

SavvyLevel™

Android™ User Guide v1.6

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1 What is SavvyLevel?



SavvyLevel is a complete integrated remote levelling system designed for caravans, campers, 4WDs and RVs.

For use with Apple and Android smart phone/tablets that communicate to a tiny Bluetooth® device mounted inside your caravan. It is extremely easy to use and boasts an amazing accuracy down to within 0.1 degree. Once installed it only requires a simple one time level calibration.

2 Key Features

- For use with iPhone 4 and Android v4.3.1 (JellyBean) or newer smart devices.
- Designed to be powered by your RV or Caravan's power supply.
- Extremely simple to operate.
- Auto connects when device is in range.
- Data encrypted for extra security.
- Magnetic compass indicates North relative to your caravan/RV.
- Each device is 100% factory tested and calibrated.
- Includes thermal calibration and compensation resulting in superb precision of ± 0.1 degree over normal operating temperatures.
- Engineered to the highest standards using only the finest materials.
- Day/Night viewing modes.
- Supports landscape and portrait orientation.
- Zoom feature to easily obtain a perfect level.
- Inclinator style gauges indicates ± 45 degrees and ± 4.5 degrees in zoom mode.

3 Specification

- Wireless Bluetooth LE v4.0
- Device range up to 30m in the open environment.
- Accuracy better than ± 0.05 of a degree with a precision of ± 0.1 of a degree at zero calibration temperature.
- Ultra wide supply voltage from 6v - 30v @ 95% efficiency.
- Reverse polarity damage protection.
- Low operating current < 12 mA @ 12v
- Operating temperature extremes -40 to +65°C
- $\pm 45^\circ$ pitch and roll in normal operation.
- $\pm 4.5^\circ$ in zoom (x10) mode.
- Physical dimensions measures 62 x 62 x 22 mm

4 Installation

Please refer to '*Installation Guide*' sheet.

5 Download the application

'SavvyLevel' is a free app that needs to be installed on your smart phone so that it can communicate with the SavvyLevel device installed in your Caravan/RV. SavvyLevel uses Bluetooth low energy connection.

For use with:

- iPhone, iPad 4 or newer models
- Android v4.3.1 (Jelly Bean) or later.

SavvyLevel is available on the App Store and on Google Play™. Search for 'SavvyLevel', then download and install the app.



6 Connecting

SavvyLevel does not need to be paired like many other devices. All you need to do is connect to your device with the app and it will remember that connection. Please note that only one mobile device can be connected to your SavvyLevel at any one time.

With your device powered select **Connect Device** from the menu and from the list of scanned devices select **SavvyLevel**, see *Figure 1*.

There are currently two SavvyLevel variants released. The latest variant still encrypts its data but it no longer requires a passkey.

To identify which variant SavvyLevel you have all you need to do is select **About** from the menu and check your device firmware version, as shown in *Figure 2*.

For device version 1.10 and later there is **no** Passkey option.

For variants 1.9 and earlier, once you make a connection to your device, you will be presented with a **Passkey Logon** screen. Enter your device passkey. Factory default passkey setting is **000000**. See *Figure 3*.

Once logon is successful, your Smartphone will remember your passkey when re-launching the app. Please be sure you record your new passkey.

If you use more than one Smartphone to connect to your SavvyLevel then it must also use the same passkey.

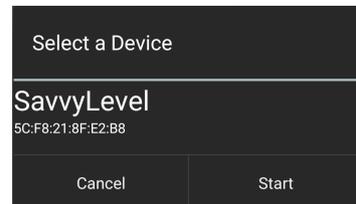


Figure 1

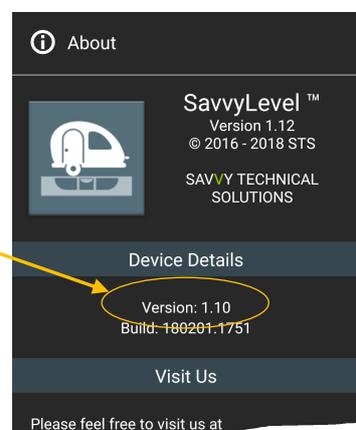


Figure 2

7 Personalising device

 If your device variant is 1.10 or greater then you can skip section *Changing your passkey*.

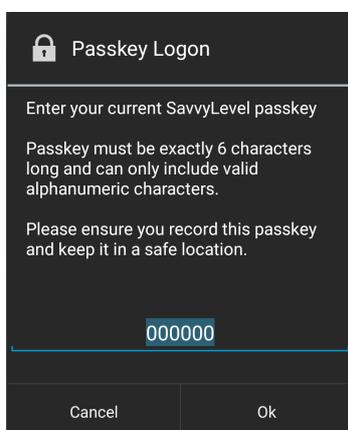


Figure 3

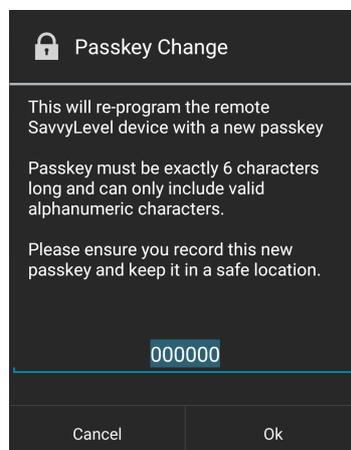


Figure 4

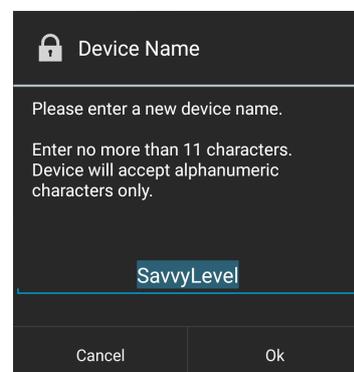


Figure 5

Changing your passkey

A passkey is used to encrypt data between your Smartphone and the SavvyLevel device. If you change your passkey then make sure you record your changes and place it in a safe location. If you forget your passkey you must reset the SavvyLevel device. See section 10 *Reset SavvyLevel to Factory Default*.

1. Select **Security** in the main menu and then select **Change Passkey**. You will see the **Passkey Change** screen. See *Figure 4*.
2. Enter a new passkey. You must enter exactly 6 numbers or characters (alphanumeric). Characters maybe upper or lower case. Special characters are not accepted.

Changing your device name

You can further customize your SavvyLevel device by changing its Bluetooth broadcast name. This can help you identify it when you have many listed Bluetooth devices.

1. Select **Security** in the main menu and then select **Change Device Name**. You will see the **Device Name** screen. See *Figure 5*.
2. Enter a new name. You may enter up to 11 numbers or characters (alphanumeric). Characters maybe upper or lower case. Special characters are not accepted but with exception to the space and underscore characters.

8 Zero Level Calibration

Zero level calibration only needs to be performed once after the SavvyLevel device is first installed. It uses sophisticated thermally compensated algorithms to achieve unprecedented precision over a wide range of operating temperatures.

For best results calibration should be performed at median temperatures around 25°C (77°F), with the SavvyLevel device temperature stabilized.

To calibrate:

1. Place your caravan/RV/4WD or trailer on level ground or at its preferred level for comfortable use.
2. Make sure your SavvyLevel device is powered.

Select **Settings** in the main menu and then select **Zero Scale**. Press OK to complete the action. See *Figure 6 and 7*.

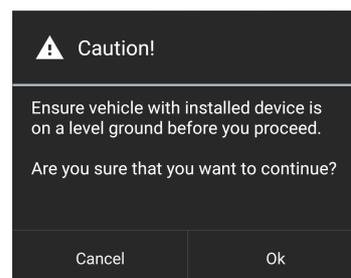


Figure 6

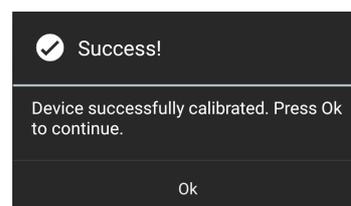


Figure 7

9 Basic Operation



Figure 8

1. Zoom scale icon. Select to change gauge scale from normal scale ($\pm 45^\circ$ tilt) to zoomed scale ($\pm 4.5^\circ$ tilt). Because zooming feature exaggerates the tilt it is very easy to visually obtain a perfect level.
2. Zoom scale indicator.
3. North – South (pitch) inclinometer gauge. Viewed from the left side of your caravan.
4. East – West (roll) inclinometer gauge. Viewed from the rear of your caravan.
5. Magnetic compass indicator. This gauge will always point towards North as it relates to the position of your caravan. This gauge can be enabled/disabled in the Settings menu.
6. Bluetooth connection status LED indicator.

- Green Connected and receiving data from the device.
- Blue Connected but not receiving any data from the device.
- Yellow Trying to connect.
- Red Disconnected.

Day/Night brightness operation



Figure 9

To change screen brightness, you need to press and hold your finger for 1 second before you swipe left or right. If you have vibrate enabled on your Smartphone device, it will vibrate to let you know when to swipe.

- To change to day mode, press and swipe from left to right.
- To change to night mode, press and swipe from right to left.

10 Reset SavvyLevel to Factory Default

 This chapter only applies to the earlier SavvyLevel variant (v1.9), in the event that the passkey is lost.

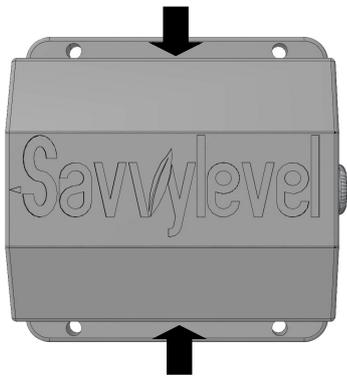


Figure 10

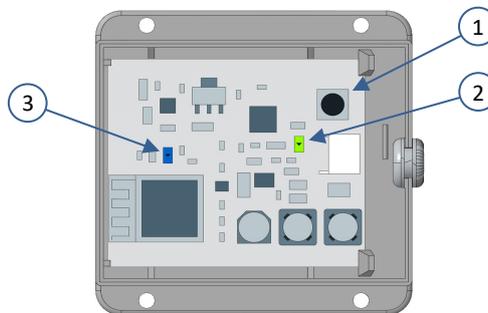


Figure 11



CAUTION! EXCEPTING THE PUSHBUTTON, PLEASE DO NOT TOUCH ANY PART OF THE PRINTED CIRCUIT BOARD, AS THIS MAY DAMAGE THE DEVICE.

If you forget your passkey you can always reset the SavvyLevel device to its factory default setting. To do this you need to gain access to your SavvyLevel device.

1. Remove the lid by gently squeezing it as shown in *Figure 10*.
2. Locate the reset button (*Figure 11 – 1*) and carefully press and hold the button until you see a green LED (*Figure 11 – 2*) flash repeatedly.
3. When the green LED returns to a quick flash every 5 seconds, the device is reset.

Default settings are:

Device Name: **SavvyLevel**

Passkey: **000000**

4. Launch your SavvyLevel app on your Smartphone and follow the procedures in section 7 *Personalizing*. Remember that the passkey is '000000'.

Don't forget to personalize your device again.

11 Troubleshooting

Q – I get very poor Bluetooth signal range.

A – The most likely cause is that there are too many signal obstructions (metallic objects) in a direct path, between your Smartphone and your SavvyLevel device.

Try to operate your Smartphone in a different location. Try opening hatches or window coverings in your caravan where your SavvyLevel is installed. Try to place your SavvyLevel in a better location. Refer to the *'Installation Guide'* sheet.

Q – My compass does not work.

A – Check that your SavvyLevel is not too close to magnetic or ferrous objects. Refer to the *'Installation Guide'* sheet.

Q – I get a message 'No data from device'.

A – Check the Smartphone status LED.

Flashes RED or YELLOW	Check if device has power. If using a small 9v battery or similar check that it is not flat. When testing the device use a new fully charged battery. Check if you are within Bluetooth range of the device. Check if there is another Smartphone already connected (Only one device can be connected to the device at any one time).
Flashes BLUE	Your passkey maybe incorrect. Change your passkey to the correct value. If you don't know your passkey, then refer to section 9 <i>Reset SavvyLevel to Factory Default.</i>

NOTES

My passkey is:

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Visit us at:

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Email support@savvytechnicalsolutions.net

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