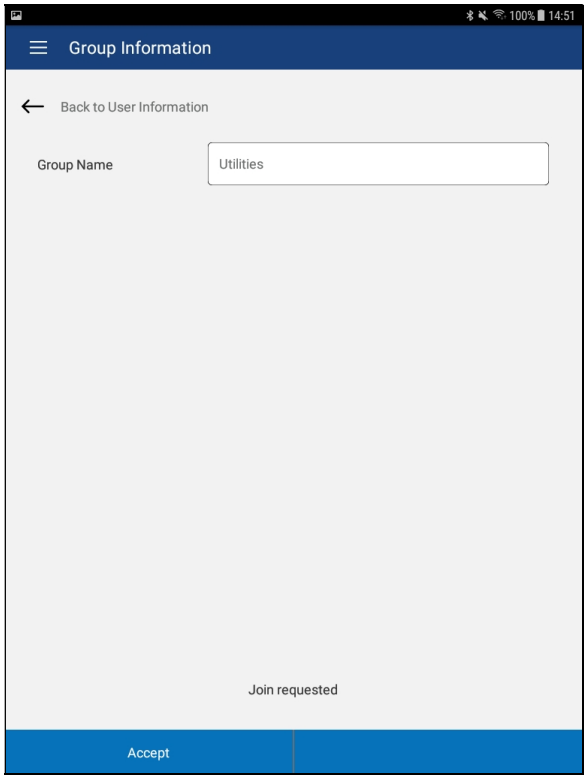

The invited user must now accept the invite in order to join the Group.

| | |
|---|---|
| 5 | The invited user goes to the Settings window and taps “Configure”. They will now see a membership request message. |

| Step | Action |
|---|---|

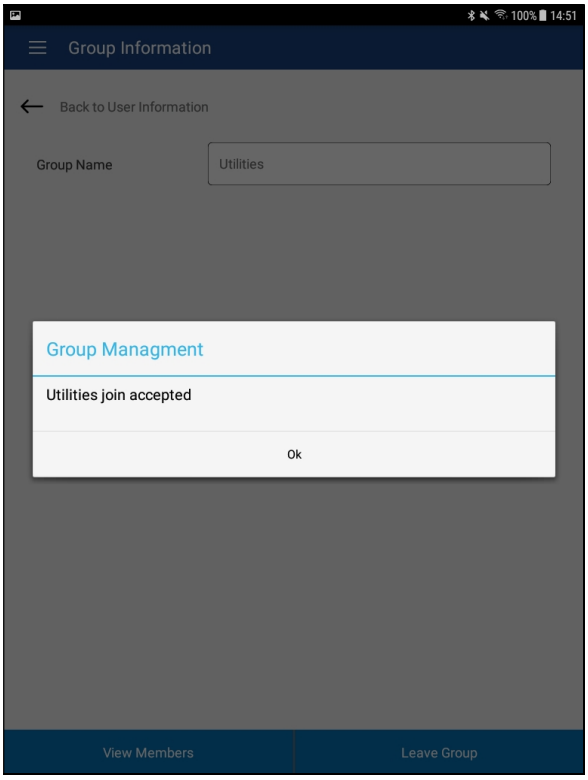



6 The user taps “Group Management” to get details on this invite.

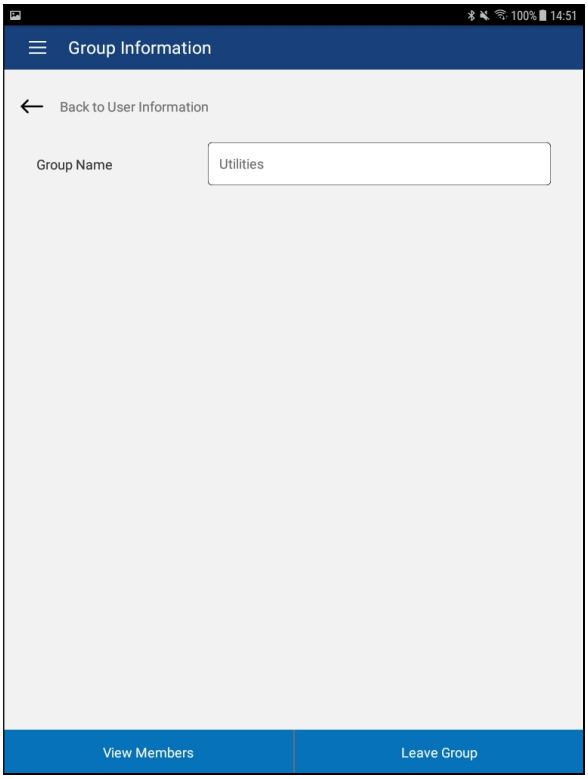



7 Tap “Accept” to join the group. If successful, the window below

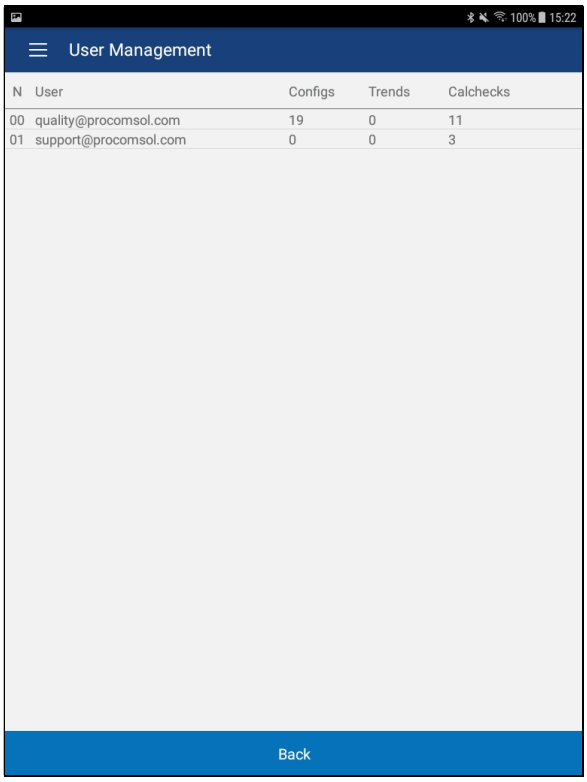
| Step | Action |
|---|---|
| | is shown: |




| | |
|---|---|
| 8 | Now the user can View the other members in this group. |



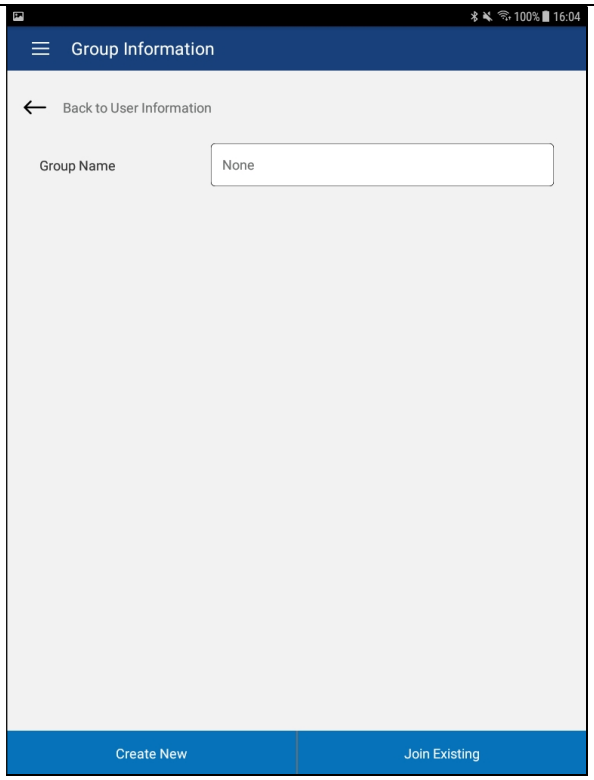
| Step | Action |
|---|---|
| 9 | Tap “View Members” now shows a slightly different window since this user is NOT an admin. |

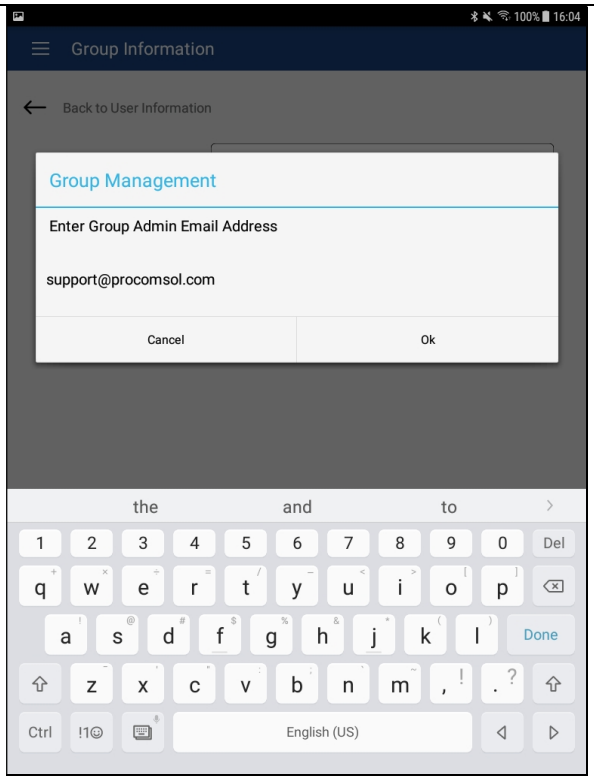



### 6.8.4 Group Join, User Request

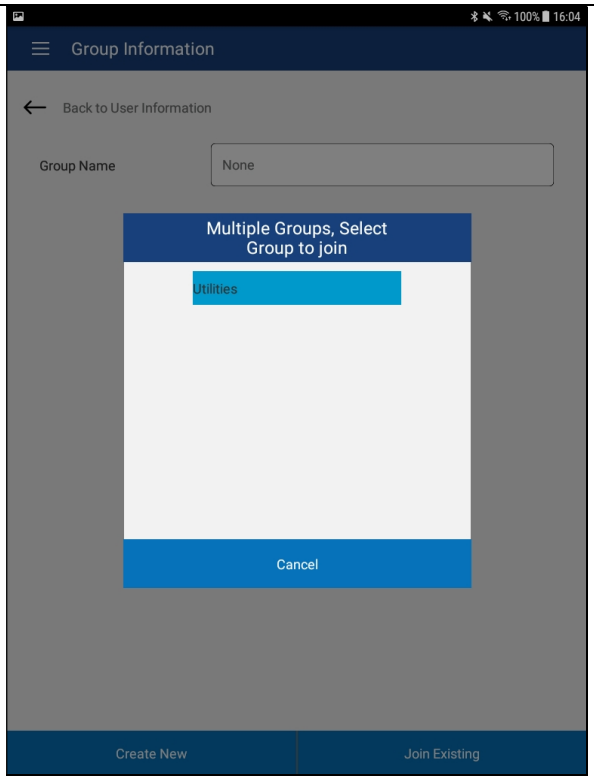
The other way a user can join a Group is by requesting membership. Once requested the Admin must approve the join request. This section describes this process. Note that this logged-in user is NOT an Admin for his Group.

| Step | Action |
|---|---|
| 1 | The non-Admin user taps the “Group Management” button to get to the Group Information window. |

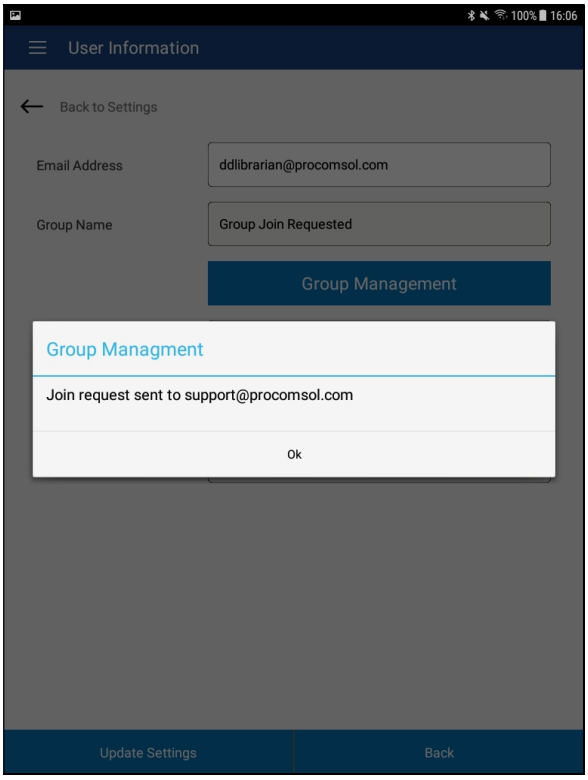
| Step | Action |
|---|---|
| |  <br>Tap “Join Existing” to join an existing Group. |
| 2 | Enter the Email Address of the Group Administrator in the prompt. |

| Step | Action |
|---|---|
| |  <br>Tap “Ok” when done. |
| 3 | A list of the Groups that this email address is associated with will then be displayed. Select the Group you wish to join. |

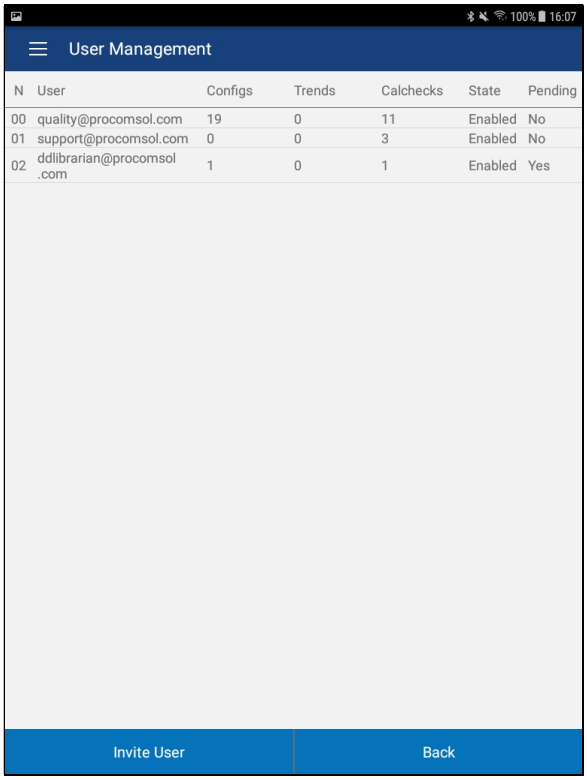
| Step | Action |
|---|---|

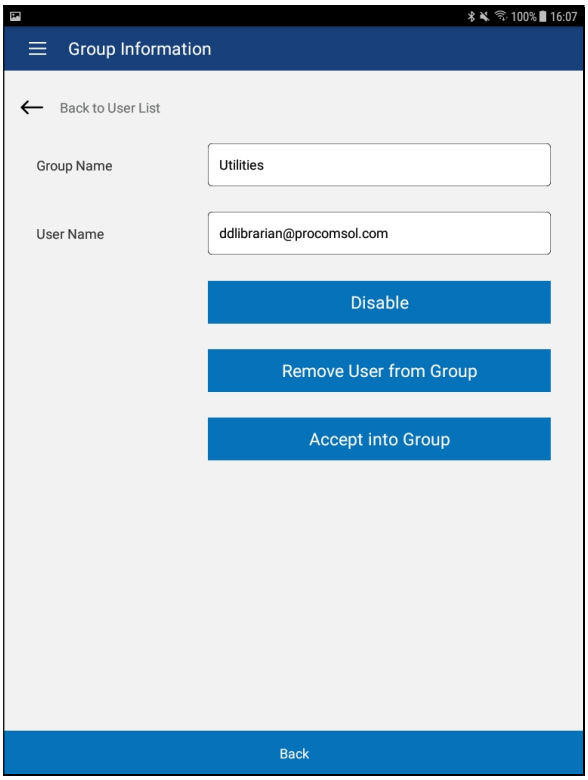



3 If the Group exists, you will see a success message.

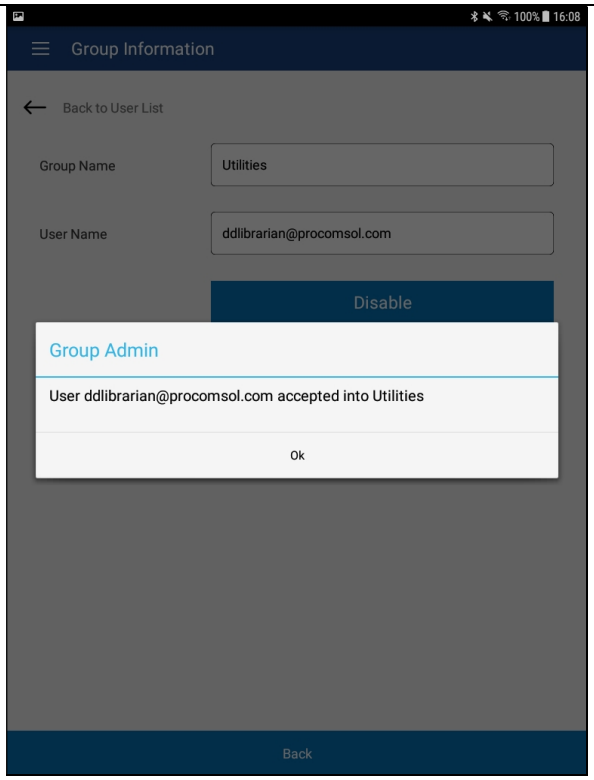



Now this user must wait until the Admin acknowledges the Join

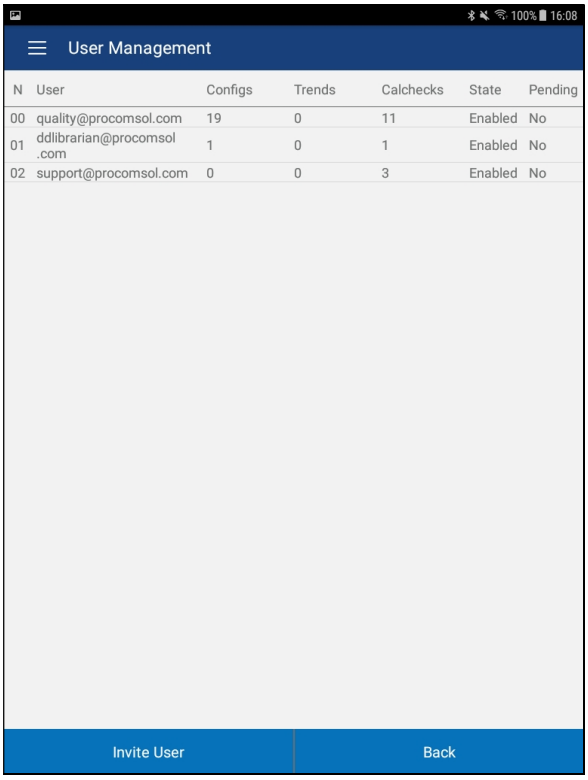
| Step | Action |
|---|---|
| | request. |
| 4 | The Admin user goes to the User Management window by tapping Group Management->View Members. The requesting user is now shown in the list with set to “Yes”.   The Admin taps the new user to bring up the Group Information window. |

| Step | Action |
|---|---|
| 5 |  <br>Disable - The user cannot log-in.<br>Remove User from Group - The user is removed from the Group but can still log-in to see their own data.<br>Accept into Group - User has asked to join this group. The Admin decides if this user should join.<br>In our use case here, Accept the join request from this user. Tap "Accept into Group". |
| 6 | If successful, the prompt below is shown. |

| Step | Action |
|---|---|



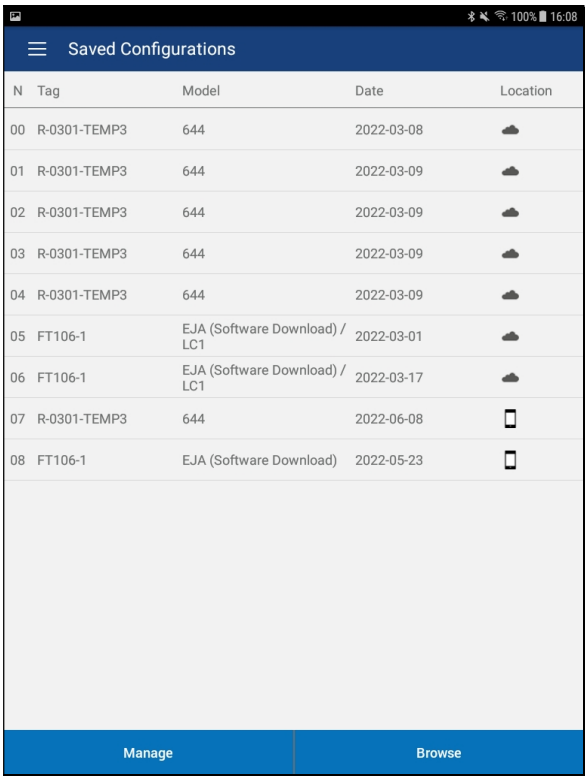

7 The Pending status is now no for the added user:



### 6.8.5 Cloud and Saved Configurations

Once the user joins a Group, he now has access to all the configurations saved by the Group members. These will now show in the Download Config window along with the user's own saved configurations. The Saved Configurations window now has more information and functions. This section describes the new information and functions.

| Step | Action |
|---|---|
| 1 | Tap the "Download Configs" window item on the Hamburger menu to bring up the Saved Configurations window. Below is a sample. |




The icons in the Location column have special meanings:

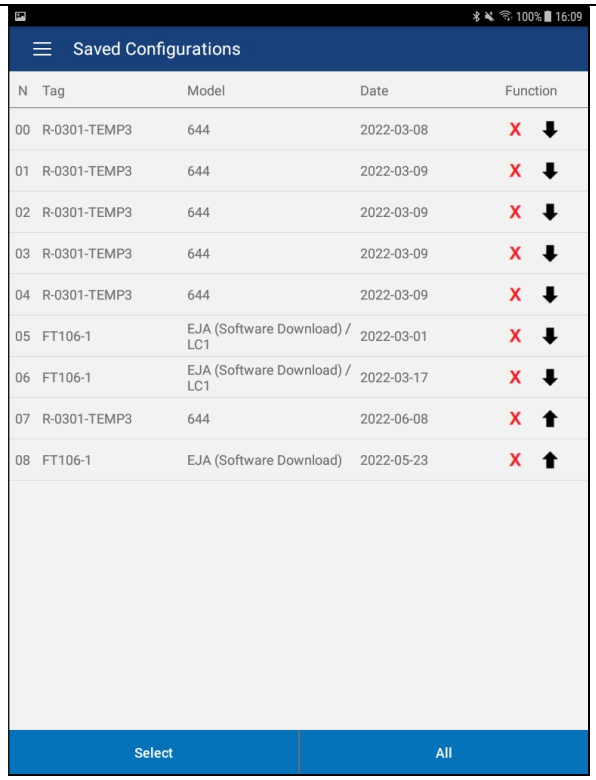
Configuration is stored in the Cloud only

Configuration is stored locally on this device only

Configuration is stored both locally and on the Cloud

| | |
|---|---|
| 2 | Tap the "Manage" button to change the display to Configuration Manager as seen below: |

| Step | Action |
|---|---|




The icons in the Function column have special meanings and are active buttons

X Delete the configuration

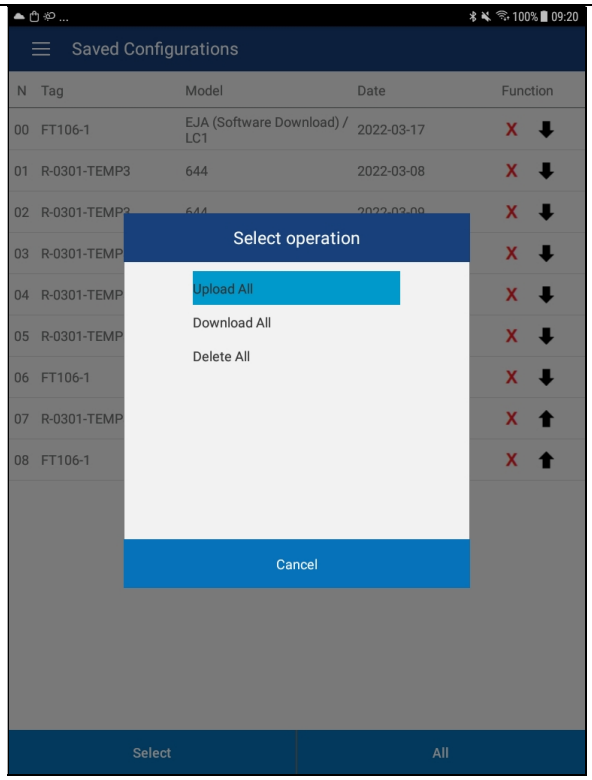
Download the configuration from the Cloud to the local device

Upload the configuration from the local device to the Cloud

If the configuration does not have the Upload or Download icon it means the configuration is already in both locations.

| | |
|---|---|
| 3 | Tap “All” to perform an operation on all configurations that qualify. You will be asked what operation to perform: |

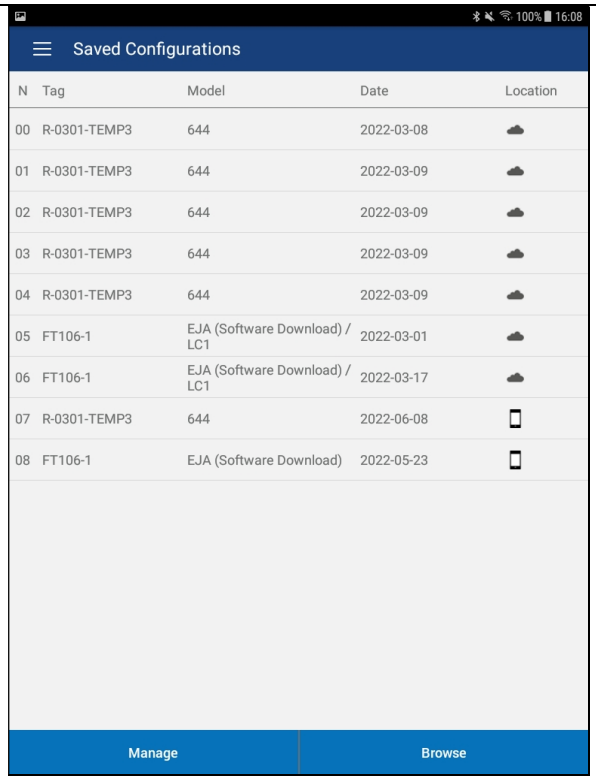
| Step | Action |
|---|---|




Select the operation you wish to perform and all configurations that qualify for that operation will have it performed on them.

| | |
|---|---|
| 4 | To return to the normal Saved Configuration window display, tap the “Select” button. |

| Step | Action |
|---|---|

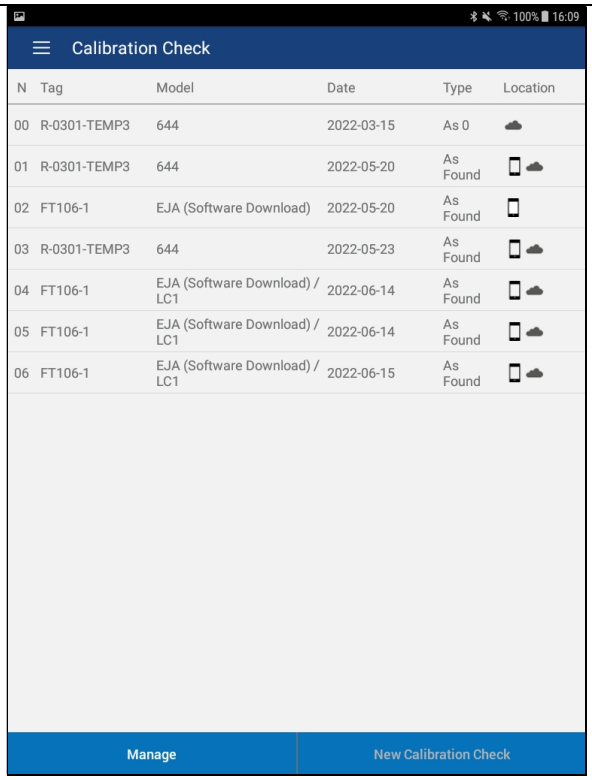



### 6.8.6 Cloud and Cal Checks

Once the user joins a Group, he now has access to all the Cal Checks saved by the Group members. These will now show in the Cal Check window along with the user's own saved Cal Checks. The Cal Checks window now has more information and functions. This section describes the new information and functions.

| Step | Action |
|---|---|
| 1 | Tap the "Cal Checks" window item on the Hamburger menu to bring up the Cal Checks window. Below is a sample. |

| Step | Action |
|---|---|




The icons in the Location column have special meanings:

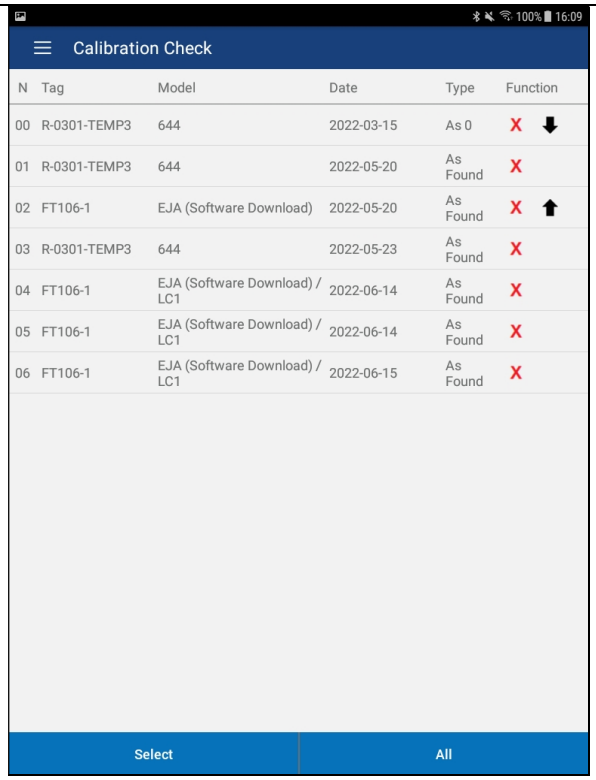
Cal Checks is stored in the Cloud only

Cal Checks stored locally on this device only

Cal Checks is stored both locally and on the Cloud

| | |
|---|---|
| 2 | Tap the “Manage” button to change the display to Cal Checks Manager as seen below: |

| Step | Action |
|---|---|




The icons in the Function column have special meanings and are active buttons

X Delete the Cal Check

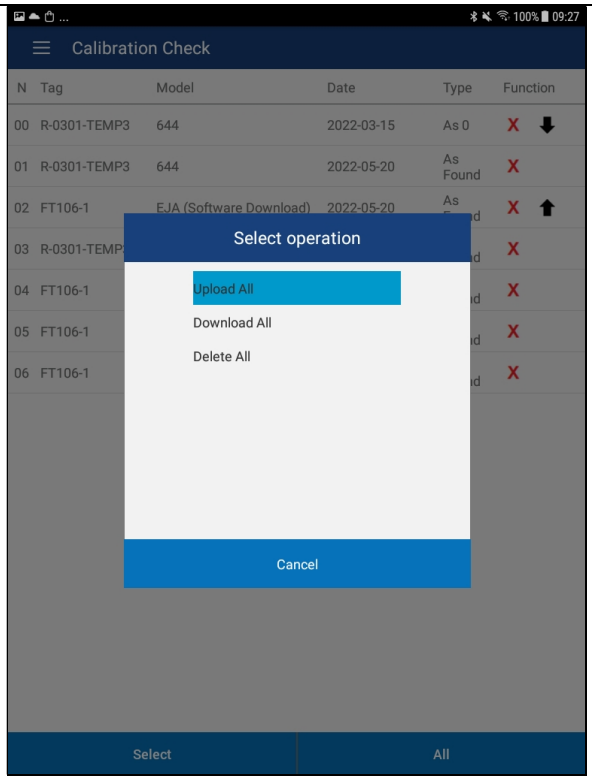
Download the Cal Check from the Cloud to the local device

Upload the Cal Check from the local device to the Cloud

If the Cal Check does not have the Upload or Download icon it means the Cal Check is already in both locations.

| | |
|---|---|
| 3 | Tap “All” to perform an operation on all Cal Check that qualify. You will be asked what operation to perform: |

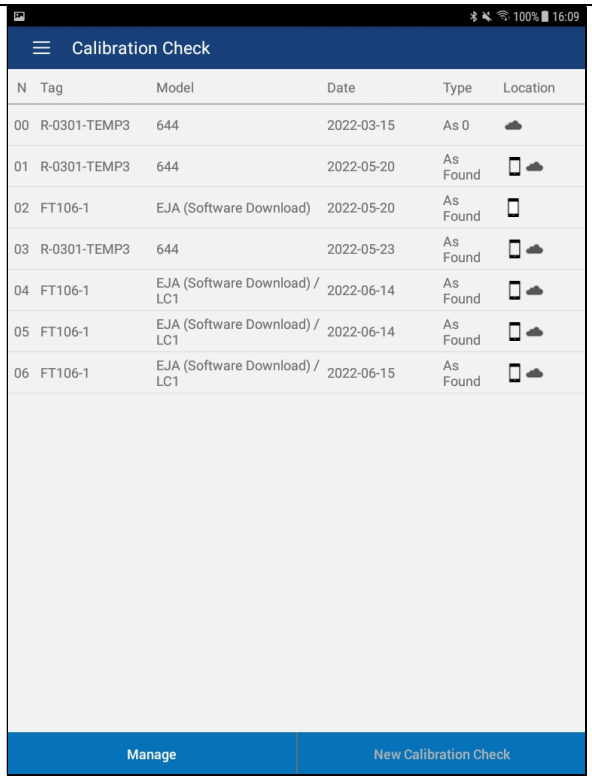
| Step | Action |
|---|---|




Select the operation you wish to perform and all Cal Check that qualify for that operation will have it performed on them.

4 To return to the normal Cal Check window display, tap the "Select" button.

| Step | Action |
|---|---|


100% 16:09
Calibration Check
N Tag Model Date Type Location
00 R-0301-TEMP3 644 2022-03-15 As 0
01 R-0301-TEMP3 644 2022-05-20 As Found
02 FT106-1 EJA (Software Download) 2022-05-20 As Found
03 R-0301-TEMP3 644 2022-05-23 As Found
04 FT106-1 EJA (Software Download) / LC1 2022-06-14 As Found
05 FT106-1 EJA (Software Download) / LC1 2022-06-14 As Found
06 FT106-1 EJA (Software Download) / LC1 2022-06-15 As Found
Manage
New Calibration Check

# Appendix A

## Troubleshooting Guide

Problem:
**Will not communicate**

*Hardware Check:*

Verify the following:
1. Paired to correct mobiLink
2. You are using a power hub that is properly terminated.
3. The Bluetooth button on the mobiLink was pressed and the Bluetooth LED is on. This must be done before starting DevComFF.Droid.
4. You are connected using the FF terminals on the mobiLink, not the HART terminals.
5. mobiLink batteries are fresh.

# Appendix B

## Contact Information

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