m'X | TELEMATICS
MOBILE INFORMATION EXCHANGE

Version 1: Nov 2020

MiX Rovi IV

Installation and Commissioning Guide

MiX Rovi IV: Installation and Commissioning Guide

1 Introduction

MiX Rovi IV is the next generation rugged and reliable 7” Android tablet designed to operate in harsh commercial automotive environments and works in conjunction with MiX Telematics Fleet Management products.

With an integrated LTE Cat 4 (2G/3G fall-back) modem and GPS receiver, the unit will ensure reliable communication and accurate positioning. With 1.5m drop resistance and military spec vibration and shock standards, this durable device will handle the harsh conditions in industries like mining, oil & gas and agriculture.

Send Messages and Jobs directly to drivers from MiX fleet Manager to which drivers can respond to on the MiX Rovi IV. Standard event violations are displayed on the screen and input menus can be customized to suit business requirements. Hours of Service (HOS) allows the driver to effortlessly make status changes, view available hours, log inspections, view HOS logs and edit log data.

2 System Overview

This document defines the Installation requirements of the MiX Rovi IV to the interface to the MiX 4000 / MiX 6000 LTE unit. The legacy MiX 6000 is not support

Figure 1: Overview of System

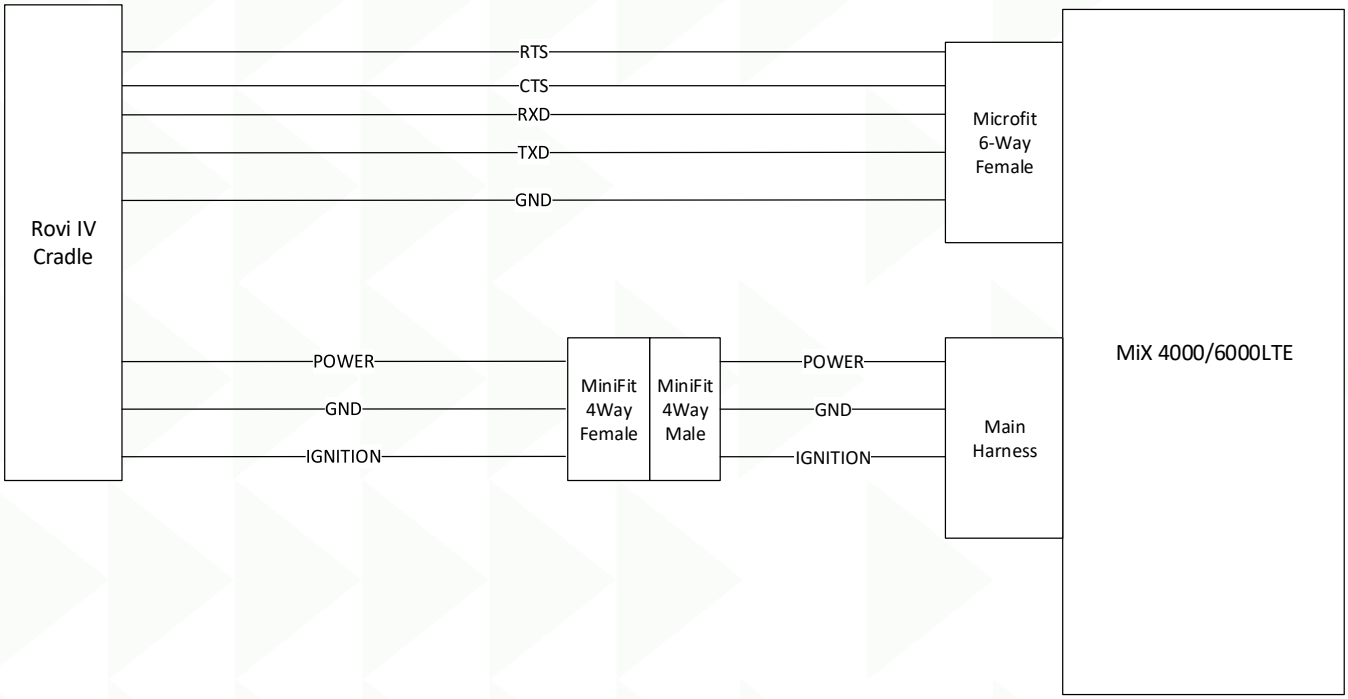


Figure 2: Block Diagram of System

3 Rovi IV Kit contents

The Rovi IV is supplied in a box containing the tablet and docking station. There is not mounting bracket supplied in order to reduce weight and cost. Mounting bracket are to be sourced locally in each region.

Name	Picture	Description
Rovi IV		Rovi IV Display.
Docking Station		Docking Station with integrated harness
Screw x 1		To secure the SIM Card and SD-Card compartment

Screws x 4		To secure the Rovi IV to the Docking Station if required. **Not recommended**
Key		**This is optional hardware** To lock the Display in the Docking Station.

4 Environmental Requirements

Do not immerse the unit in water, as the housing is not waterproof. The unit however is water resistant.

5 Installation Requirements

The system should only be installed by a suitably qualified vehicle technician with a basic knowledge of the operation of telematics equipment and the ROVI IV.

6 Wiring Instructions

Figure 3 illustrates how to wire the MiX Rovi IV to the MiX 4000/6000 LTE unit. For a basic connection only Power, Ground and Ignition are required for both the MiX 4000 and Rovi IV.

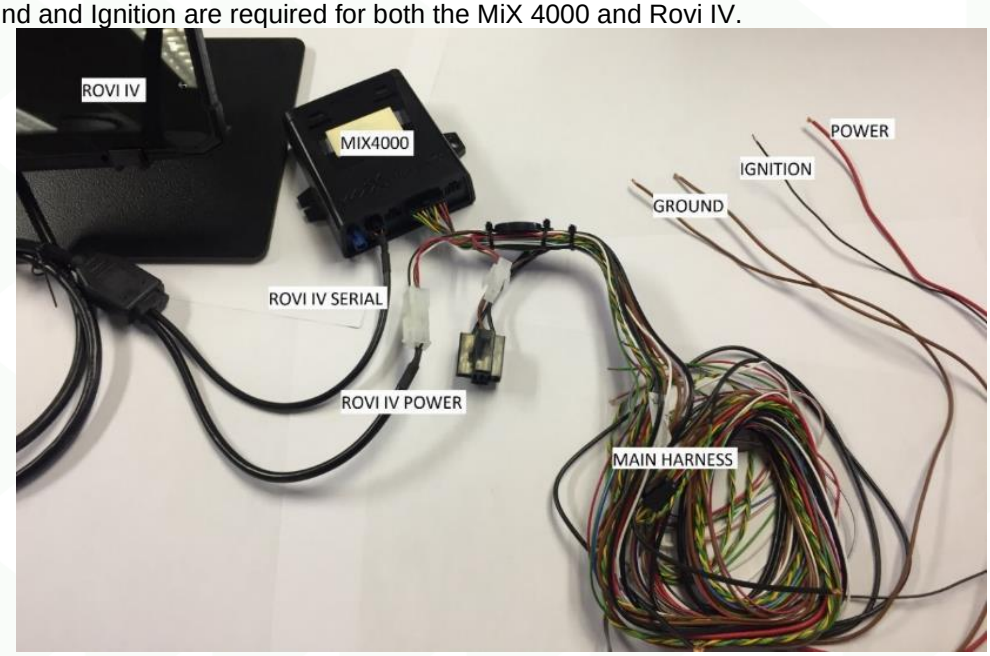


Figure 3: Picture of wire connection

6.1 Harness Pinouts

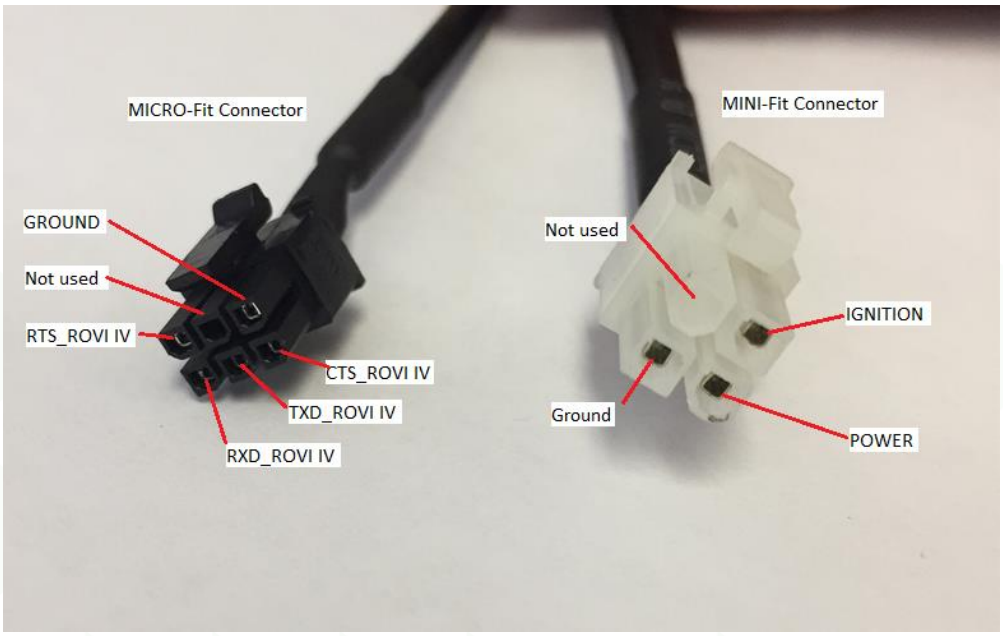
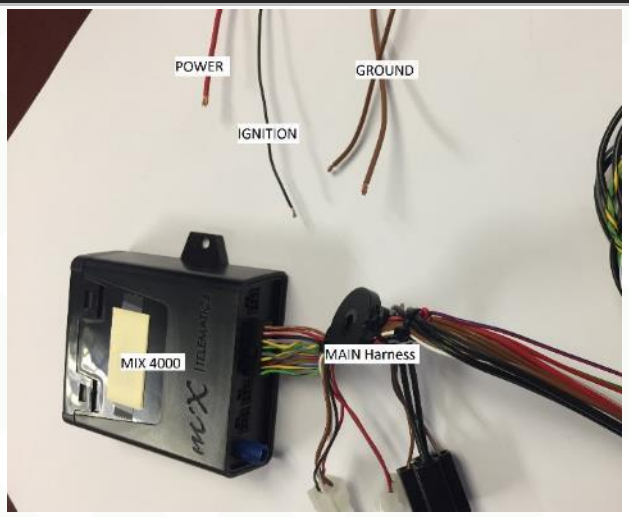
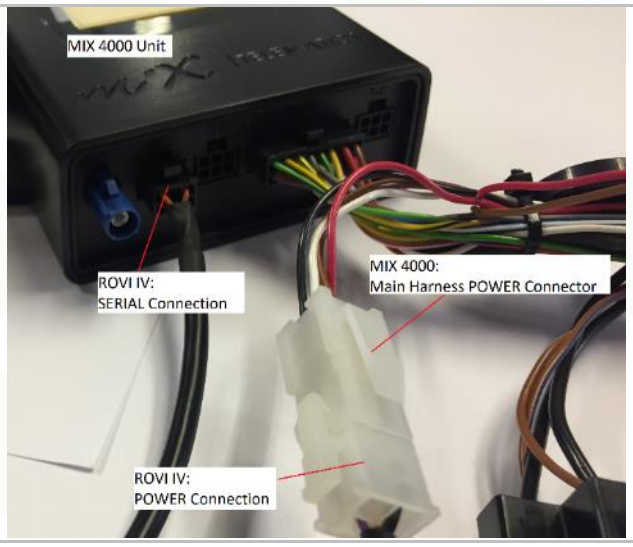


Figure 4: Rovi IV Connector Layout Definition

6.2 Wiring Steps

Step	Picture	Description
MiX 4000 Main harness to Power		1) Connect the Main harness to the MiX 4000 unit (16-way connector) 2) Connect the thick RED wire to the Vehicle Positive 3) Connect the 2 thick BROWN wires to Vehicle Negative/Ground. 4) Connect the Black Ignition wire with vehicle IGNITION.
ROVI IV to MiX 4000		1) Connect the 6-way Micro-Fit connector to available Serial Port on MiX 4000. 2) Connect the 4-way Mini-fit connector of Rovi IV to the Main harness of MiX 4000

7 Mounting

The Rovi IV Docking Station comes standard as part of the Rovi IV. The harness is integrated and cannot be removed. The Docking Station comes with standard RAM/VESA Mount screwing holes. Either 4 hole or 2 hole mounting options can be used refer to Figure 7 and Figure 8.

Figure 5: Rovi IV Docking Station – Front

Ensure that the Communication PINS are free of any obstruction and not damaged.

Figure 6: Rovi IV Docking Station – Back

Mounting and securing holes on back of the Docking Station.

7.1 Bracket Securing

The MiX Rovi IV can be mounted in most vehicles using standard RAM/VESA mounts source from your local region. These mounts are not included in the Rovi IV kit. It is however recommend making use of the **Fixed Mount bracket** and not the suction mount brackets as they can easily be dislodged and could pose a safety risk to the driver.

Figure 7: Suction Mount

Figure 8: Ruggedized fixed Mount

Recommend Mount options:

- 1.912” RAM mount
- VESA MIS-D 75mm mount

The screw hole sizes is M4 x 5mm (Depth), thus recommended screws to use:

- Screws (Allen/Hex): PM4 x 9mm(Length);

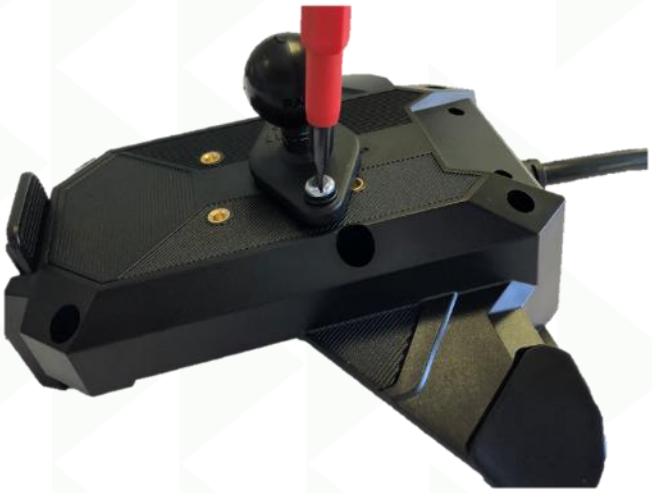


Figure 9: Securing RAM Mount

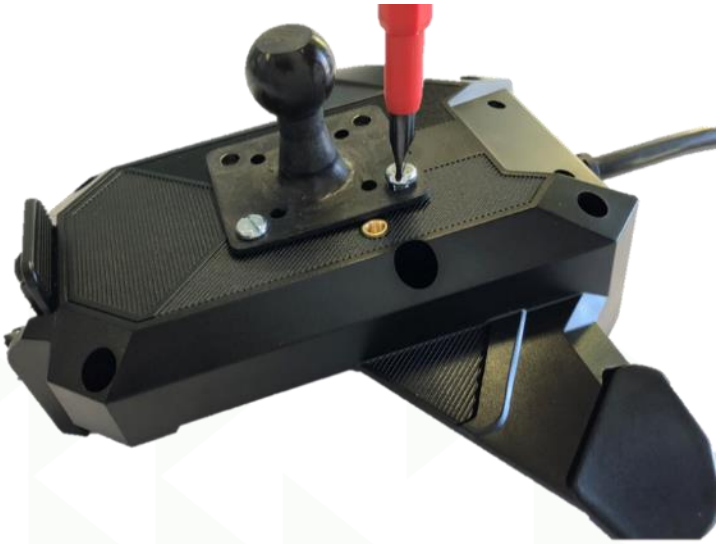


Figure 10: Securing VESA Mount

7.2 Securing Rovi IV to Docking Station – (Not Recommended)

If required that the Rovi IV should not be removed from the Docking Station. Optional securing screws can be used to permanently secure the device to the Docking Station. Please note that if the MiX Rovi IV is permanently secured, the device cannot be removed from the vehicle without undoing the screws.

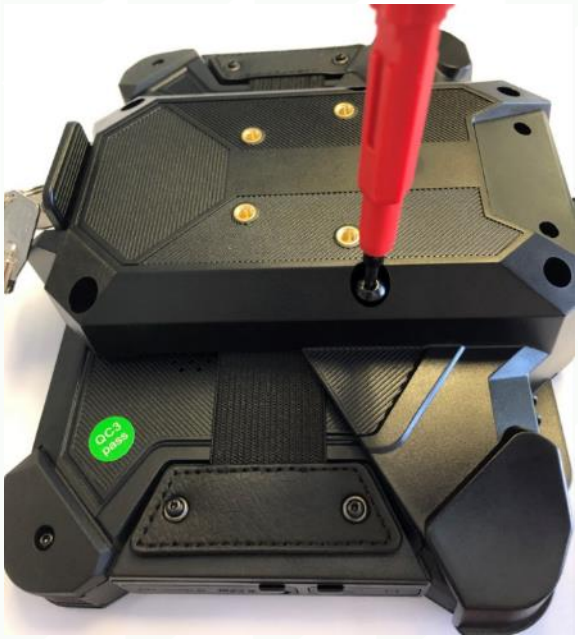


Figure 11: Securing display to Docking Station

7.3 Locking Device with Key – Optional Hardware (Not Recommended)

If required, you can also lock the bracket in place to ensure the device cannot be removed from the bracket. When using this key, the key can only be removed when in a locked position. In an unlocked position the key cannot be removed.

7.4 SD-Card

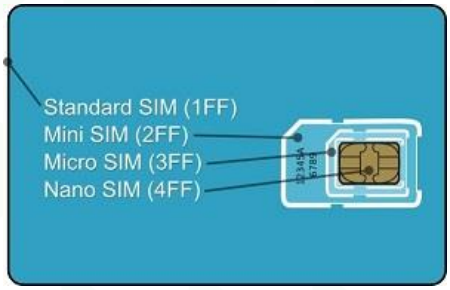
The Rovi IV comes pre-fitted with an SD-Card from the factory**. Do not remove this SD-Card as required files for navigation and system backup files are preloaded on it.**

NOTE: If the SD-Card needs to be changed, ensure device is off before changing cards.

7.5 SIM Card

Insert a Micro SIM (3FF) into the SIM card slot as per image below.

NOTE: If SIM Card needs to be changed, ensure device is off before changing cards.

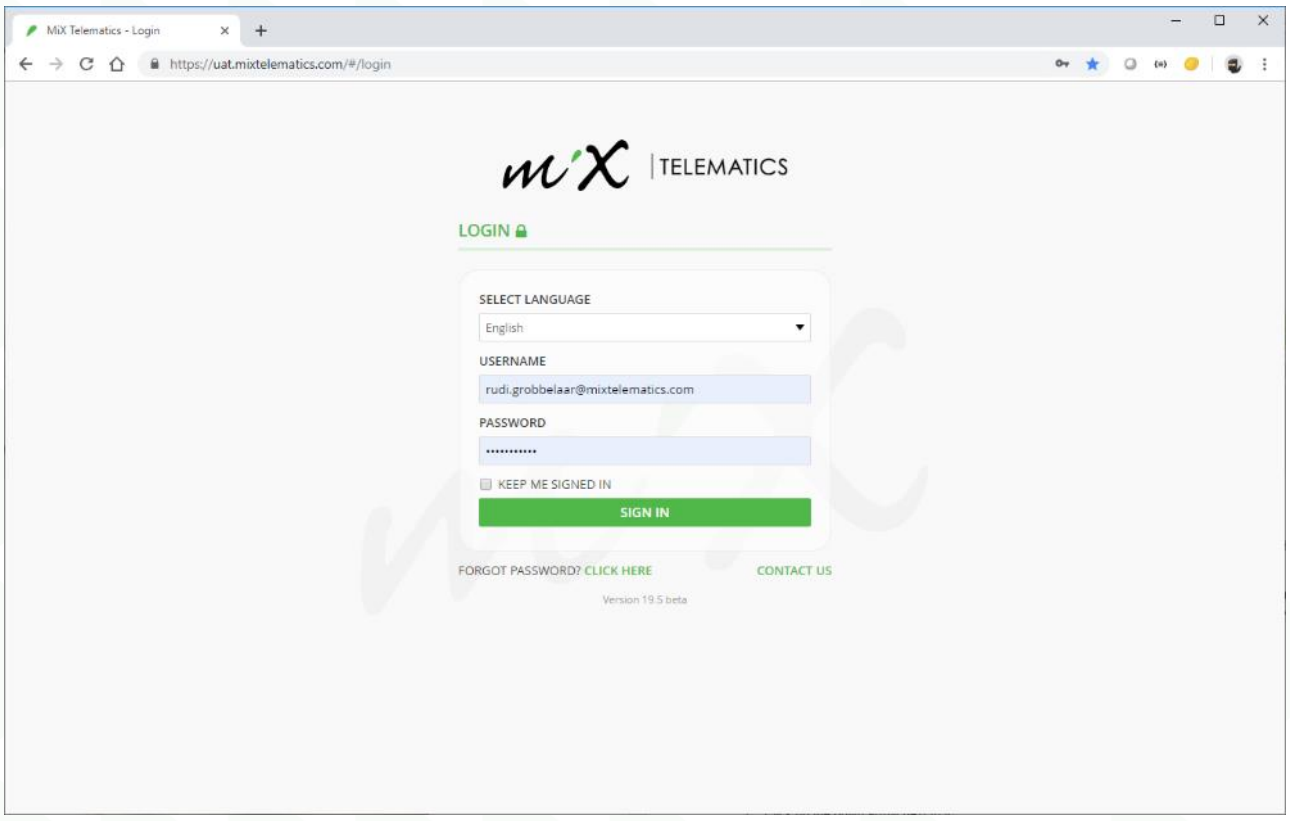


SD-Card and SIM card electrical **contacts must face the display side** and **beveled edge** first side in when inserting.

The compartment can be secured by fixing the screw in the provided slot.

8 Setup: MiX Fleet Manager

This section will guide you on how to configure the vehicle on MiX Fleet Manager to ensure the Rovi IV is ready to use. Log into MiX fleet Manager Portal as per normal and ensure you have docked your device on the Docking Station to accept the new configuration files.



8.1 Asset Configuration

To make the MiX Rovi IV peripheral available in your organization you need to the complete the following steps:

1. Navigate to "**MANAGE → CONFIG ADMIN → Libraries**" as per Figure 12.
2. In **Peripheral** section, scroll down to or type in search to "**MiX Rovi IV**" and press "**Make Available**" as per Figure 13.
3. Add the "**MiX Rovi IV"** to **S1** (or relevant Serial port) of the MiX 4000 under "**Mobile Device Templates"** and update group configuration. Figure 14.

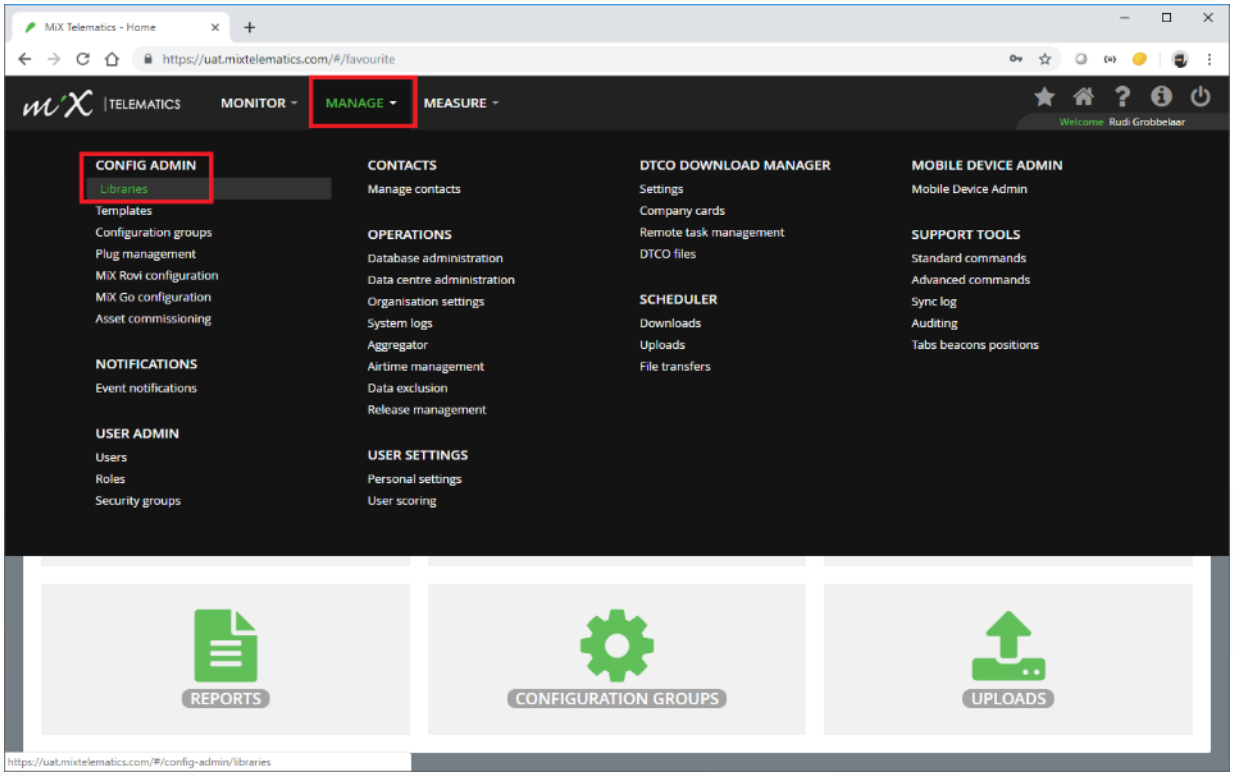


Figure 12: Select Libraries in Config Admin

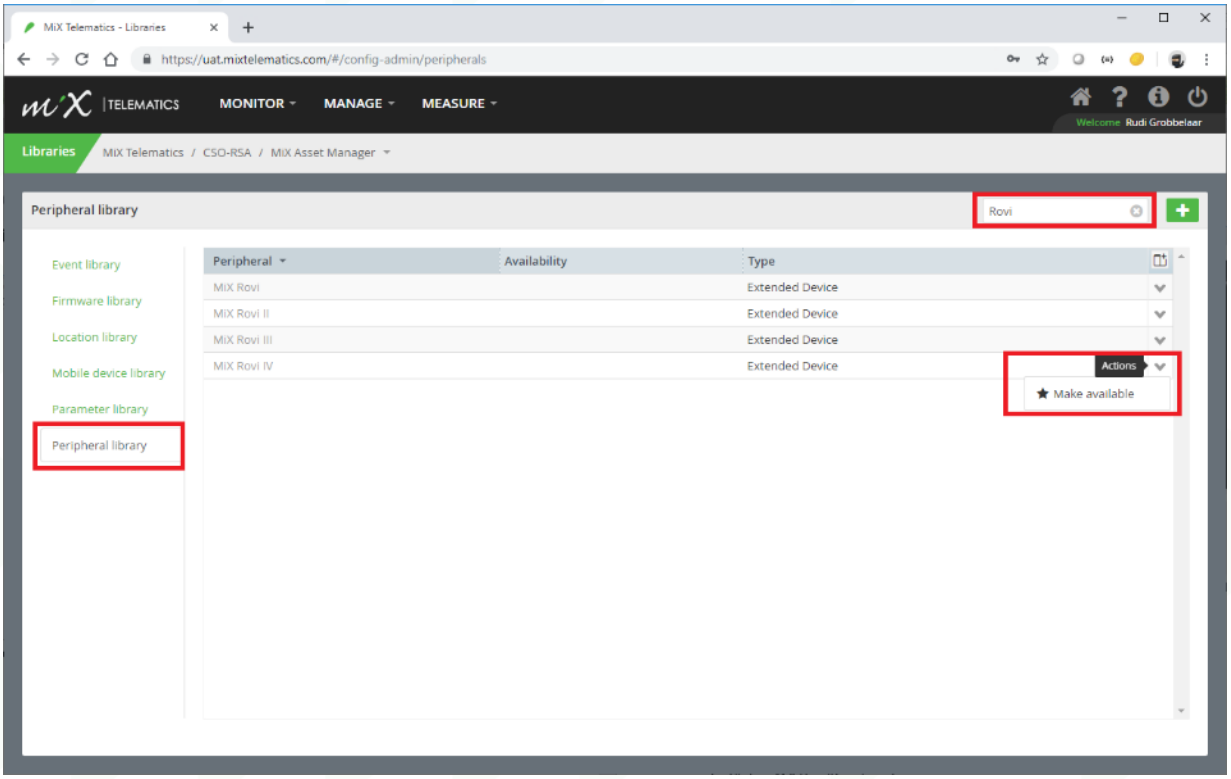


Figure 13: Enable Rovi IV as and Peripheral

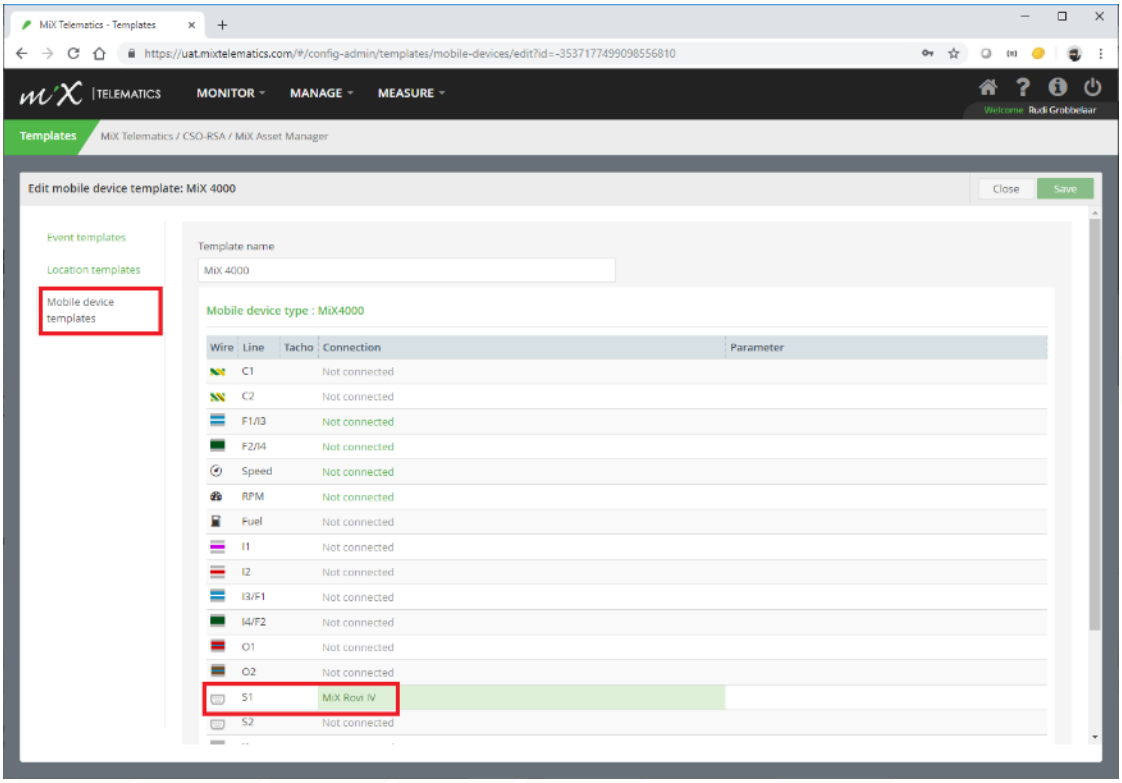


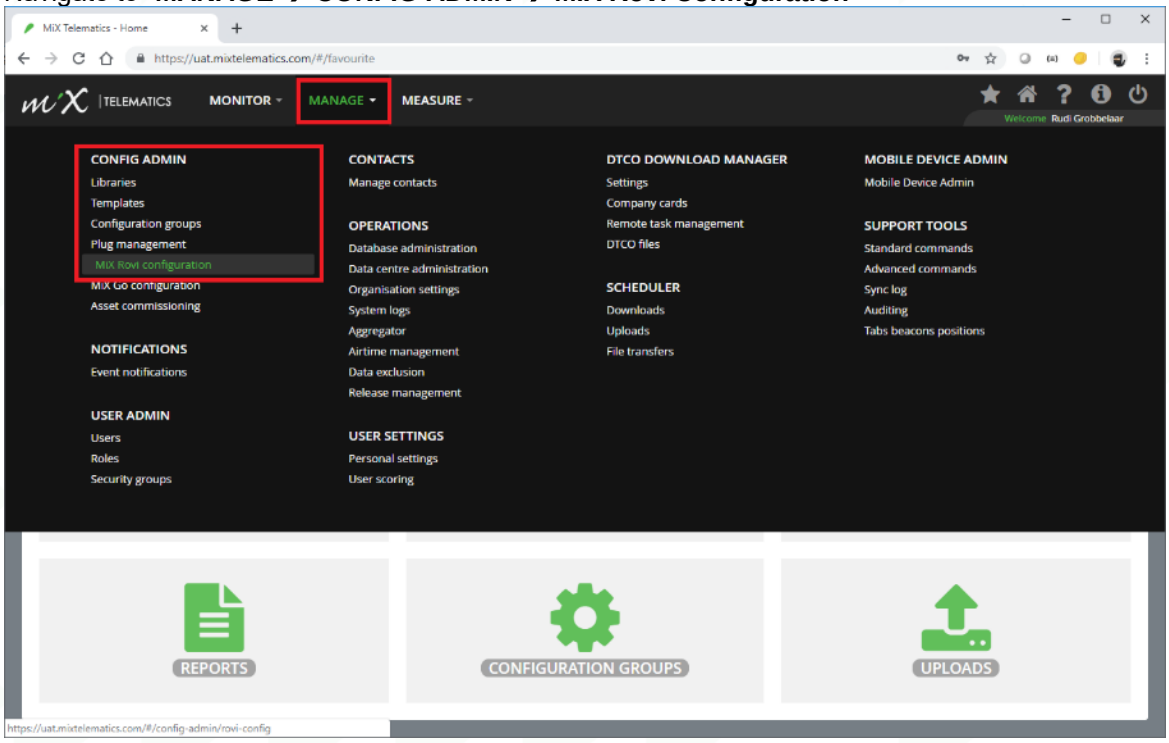
Figure 14: Add MiX Rovi IV to Serial Port

8.2 MiX Rovi Configuration

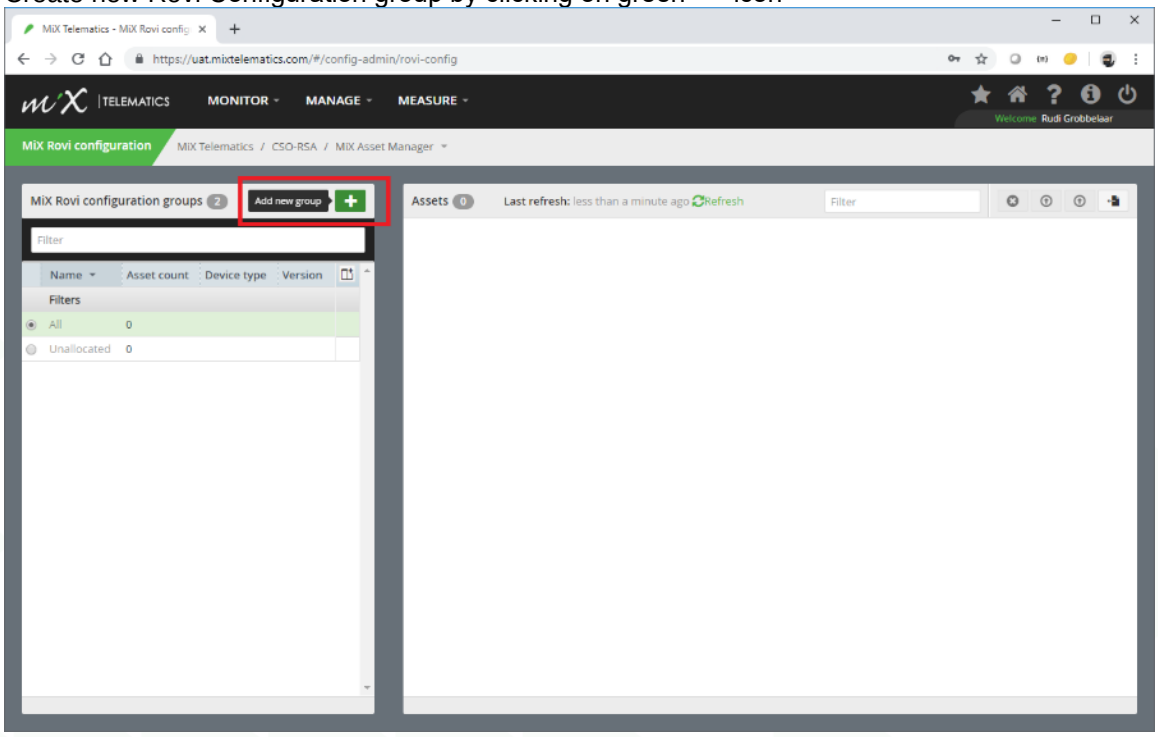
This section will explain the MiX Rovi Configuration creation process and the update process.

You would first need to create a configuration group and then you can assign this group some of all of your Rovi IV devices or have multiple group for your desired operation.

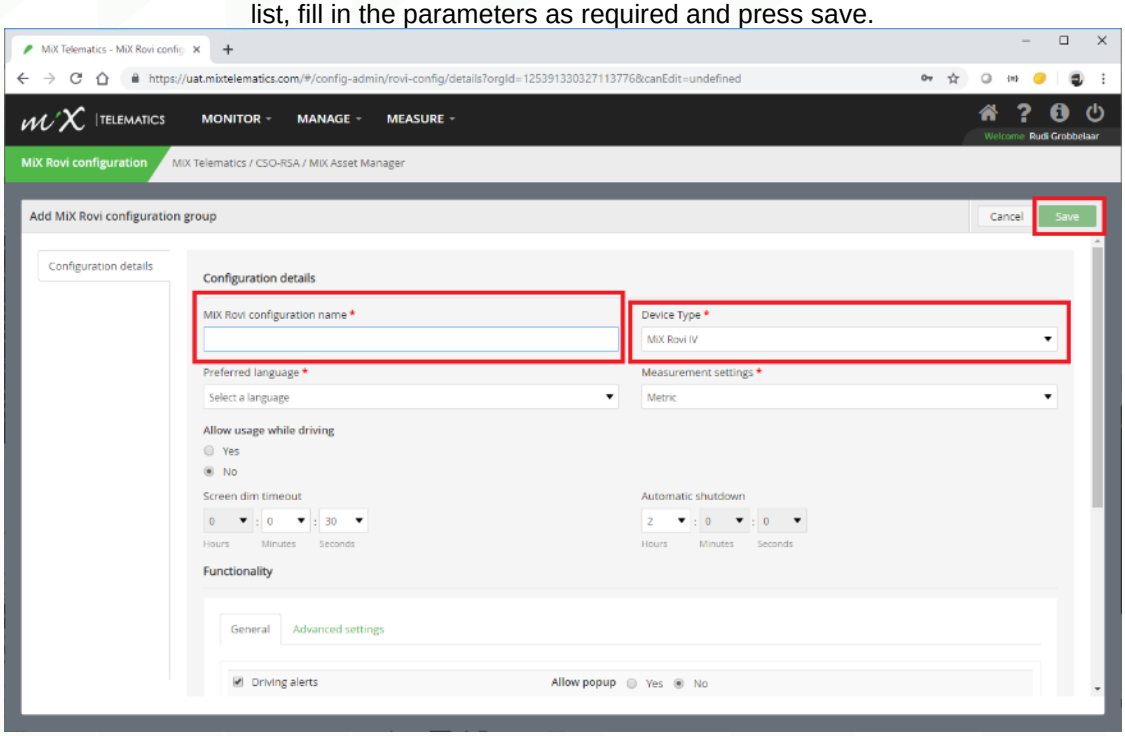
1. Navigate to "**MANAGE → CONFIG ADMIN → MiX Rovi Configuration**"



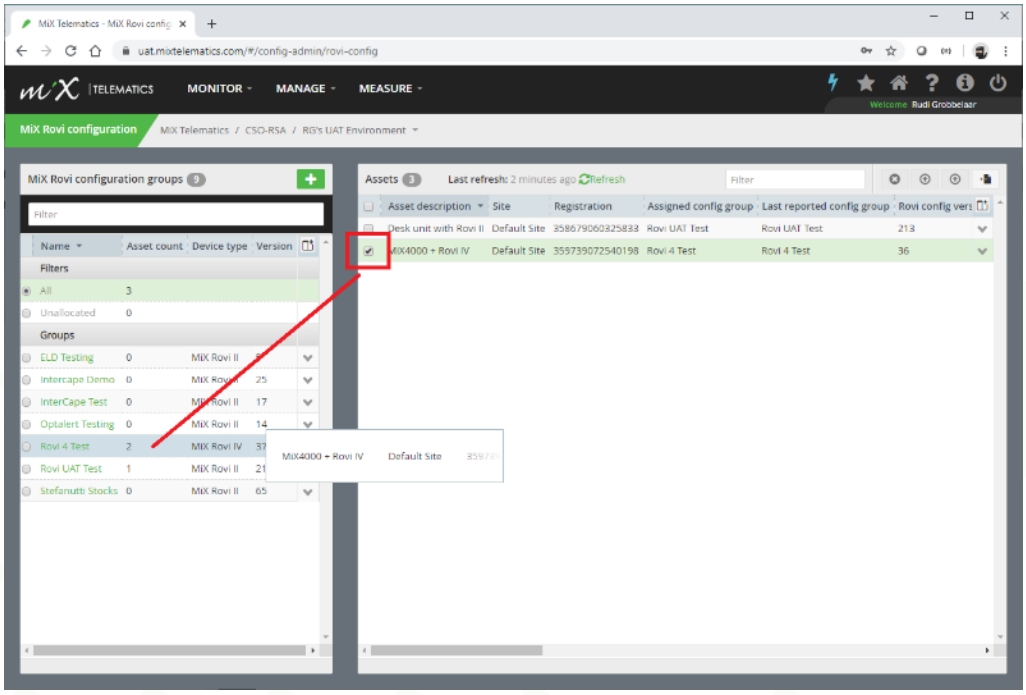
2. Create new Rovi Configuration group by clicking on green ”+” icon



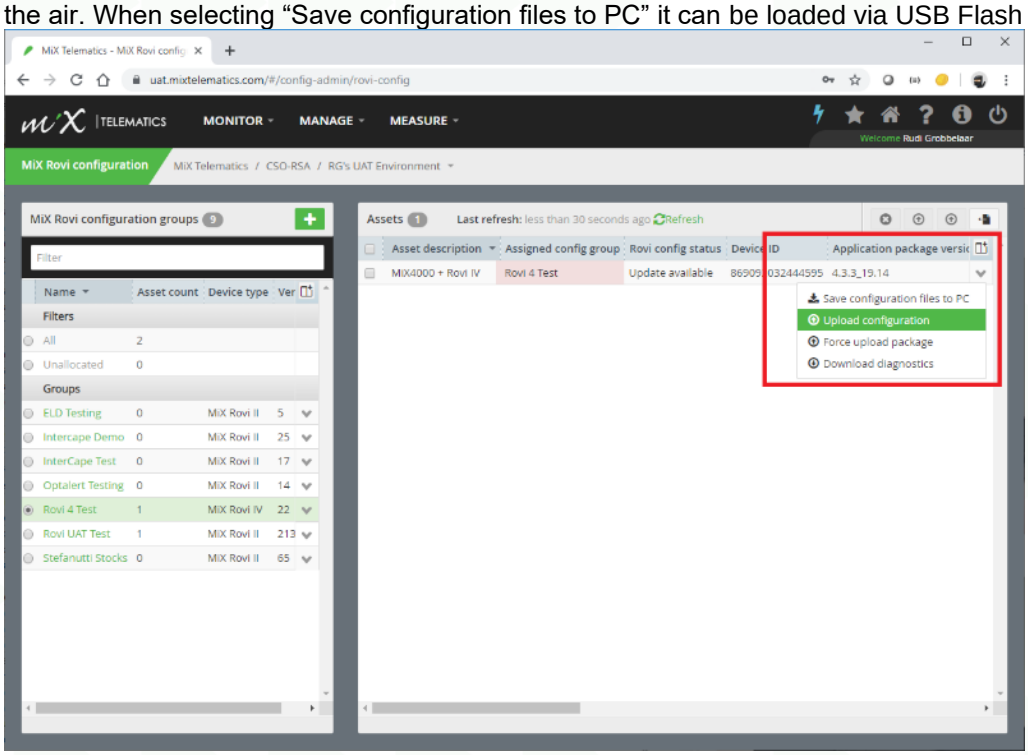
3. Type in the New Configuration name and ensure MiX Rovi IV is selected from the Device Type drop list, fill in the parameters as required and press save.



4. Assign the relevant vehicles to the config group. Select the device on the right and then click and drag on the device name to “drop” into correct configuration group.



5. Click the action dropdown and select **Upload Configuration**. This will upload the configuration over the air. When selecting “Save configuration files to PC” it can be loaded via USB Flash drive.

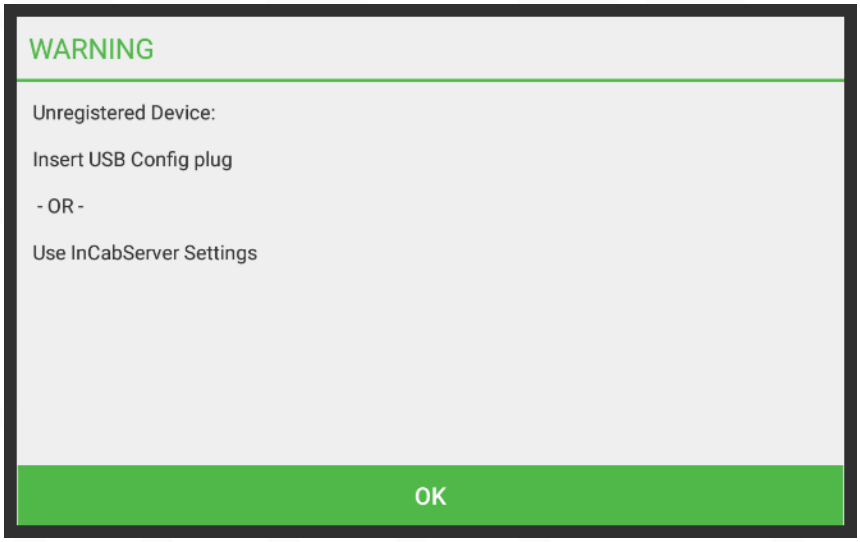


9 Setup: Device Side

This section looks at the settings you need to change on the Rovi IV to ensure that the unit is connecting to the correct environment. The Rovi IV devices are not shipped with any Rovi configuration, so in order for the device to know where to connect to you would be presented with two options.

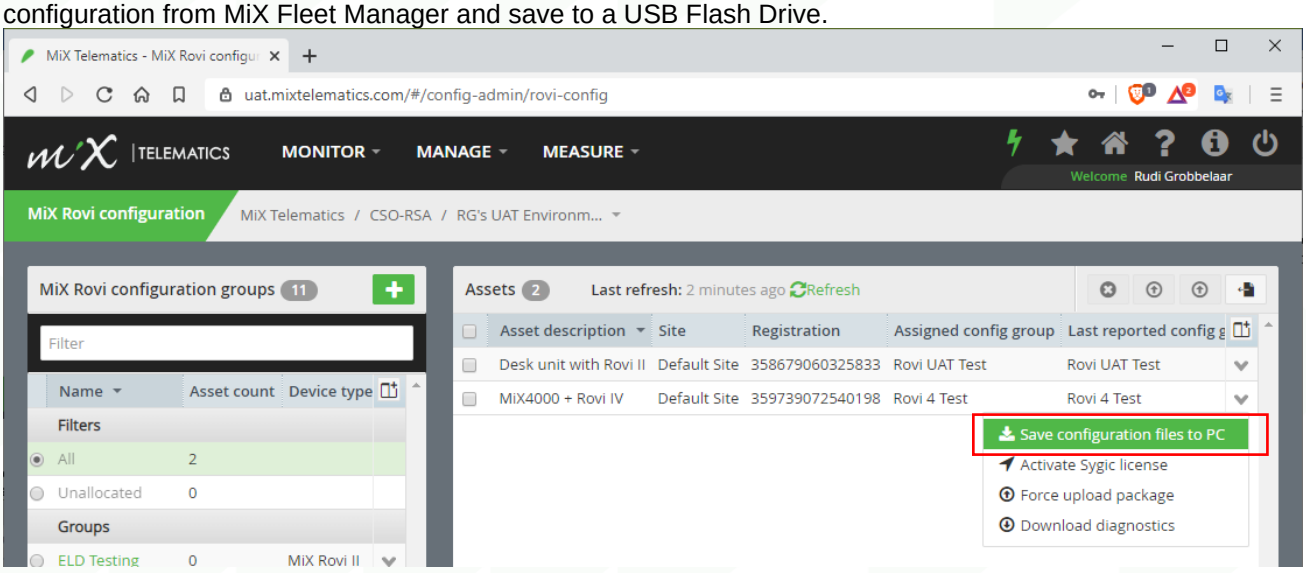
By pressing “OK” it will default to the second option first, InCabServer Settings. For all new devices you will first need to indicate to the Rovi IV on what server it needs to communicate to. Then only will the plug or OTA config work.

If you do not see this message, undock and then re-dock the device.



9.1 Via USB Config plug

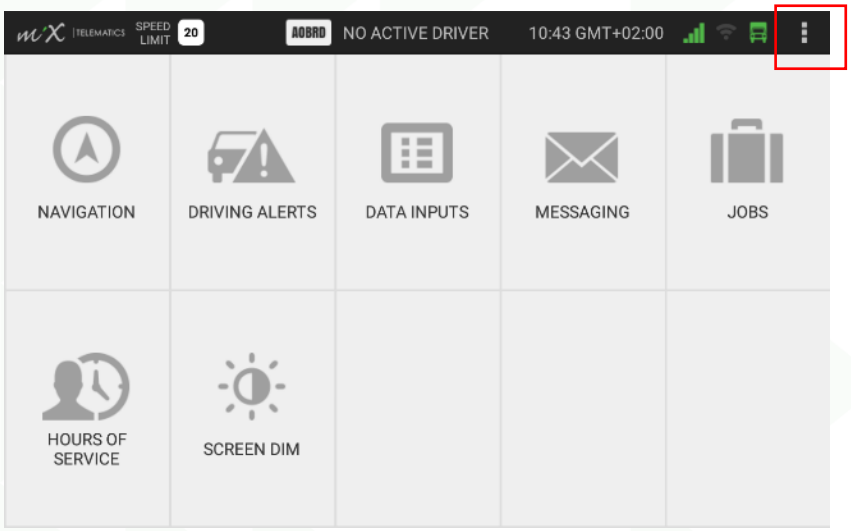
This step is designed for replacing a Rovi IV on a vehicle and not for new installations. Download the configuration from MiX Fleet Manager and save to a USB Flash Drive.



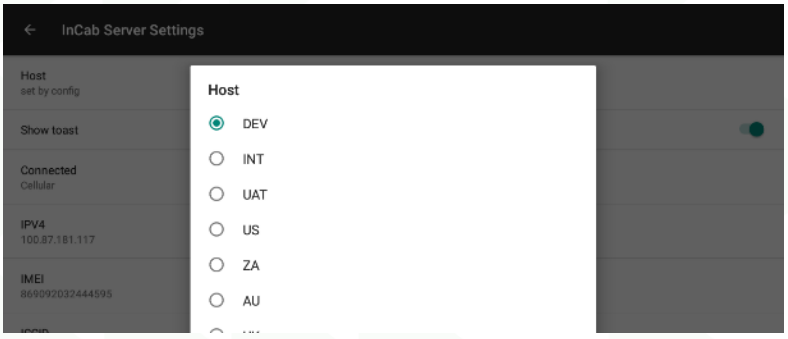
In order to connect the display, you would require an USB Type-C OTG (On The Go) cable. This is not a supplied part and can be purchased locally. Follow section 8.2 on how to download the config.

9.2 Manually on Device

In order to ensure that the device communicates to the correct MiX Fleet Manager Environment, you would need to set this first. To access the settings menu, press the Hamburger Menu Icon on the top right of the screen.



Then Navigate to the through > **Diagnostics** > **Administrator** > "**123456**" > **InCab Server Settings** > **Host**
Select the appropriate server (US, ZA, AU, etc)



This is the only settings required on the device. All remaining settings are performed via the MiX Fleet Manager portal. You now need to dock the display on the Docking Station to ensure the next section will work correctly.

9.3 APN Settings

In some cases unique APN is required for

10 Update Software and OS

This section handles with Software and OS updates.

10.1 Software Update

This section deals with the Rovi IV software application and how to update it remotely or via USB.

10.1.1 OTA

The MiX Rovi IV software versions are available on the MiX Fleet Manager portal under “MiX Rovi Configuration”. Updating of the software requires a few steps.

The OTA software package and version will be labeled as follows:
a.b.c_d.e_f

a = Rovi hardware version. 2 = Rovi II and 4 = Rovi IV
b.c = ELD User guide. A.B = es.en (Spanish.English)
d.e = Rovi Application version
_f = Script install version. _V1

Examples:
4.3.3_19.14_V1 → This will upgrade the ELD user guide as well as the Rovi IV Software.
4.3.3_x.x_V3 → This will upgrade the ELD user guide only on Rovi IV.
4.x.x_19.14_V1 → This will upgrade the Rovi IV Software only.

1. Navigate to Manage > Libraries > Firmware and search for the latest Rovi IV software package and make it available.

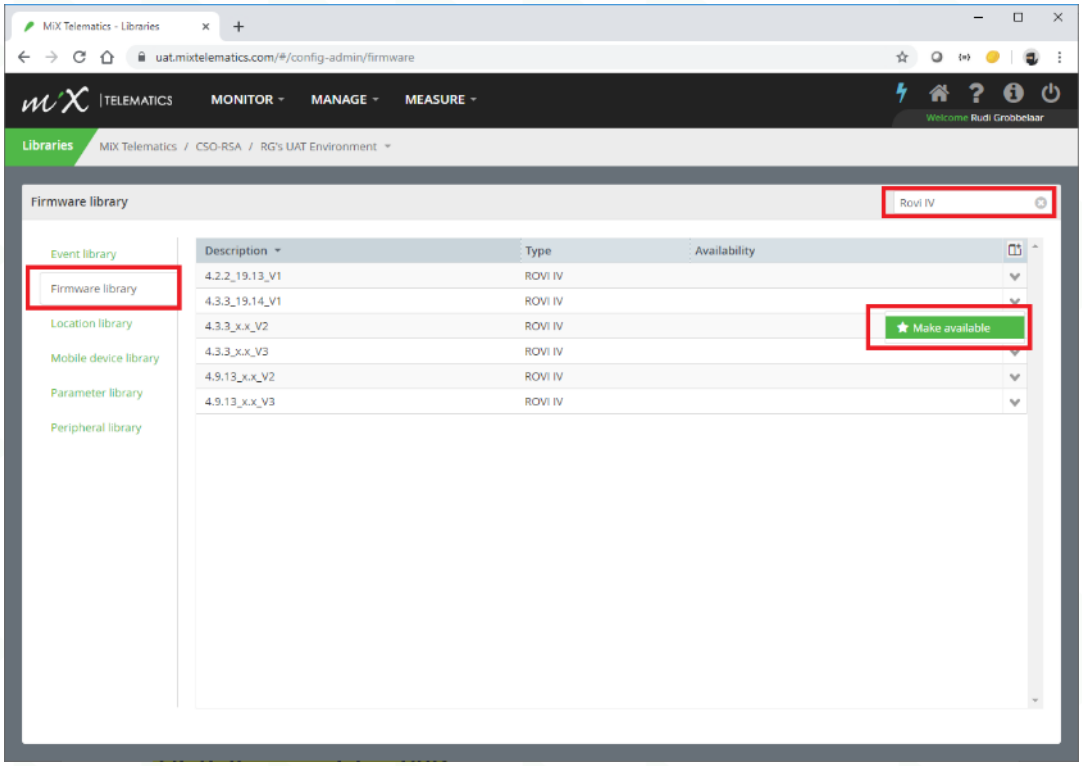


Figure 15: Firmware Library

2. You would first have to enable the software as a “preferred version” for the Rovi IV peripheral in Library Level and Save.

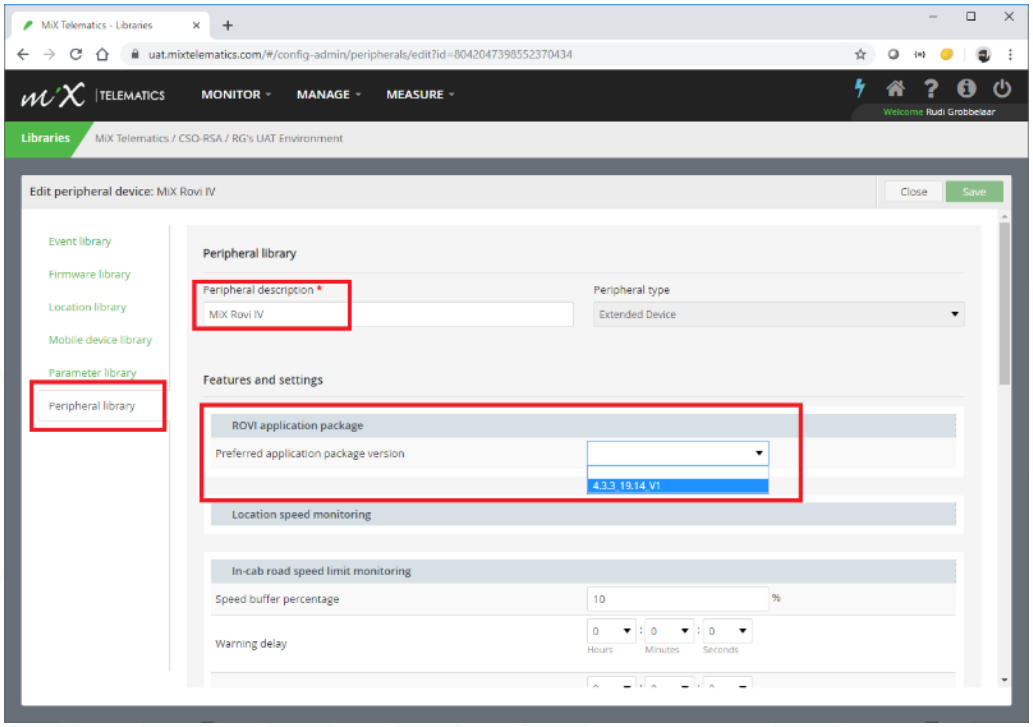


Figure 16: Preferred application version

3. Rovi Configuration page will now have the option to upload the new application

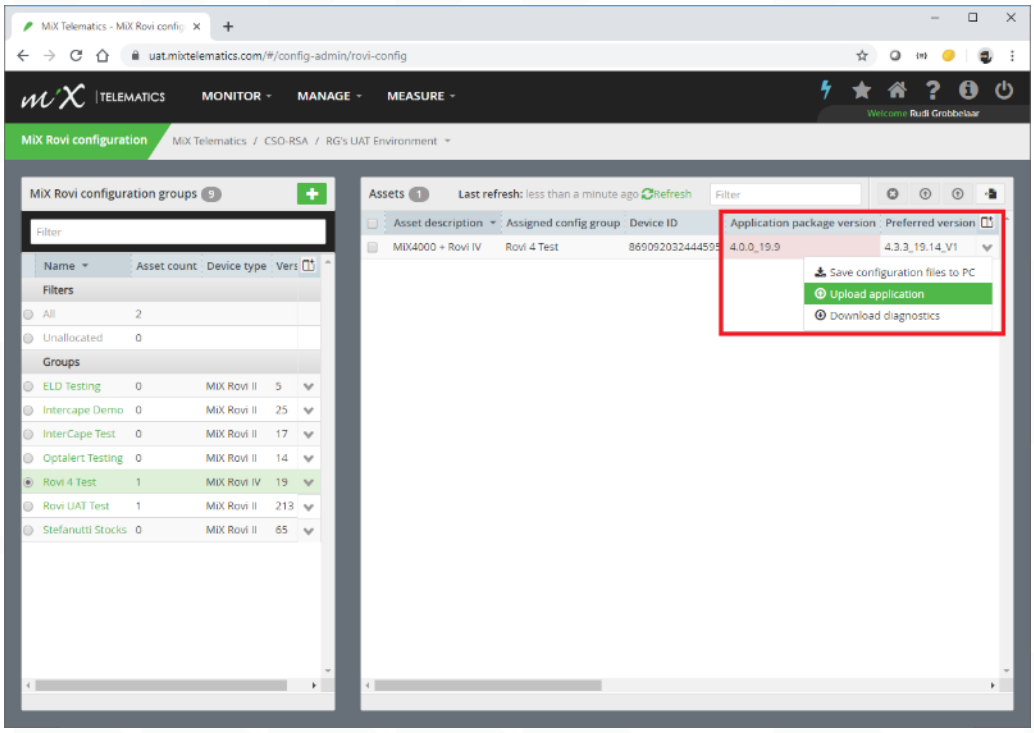


Figure 17: Upload Application

4. The progress of the update is visible in the status column.

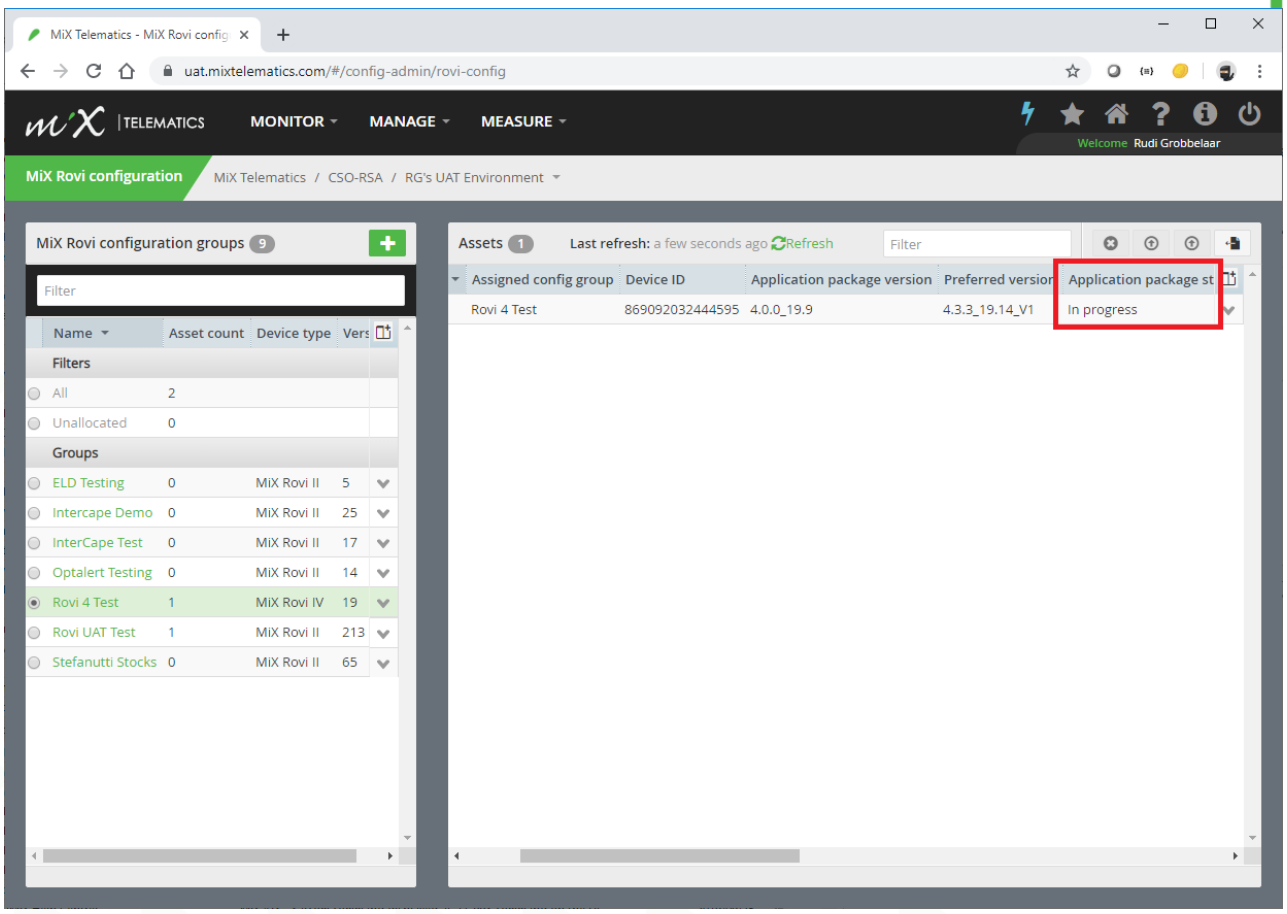


Figure 18: Application update Status

10.1.2 USB

In order to update the Rovi IV via USB files you would require the following items:

USB Type-C OTG (On-The-Go) Cable
USB Flash Drive (>1GB)

Ensure to format the USB and then unzip/extract the compressed file to the top level (root) of the USB drive. Place the OTG cable in the USB slot on the Rovi IV and insert the USB Flash drive in the cable. Follow the on screen commands on the Rovi IV. Once completed, remove both USB Flash Drive and OTG cable

10.2 OS Update

The upgrading of the Rovi IV OS should not be needed. If however a critical update is required, the recommend files will be distributed with update instructions.

11 Navigation

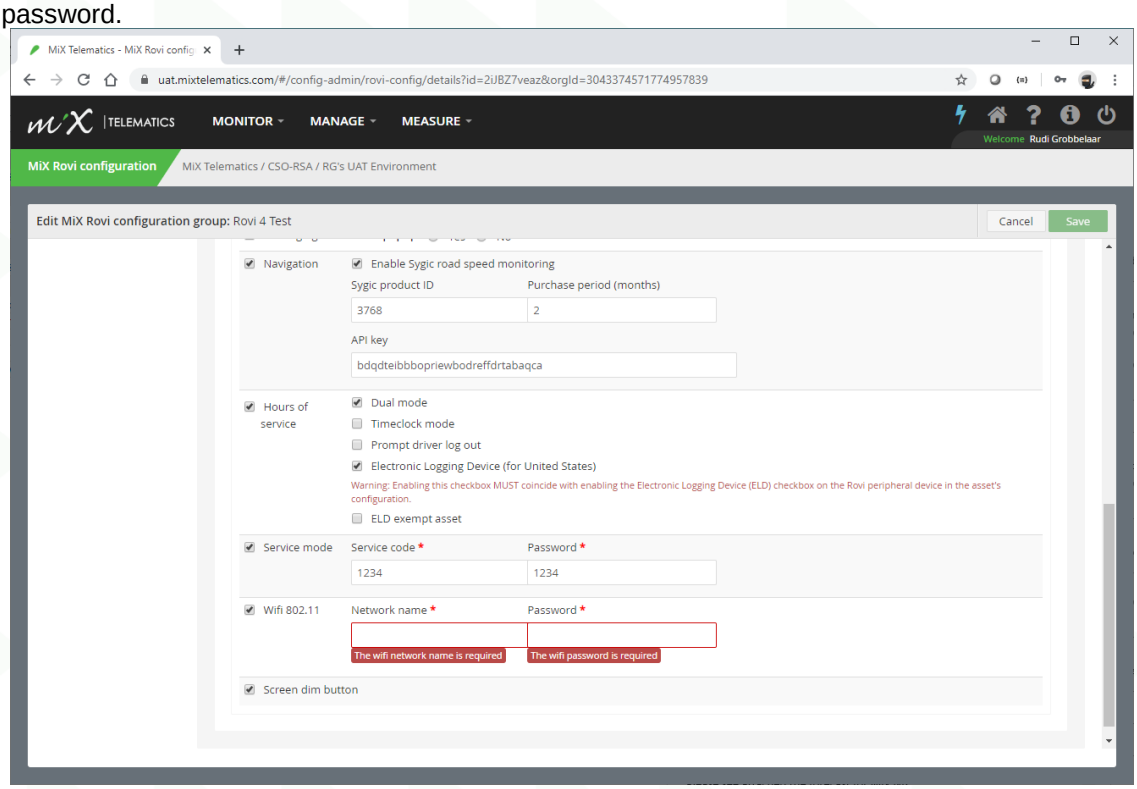
All Rovi IV units comes with a pre-fitted 8GB Micro SD-Card with all required files. Please do not remove this card as installation of the files are done at the factory. The MiX Rovi IV makes use of Sygic 3D navigation version and map installs are done via Wi-Fi by default. Alternative USB installation method is also available.

11.1 Connecting to a Wi-Fi Network

This section will guide you on how to connect to a Wi-Fi network. Currently there are two options, via Rovi configuration or manual setting.

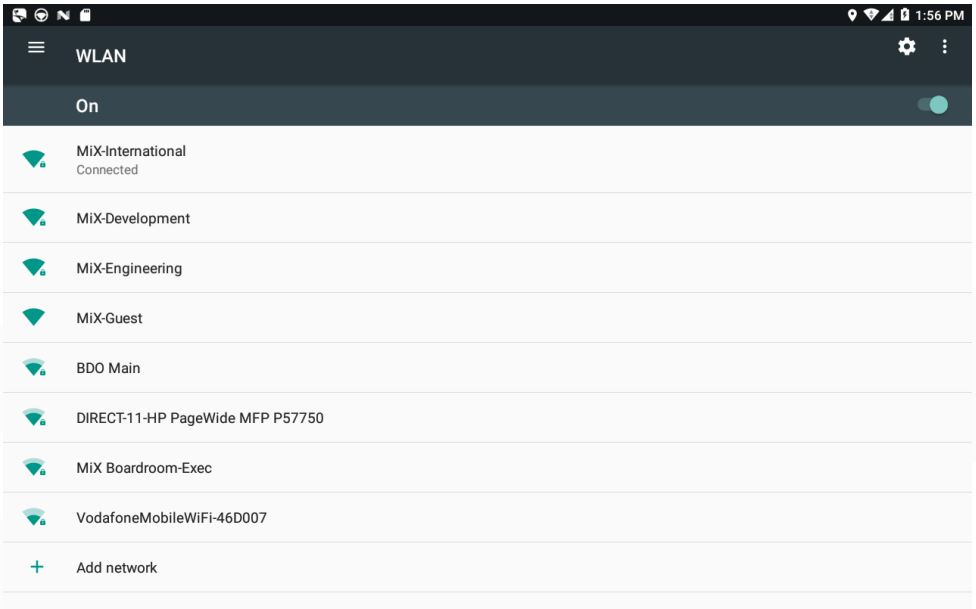
11.1.1 Via Rovi Configuration

The easiest way for Wi-Fi, connection setup is via Rovi Configuration page. Go to the configuration page and enter the **Network name** and **password** for your Wi-Fi network. Resend the config to the Rovi IV device(s). At this stage username and password option is not supported as this is designed for yard connections with only a password.



11.1.2 Via manual settings

This section describes how to manually connect the Rovi IV to you Wi-Fi network.
On the Rovi IV, Navigate to Settings in Administration Menu (section 12.3.1.3). Settings > Diagnostics > Administration > Enter the Admin password > Settings > WLAN settings.
Enable the WLAN and select he network you want to connect.



11.2 Enable Navigation

To enable Navigation for your unit, you need to tick the check box for Navigation in MiX Rovi Configuration. Save and schedule a Rovi Configuration update as per normal.

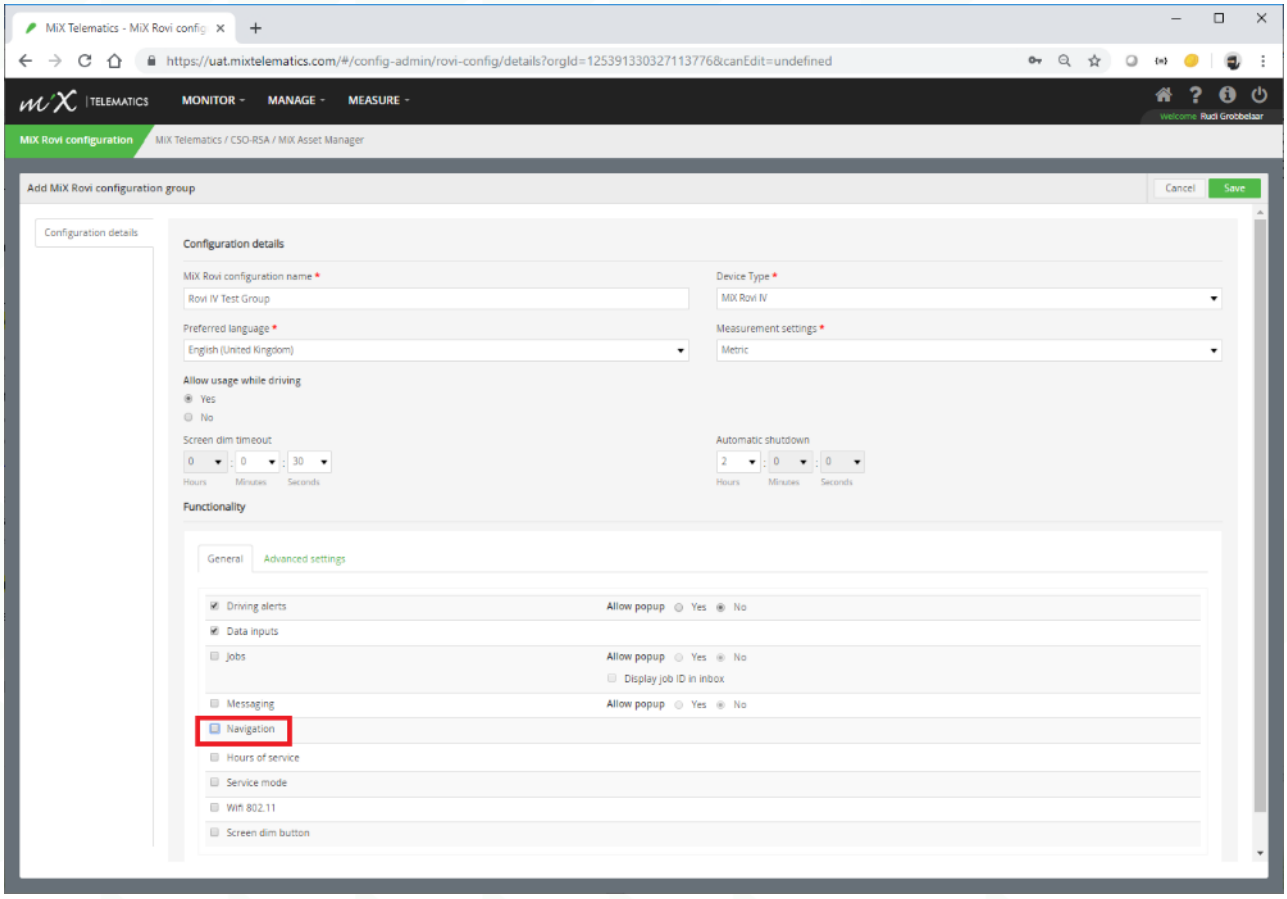


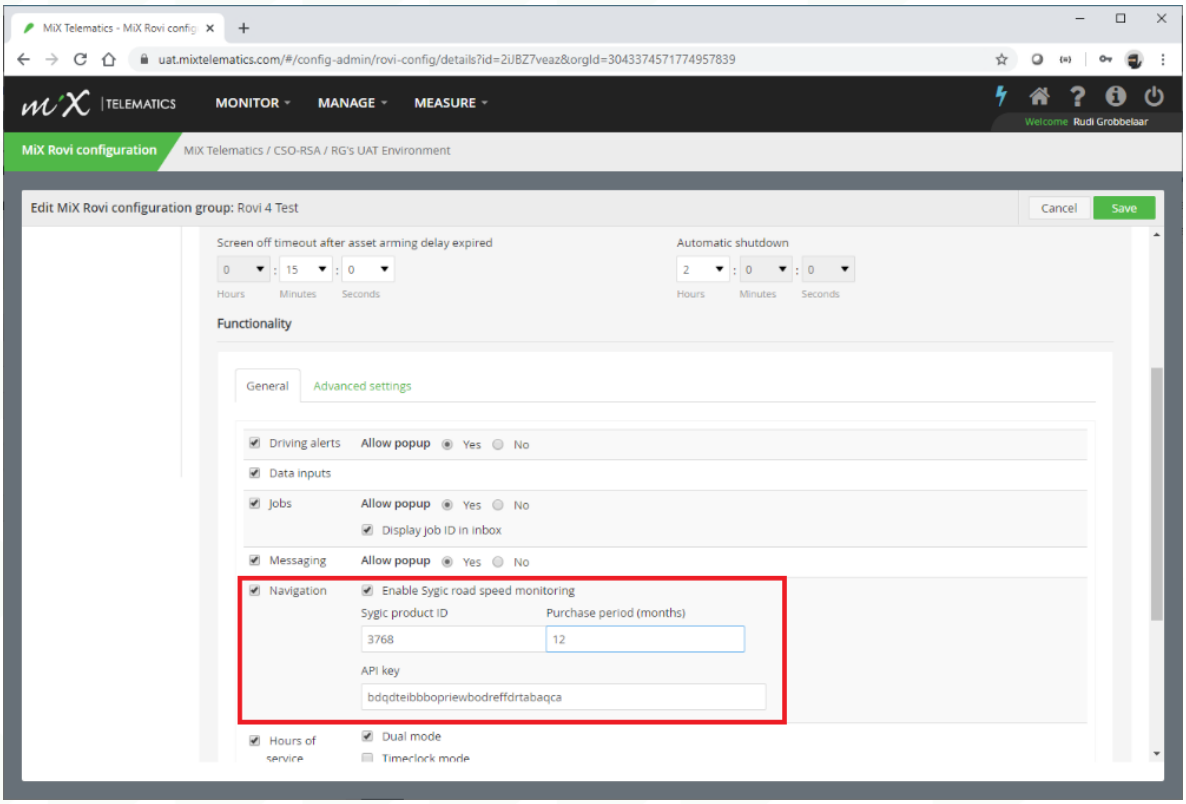
Figure 19: Enable Navigation

11.3 Licensing Navigation

When you enable navigation, you will have to activate your navigation also via paid license option. Due to the device having its own modem, the License is now linked to the IMEI number of the unit and not the SD-Card ID anymore. No Maps are installed during the factory process, so you need to ensure your device is connected to Wi-Fi to download the maps before or after activation.

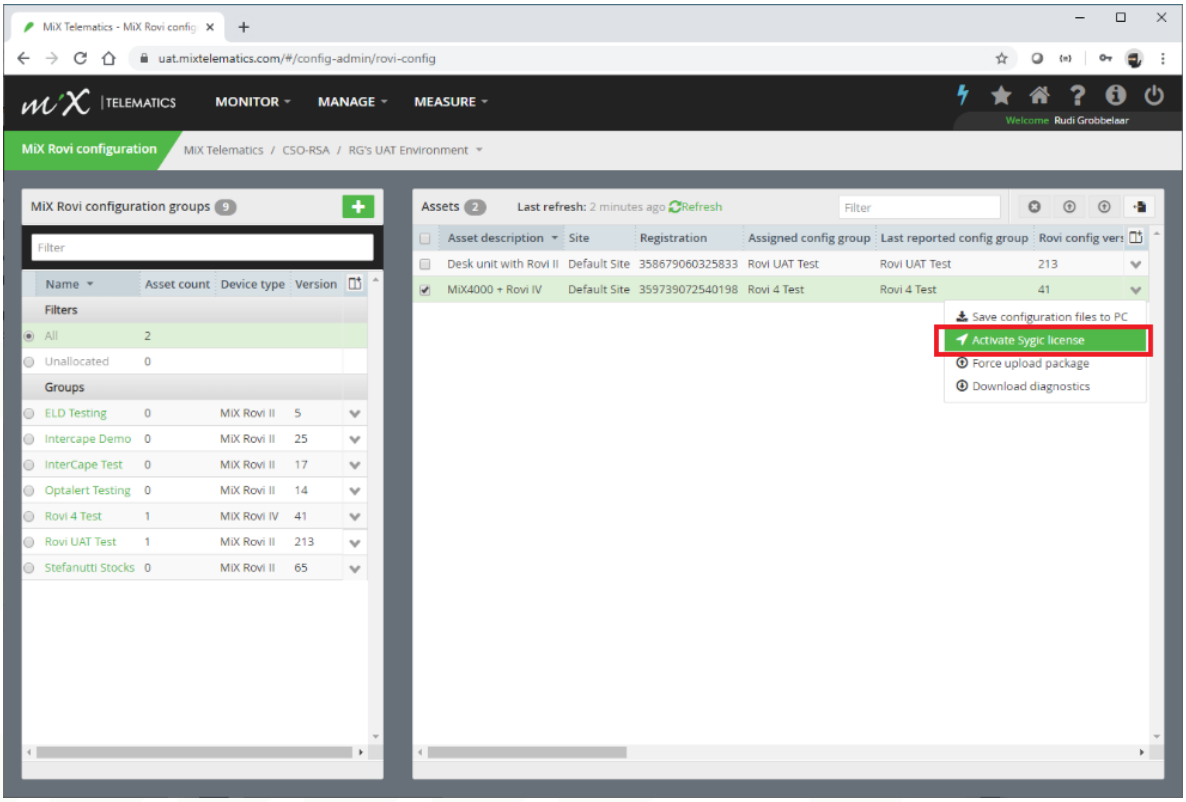
11.3.1 Via MiX Fleet Manager

1. Click on **MANAGE**
2. Below the **CONFIG ADMIN** heading, click **MiX Rovi configuration**
3. Click on the applicable configuration group
4. Enter the **Sygic Product ID** (This is specific to regional maps)
5. Enter the **Sygic Purchase Period**
6. Enter the **API Key** that you will obtain from Sygic. (This is specific to user account)
7. Click **Save**

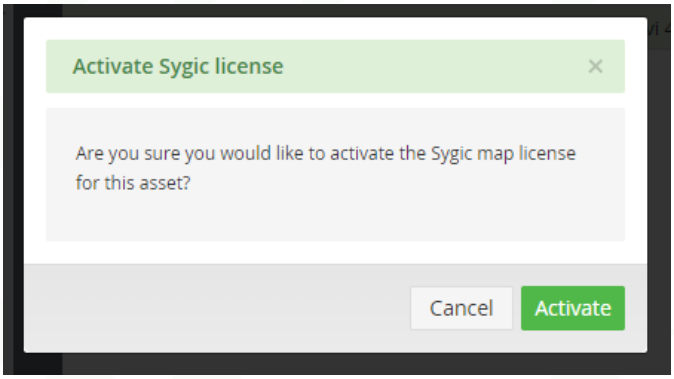


11.3.2 Select Remote Activation of Sygic License

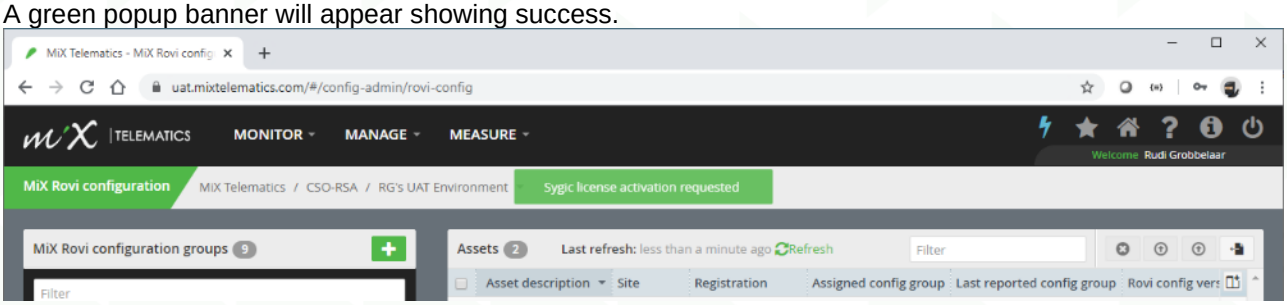
1. Click on the **actions arrow** next to the asset in the MiX Rovi configuration group
2. Click **Activate Sygic license**



3. Click **Activate**



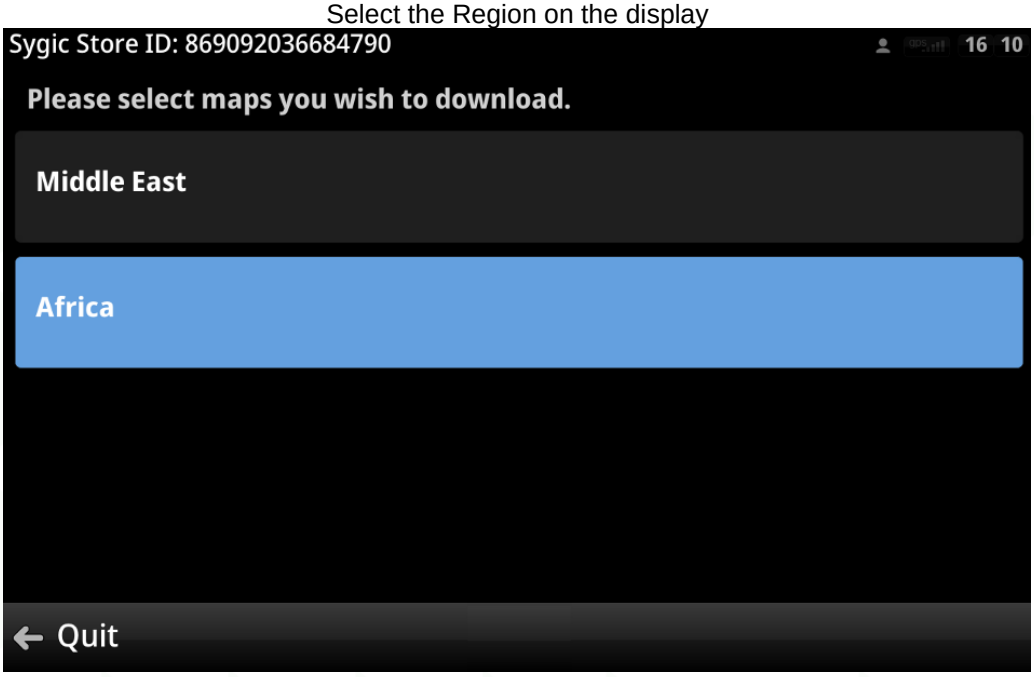
A green popup banner will appear showing success.



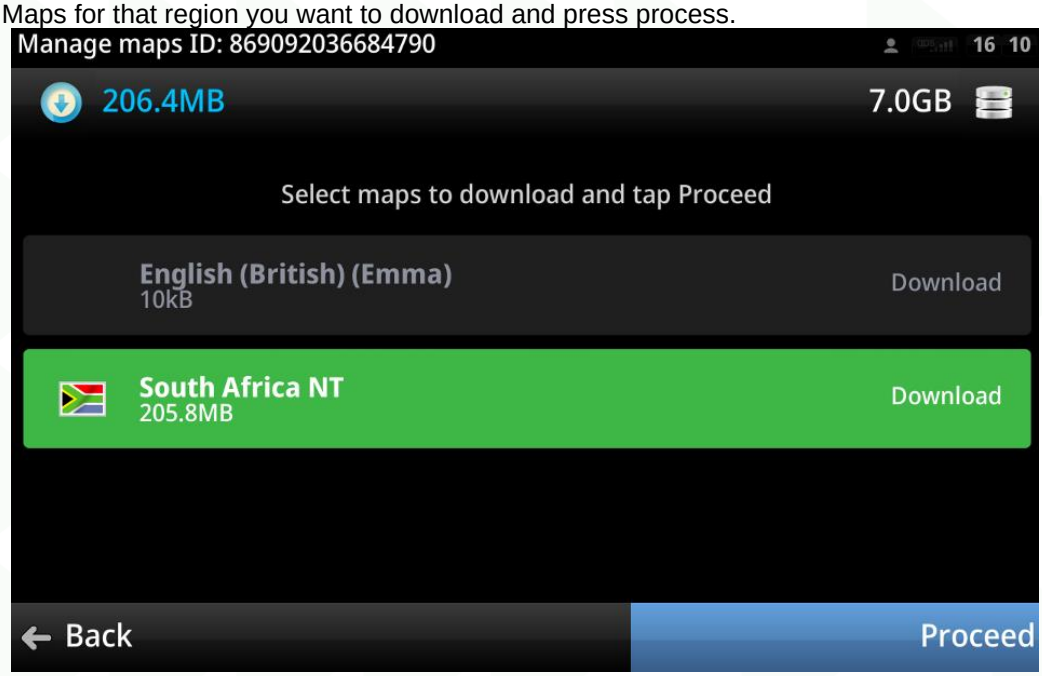
11.4 Installing Maps – via Wi-Fi (default)

Sygic maps are no longer loaded to the SD card offline and you would first need to connect to a Wi-Fi network (Section 11.1) in order to download the Maps for your region/license. All map updates are done via Wi-Fi only and not via you Data SIM card.
Once connected to a Wi-Fi network, you can launch the Navigation.

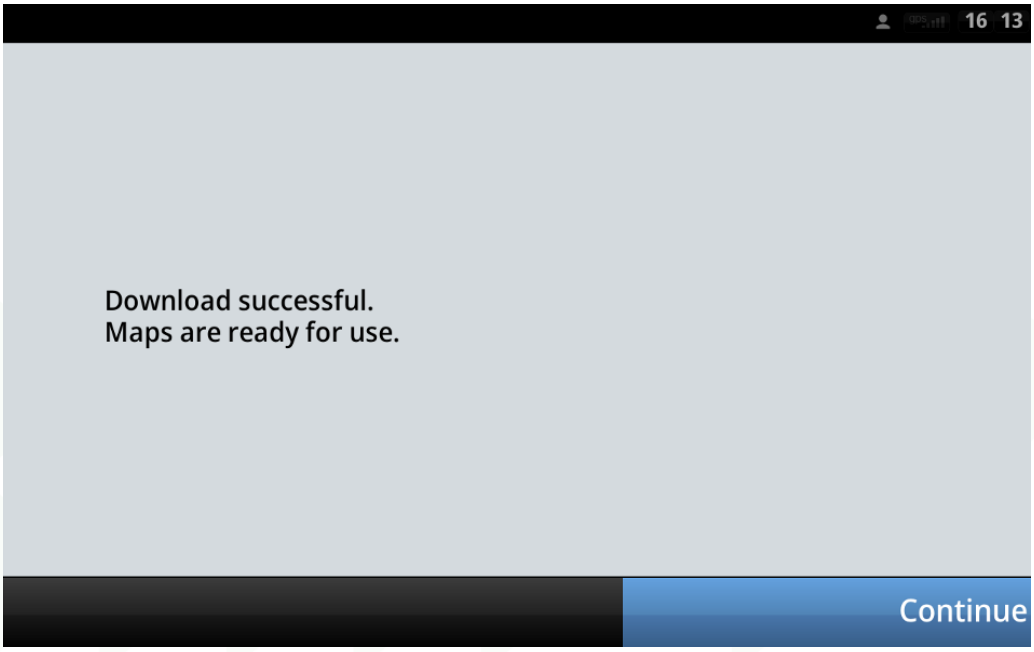
Select the Region on the display



Select the Maps for that region you want to download and press process.



Once the download is complete, press Continue to setup vehicle features.



11.5 Installing Maps – via USB

There is also an option to copy the maps to the device via a USB containing pre-loaded maps. For North America and South Africa, a pre-downloaded image is made an available.
For other regions, in order to make use of the installation via USB, you first need to fully download the required maps on one device, and then you can create a custom map image of that device you can duplicate to other units.

11.5.1 Requirements:

- Application version => 20.5 Build#441 [Settings > Version Info]
- Map image
- USB Drive and OTG cable

11.5.2 Limitations:

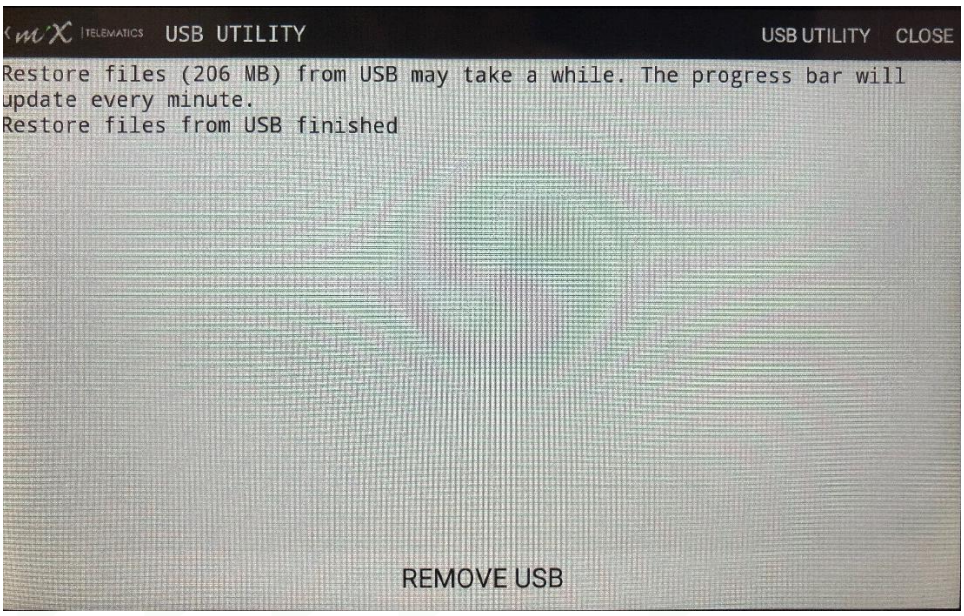
- This process will only copy the map data and not voice (TTS) data. By default the MiX Rovi IV comes preinstalled in the factory with the following language TTS data:
  - English (US and UK),
  - French,
  - Portuguese (Brazil),
  - Spanish

11.5.3 Map Image:

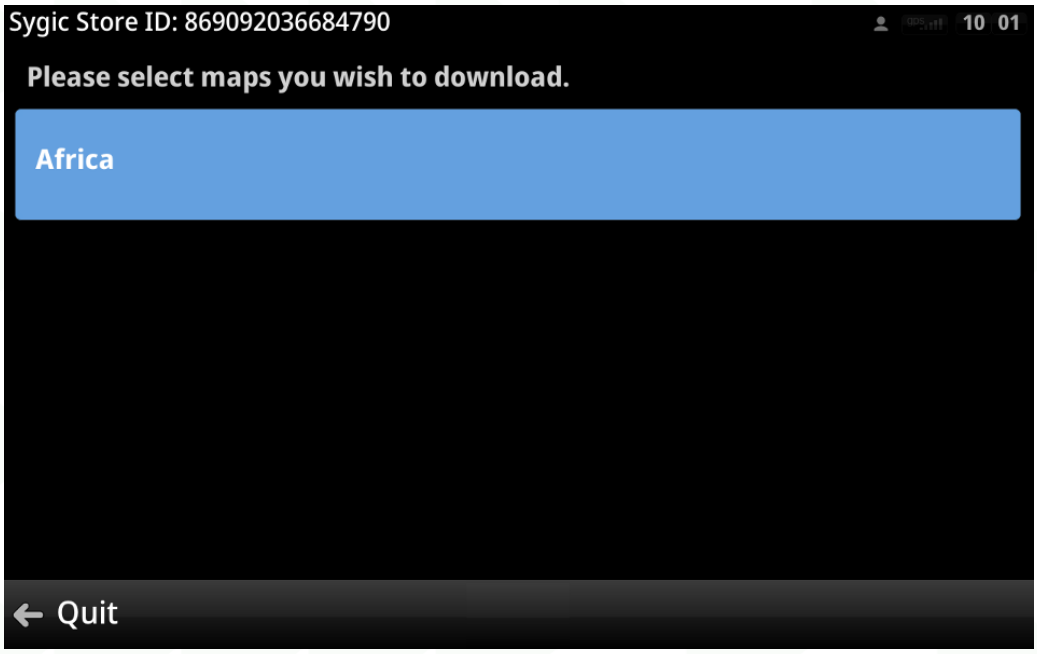
- Download a Map image:
  - ZA Maps, North American Maps
- Create a custom Map image:
  - Ensure the device have full downloaded maps that you intent to copy.
  - Format a USB drive and copy 388628438 header file to the drive
  - Insert the USB to device to start the copying process.

11.5.4 Steps:

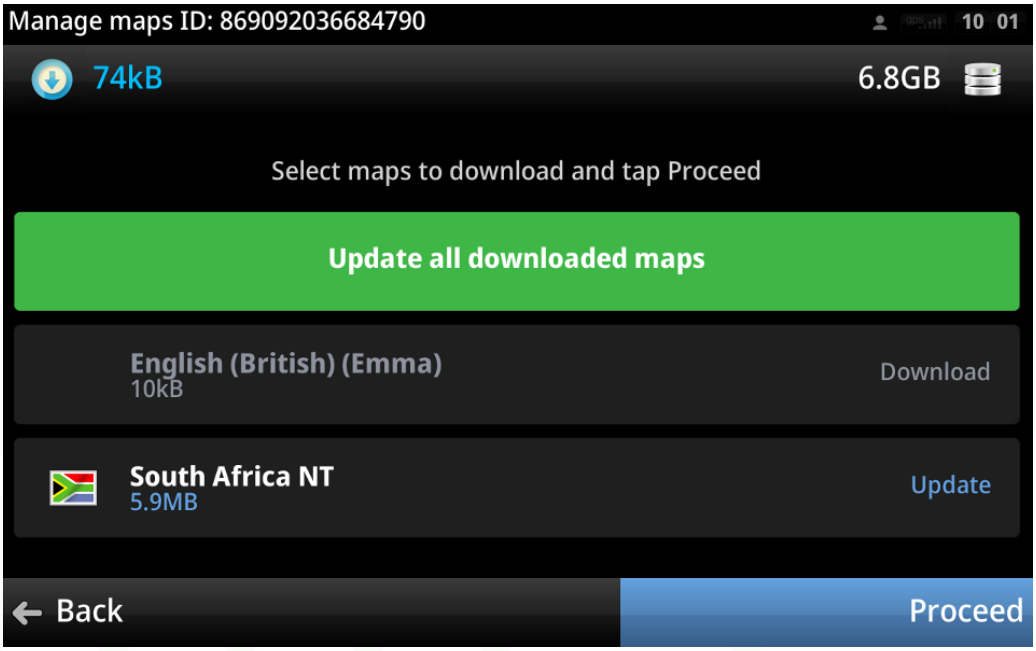
- Download/Create the map installer image as per 11.5.3
- Copy/Unzip the files to an empty USB driver
- Inset the USB drive (Type-C OTG cable required) in the Rovi IV so that the script will copy the necessary files.
- Once files have been copied, you will be prompted to remove the USB.



- Select the region



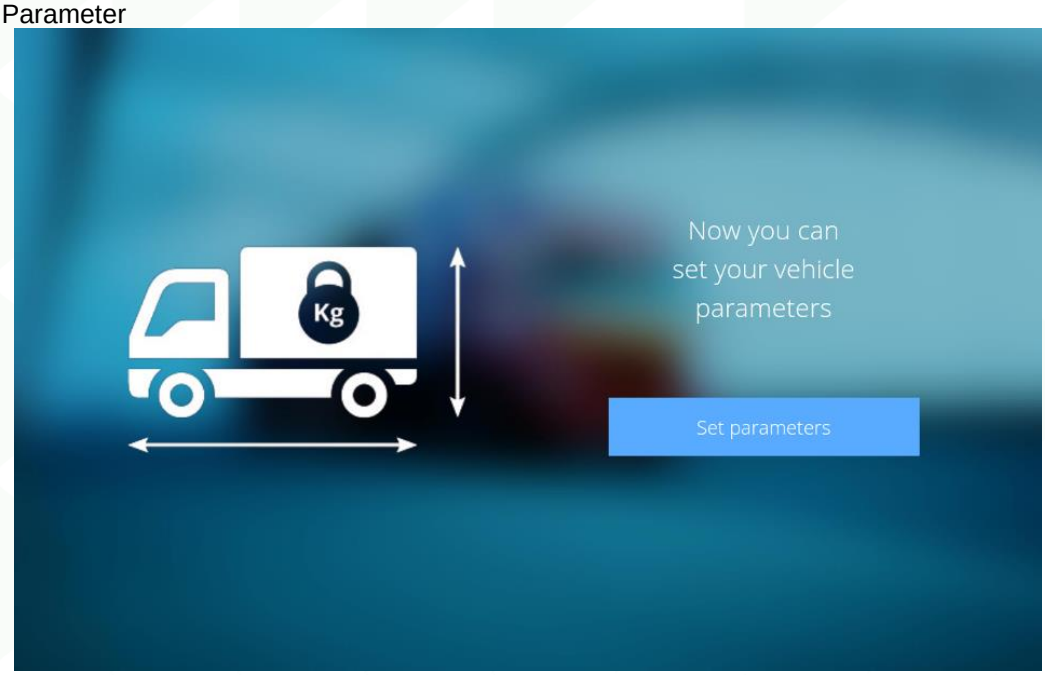
- Map will be shown as “Update” indicating the map files are present on the device, Select proceed to next steps. If “Download” appears (as per step 11.4), then incorrect or no map files have been copied.



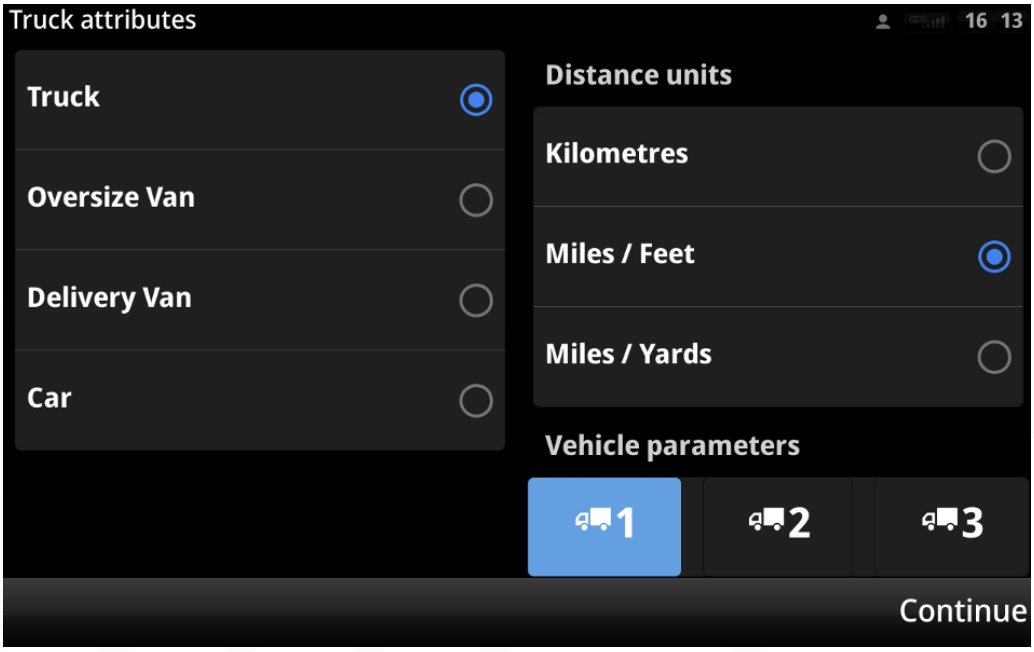
11.6 Verify Map installation and functionality

Once the map installation is complete, you will be prompted to setup your navigation software.

Press Set Parameter



Enter the valid parameter for your vehicle and continue.



Once this step have been completed, the device will get GPS lock and you will see your location on the display.

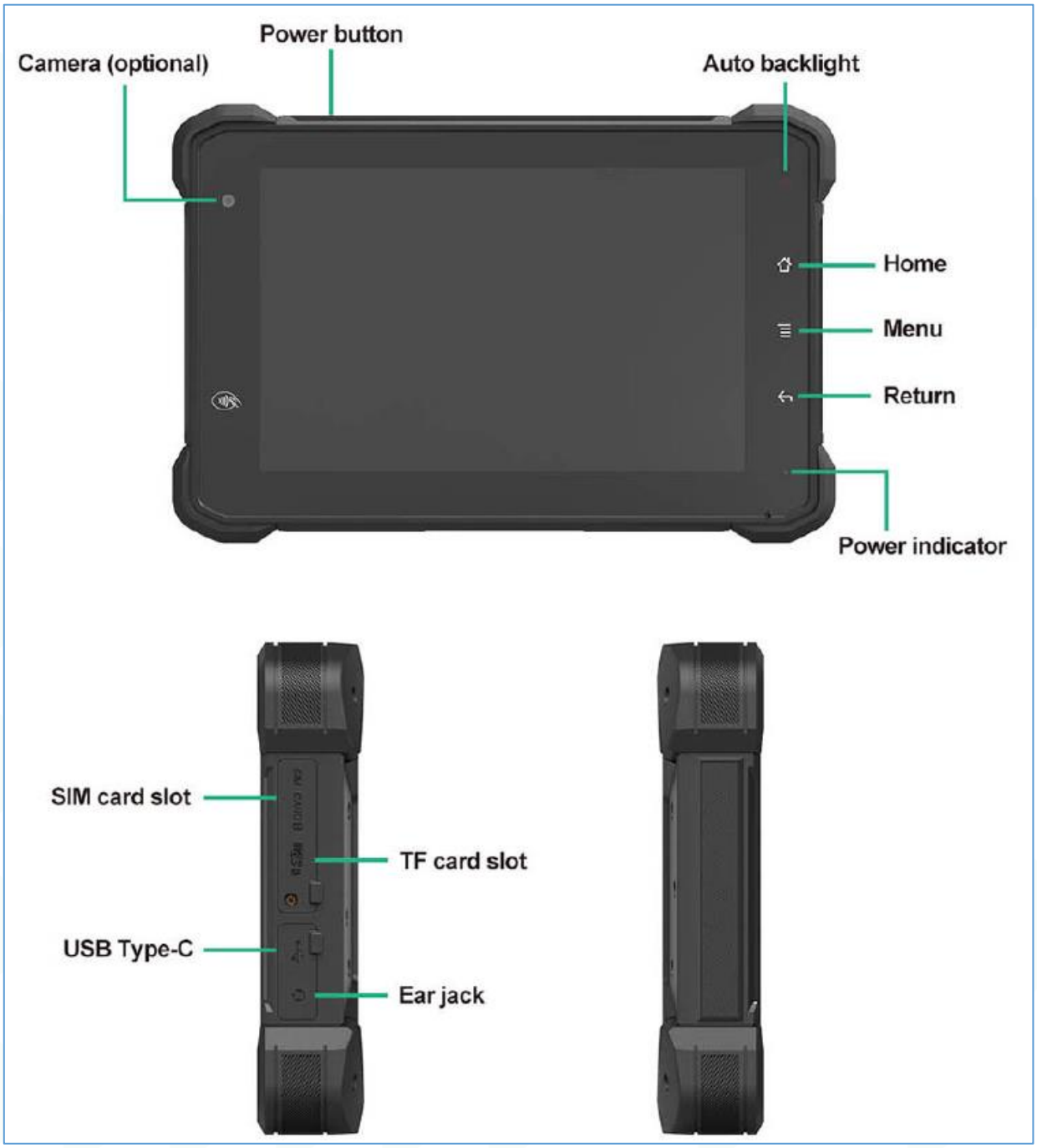
You can also go to the GPS Diagnostics screen to verify whether you have lock and speed indication on status bar.

12 Device Layout and Menus

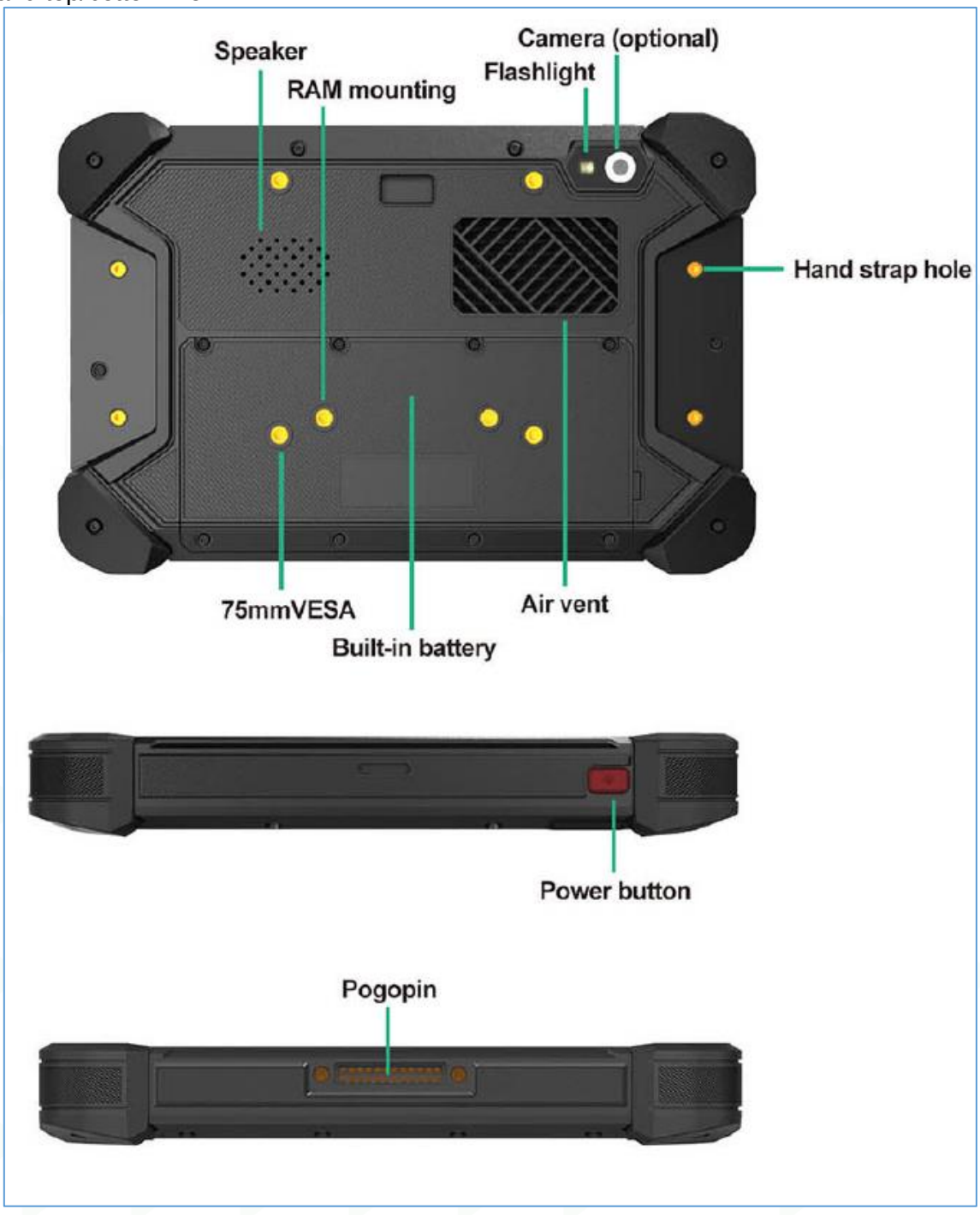
This section will give you an overview on the layout and menu structure of the Rovi IV

12.1 Device Layout

Front and Side views



Back and top/bottom view



12.2 Home Screen Layout

To verify if your installation is correct, you can monitor if the OBC Connection and Current time are correct.

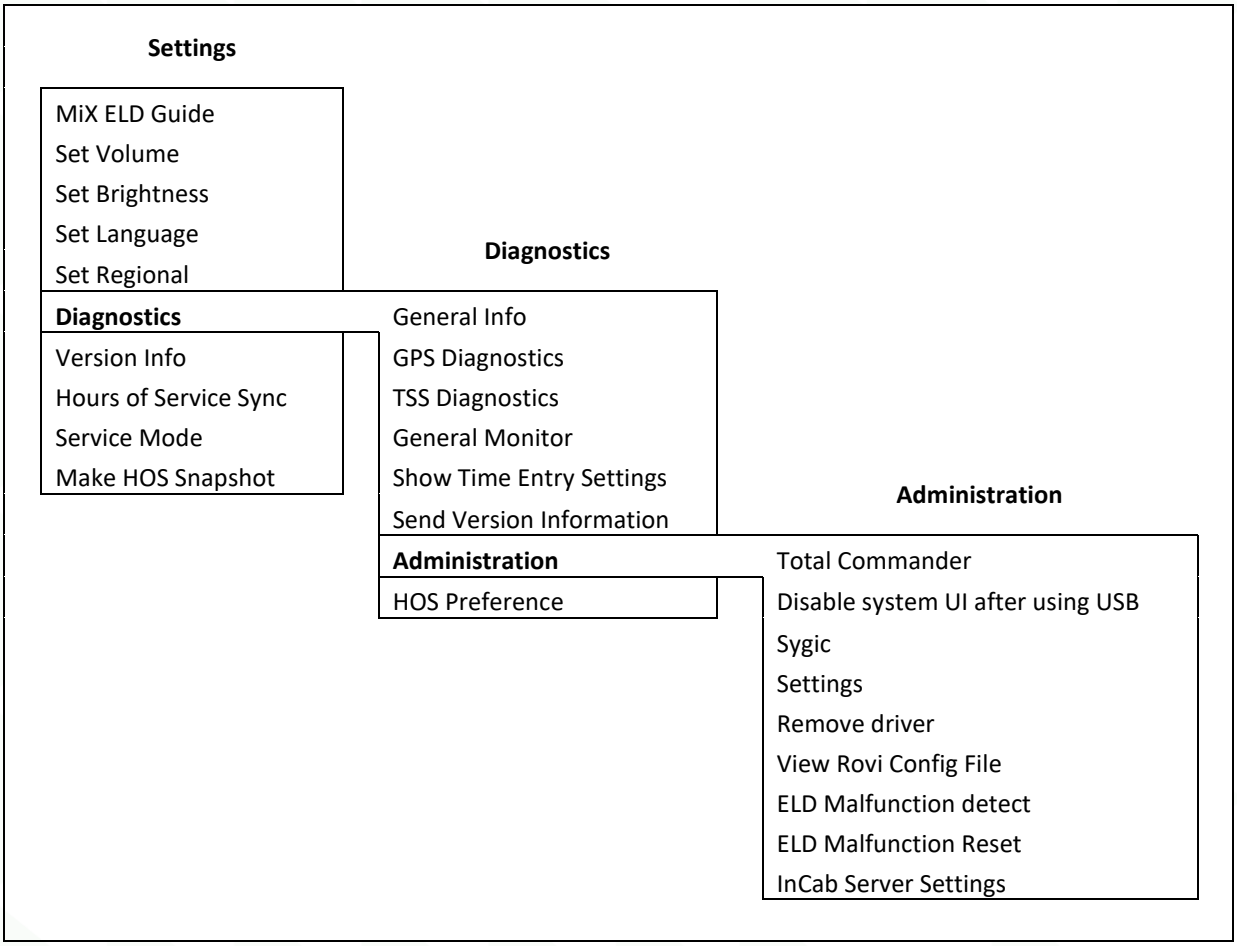
- **Modules** – these are the different modules you enable via your Rovi Configuration.
- **MiX Logo** – This will also function as “back button” when in other screens.
- **Speed Limit** – Navigation needs to be licensed and enabled then the speed limit will be displayed here else it will be blank.
- **HOS Mode** – Either ELD or AOBRD will be displayed. ELD (Electronic Logging Device) is US Legislation HOS, if disabled AOBRD (Automatic On-Board Recording Device) will be displayed.
- **Driver Name** – When HOS is enabled the current driver name will be displayed when using the RED HOS plug. The Driver Text will scroll if too long. If no driver have been logged in, “NO ACTIVE DRIVER” will be shown. If HOS is disabled, there will be no text.
- **Active** – Will be displayed if logged in driver is active driver, else not visible.
- **Time** – If your configuration have been applied correctly, the time and time zone will be displayed.
- **LTE Signal** – Indication of your SIM connection. Green bars indicate signal strength. If Grey it means no Data connection or APN issue.
- **Wi-Fi** – If Wi-Fi switched on this icon will be green.
- **OBC connection** – This is the connection to your MiX4000/6000 LTE, should be Green.
- **Settings** – To access the settings menu for Diagnostics and Administration settings.

12.3 Settings Menu

This section will give you an overview of the settings menus. To access the Settings menu, you need to select the burger menu on the top right when in **Home Screen**.

12.3.1 Menu Tree structure

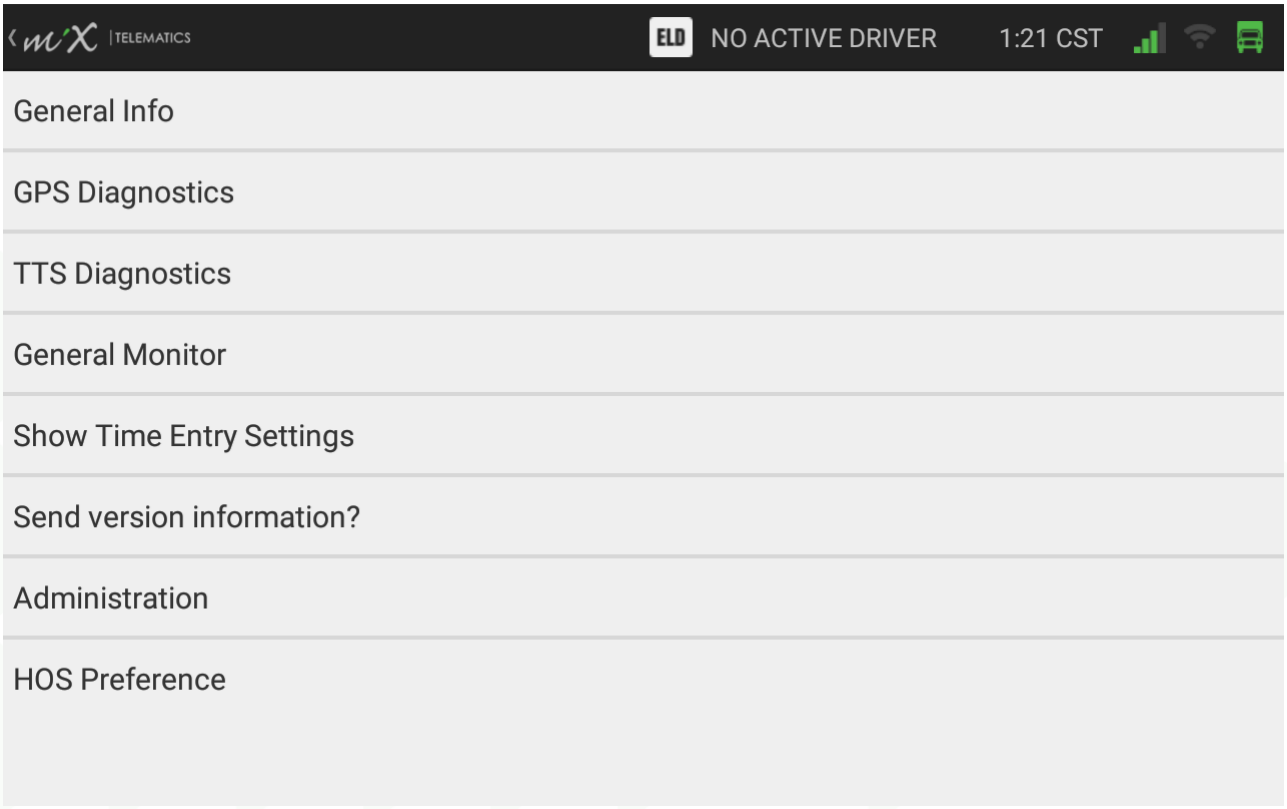
The tree below shows all the three levels of the menu structure.
Level 1 (**Settings**)
Level 2 (**Diagnostics**)
Level 3 (**Administration**) is password protected.



12.3.1.1 Settings Menu

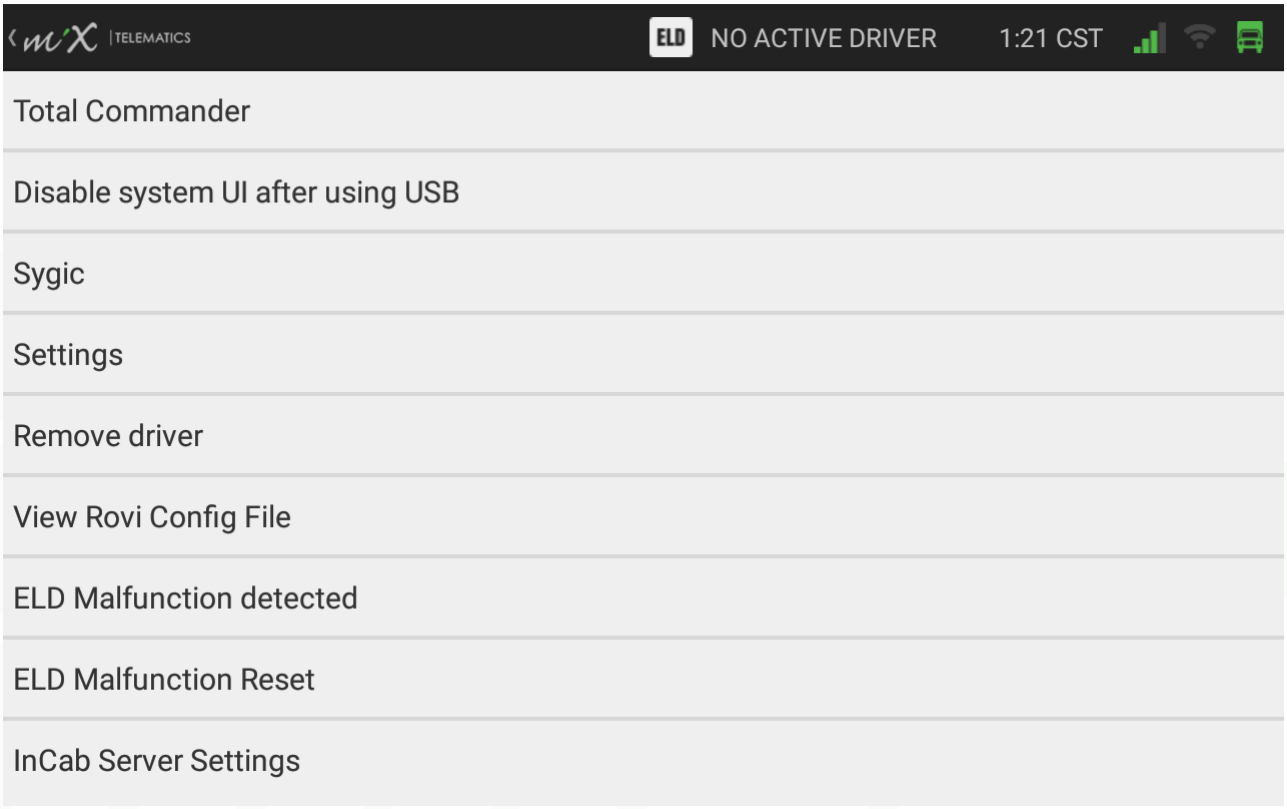
- **MiX ELD Guide** – The ELD guide. This option is only applicable for US ELD enabled device.
- **Set Volume** – Use to change the Volume settings.
- **Set Brightness** – Use to change the brightness settings.
- **Set Language** – Use to change the language (recommended to do via Rovi Configuration rather).
- **Set Regional** – Use to change between Metric and Imperial settings (recommended to do via Rovi Configuration rather)
- **Diagnostics** – Access Diagnostics Menu 12.3.1.2
- **Version Info** – Displays all version information
- **Hours of Service Sync** – to force sync your HOS
- **Service Mode** – To enter into Service Mode
- **Make HOS Snapshot** – Makes a “snapshot“ of the ELD HOS data for debugging by developers.

12.3.1.2 Diagnostics Menu



- **General Info** – Asset ID, Org ID, Dervier ID, speed, RPM, Odo, Engine Hrs, Arming status
- **GPS Diagnostics** – GPS diagnostics page
- **TTS Diagnostics** – Text To Speech Testing
- **General Monitor** – ELD vital information like VIN, malfunctions detected etc.
- **Show Time Entry Settings** – For debugging only. Shows all the Time Entry settings created in config (Only if Time Entry module is enabled).
- **Send Version Information** – Send the version information (build version etc) to Rovi Configuration page.
- **Administration** – To enter the Administration menu (controlled by password – set in Rovi Config).
- **HOS Preference** – For debugging only. Shows the HOS setting of the config on the device.

12.3.1.3 **Administration Menu** (Password Controlled)



- **Total Commander** – Android File commander
- **Disable system UI after using USB** – Enable/Disable use of USB drives
- **Sygic** – To Launch Sygic
- **Settings** – To enter Android Device Settings
- **Remove driver** – To force remove a HOS driver from the devices
- **View Rovi Config File** – To view the contents of the Rovi Config file
- **ELD Malfunction detect** – Shows detected ELD malfunction
- **ELD Malfunction Reset** – To clear ELD Malfunctions
- **InCab Server Settings** – To enter the InCab server settings