SmartParking

V3 IGS Sensor User Manual (Internal Use Only)

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Author:

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1.1

Innovative **parking solutions**

P SMART PARKING

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1. Document Details

1.1. Sign-Off

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1.3. Distribution List

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1.4. Version Information

Version	Date	Description
1.0	30/10/2017	Initial Publication
1.1	20/12/2017	Include FCC Statement

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2. Federal Communications Commission (FCC) Statement:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) this device may not cause harmful interference and

2) this device must accept any interference received, including interference that may cause undesired operation of the device.

3. Introduction

3.1. Document Purpose

The purpose of this document is to provide the step-by step-instructions for using the SmartInstaller to program V3 IGS Sensors. No other user operations are possible as operation of the IGS sensor is entirely automatic once programmed.

3.2. Background

This document was created as part of the documentation of V3 of the SmartParking System, which includes the on-site SmartSpot and IGS VDS equipment, the 3G network connecting it to the SmartParking Cloud components, the SmartRep reporting user interface, and in this case; the system configuration capability.

3.3. SmartInstaller Overview

SmartInstaller is a SmartParking Limited application that runs on a device running both the Android Operating system and OTG (USB On The Go.), (i.e. a Samsung Galaxy 3 or later Smartphone, Galaxy Note Tablet, etc.).
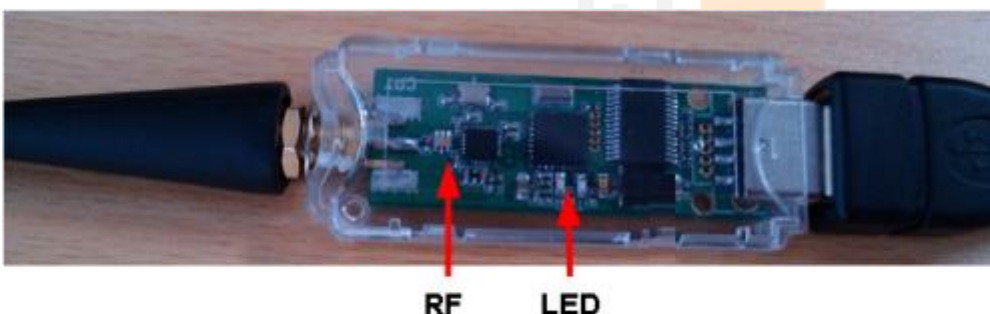
Also required is a SmartParking Limited proprietary SmartDongle capable of communication with the firmware on the IGSs.

An example using a Samsung Galaxy Smartphone is shown below:

The dongle connects to the Smartphone via the mini-USB port. Once connected, the LED on the dongle should flash and the Smartphone will state that a USB device is connected.
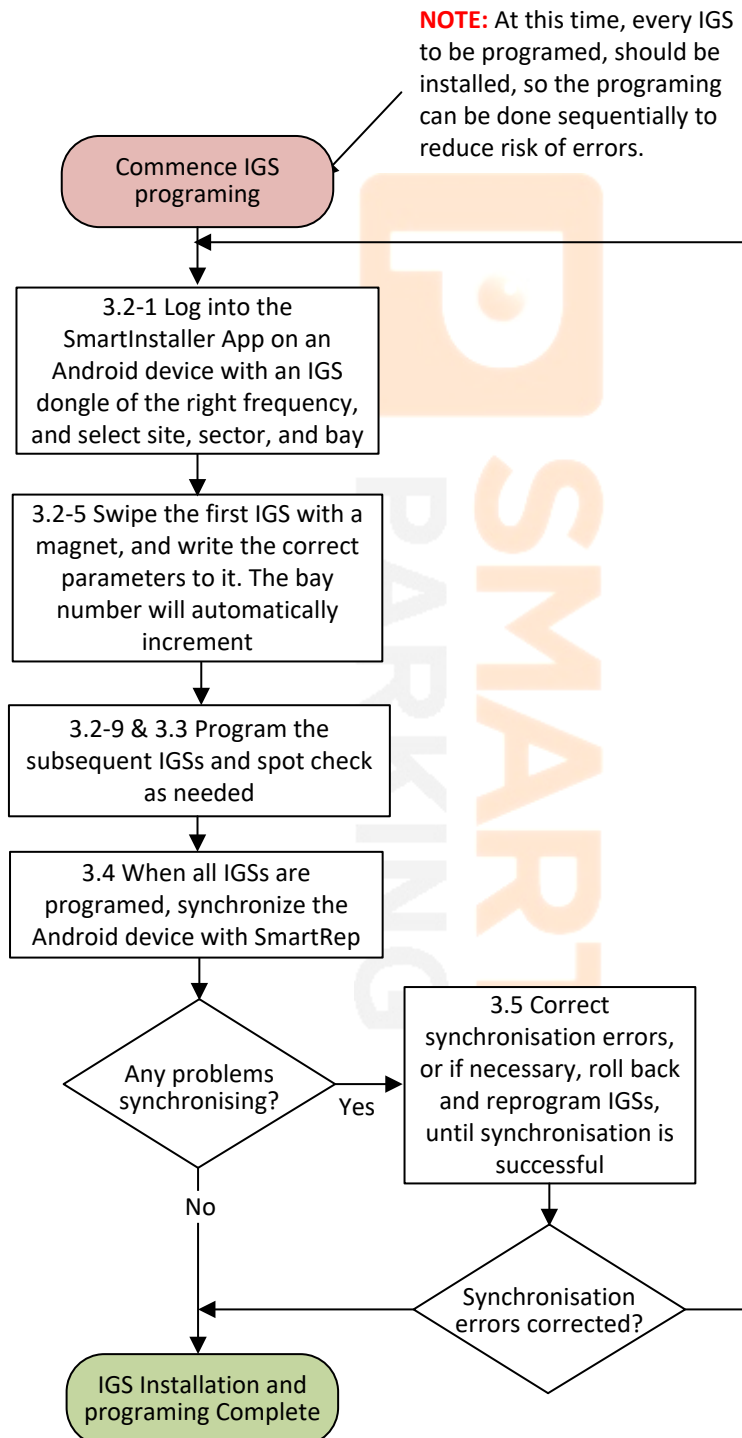
SmartDongle Functionality

- **RF –** This is the same 915MHz radio equipment and protocol as used in the IGS
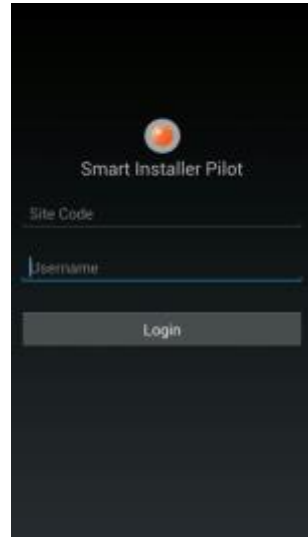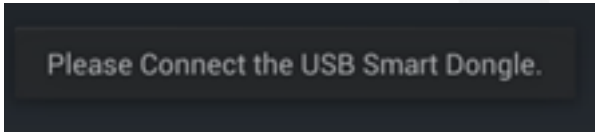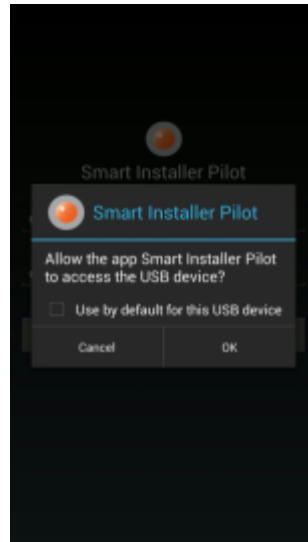- **LED –** These are the TX/RX indicators for the RF

4. IGS Programing

4.1. Flowchart

Note section references.

NOTE: At this time, every IGS to be programed, should be installed, so the programing can be done sequentially to reduce risk of errors.

Commence IGS programing

3.2-1 Log into the SmartInstaller App on an Android device with an IGS dongle of the right frequency, and select site, sector, and bay

3.2-5 Swipe the first IGS with a magnet, and write the correct parameters to it. The bay number will automatically increment

3.2-9 & 3.3 Program the subsequent IGSs and spot check as needed

3.4 When all IGSs are programed, synchronize the Android device with SmartRep

Any problems synchronising?

Yes

No

3.5 Correct synchronisation errors, or if necessary, roll back and reprogram IGSs, until synchronisation is successful

Synchronisation errors corrected?

IGS Installation and programing Complete
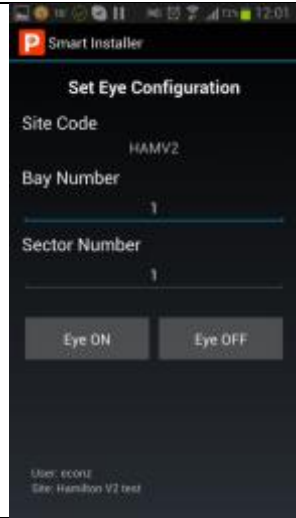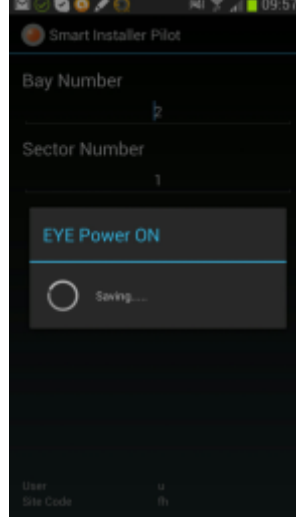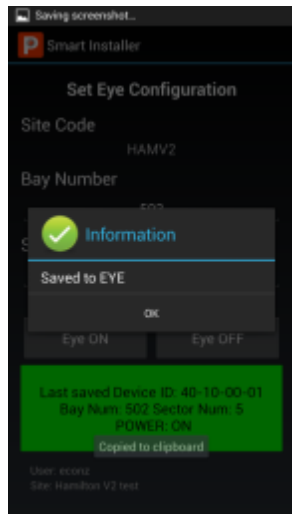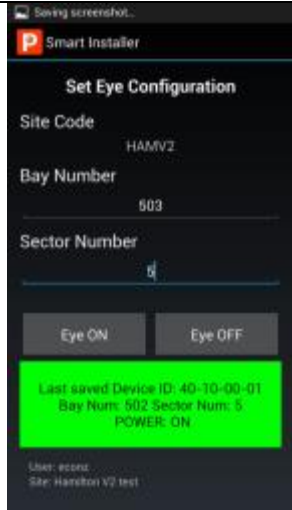
4.2. Programing IGSs

These instructions assume you are about to program IGSs installed in bays within a sector (or sectors), beginning with the first IGS (Sector X, Bay 1.)
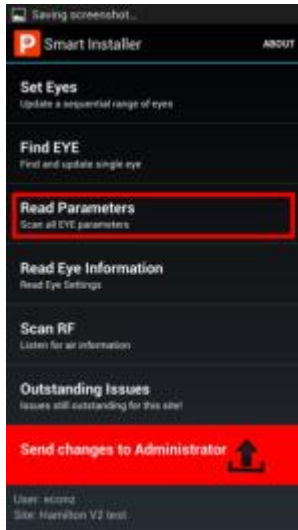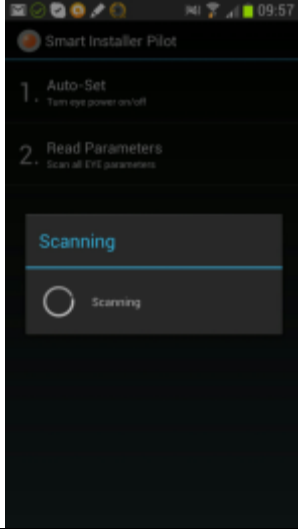
Step	Description	Picture
1.	Once the SmartInstaller hardware has initialised (a flash from the LED and a screen message confirming the USB dongle is connected), start the SmartInstaller app. The following login screen should appear. A. Type in the site code, or iif you do not know the site code, he sites address B. Type in your full name as the user name	
2.	Next click 'Login.' A pop-up may appear to allow access to the USB device. Select 'Use by default for this…,' and then click 'OK.' **NOTE:** If you fail to connect the dongle, or if there is a connection problem, the login screen and the following message will appear: Please Connect the USB Smart Dongle.	
3.	After login is complete you will be prompted to select a site: **NOTE:** SmartInstaller is synchronised with the sites available to the user who logged into the app. If the site you need isn't shown, select the 'Refresh'button (⟳) If it still fails to appear contact SmartParking SmartRep Support to be enabled for that site. Once enabled, refresh the site list again and the site should appear in the list.	

Step	Description	Picture
4.	On the next menu choose 'Set Eyes.' **NOTE:** The small print advises this option is to 'update a sequential range of eyes,' in which case some steps will be automated, however it is possible to program IGSs in any order by manually overriding the automatic parameters each time.	
5.	A. In the 'Set Eye' screen the 'Site Code' will be already filled in for you, and the bay and sector numbers will have defaulted to 1. If Sector 1 and Bay one is not where you want to start, override those numbers. B. Swipe a magnet over the IGS to get it to respond. **NOTE:** The magnet doesn't actually have to touch the plastic surface of the IGS, only be close enough that the magnetic field activates it (a faint click might be heard.) C. Choose 'Eye ON,' to write the designated parameters to the IGS.	
6.	If everything is correct (the dongle is enabled, the transceiver is facing the IGS, and from an acceptable height) you should see a message that the IGS has turned itself on and is accepting the bay and sector parameters: **NOTE:** If you fail to connect the dongle, or if there is a connection problem, the login screen and the following message will appear: Please Connect the USB Smart Dongle.	

Step	Description	Picture
7.	On completion you will hear a 'beep' (if the Android device has sound turned on,) and see the following confirmation message: **NOTE:** The device ID along with the parameters just written will also appear, with an option to save them to the clipboard if required. Click 'OK' to complete programing the IGS.	 Smart Installer **Set Eye Configuration** Site Code HAMV2 Bay Number ✓ Information Saved to EYE OK Eye ON Eye OFF Last saved Device ID: 40-10-00-01 Bay Num: 502 Sector Num: 5 POWER: ON Copied to clipboard User: econz Site: Hamilton V2 test
8.	While this has been occurring, note that the Bay number in the SmartInstaller application has automatically incremented by 1:	Smart Installer **Set Eye Configuration** Site Code HAMV2 Bay Number 503 Sector Number 5 Eye ON Eye OFF Last saved Device ID: 40-10-00-01 Bay Num: 502 Sector Num: 5 POWER: ON User: econz Site: Hamilton V2 test
9.	All that is required to continue programing the entire sector of IGSs is for the user to walk to the next IGS and press 'Eye ON'. Until such time as all the IGSs in the sector are programmed. **NOTE:** If for some reason the process fails (e.g. the dongle come loose from the USB port) the software will timeout and the login screen will appear. Simply correct the hardware issue, log in, re-enter the correct parameters and do over.	

4.3. Random Re-Checking when Programing is Complete

It is highly recommended at the end of programing each sector; at least one IGS within the sector be rechecked to confirm its configuration has the correct bay and sector number.

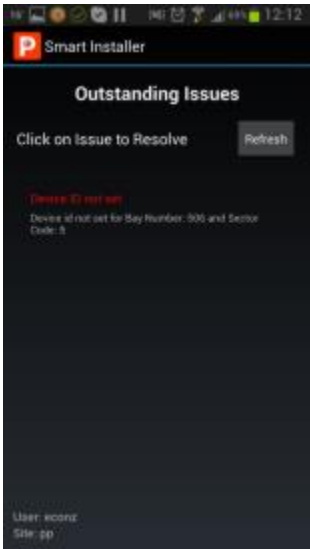| Step	Description	Picture
1.	Return to the main menu selection screen for SmartInstaller. This may require you to hit the "back" button a few times on the Android device. **NOTE:** The 'Send Changes to Administrator' option on this menu will have turned bright red as soon as one IGS has been programmed. This is explained in the next section.	
2.	D. Place the dongle over the selected IGS as if initially programing it. E. Swipe a magnet over the IGS to get it to respond. F. Choose 'Read Parameters' on the SmartInstaller screen. The 'Scanning' message should appear:	
3.	If everything is correct (the dongle is enabled, the transceiver is facing the IGS, and from an acceptable height), the parameters of the selected IGS should appear: **NOTE:** If the process fails, you will be given a warning message if the dongle cannot detect a IGS. Try different ways/timing of swiping the magnet and pressing 'Read Parameters.'	
4.	If you find any of the parameters to be incorrect – check the bays either side of this one. As the IGSs are programmed in sequence, if one randomly placed IGS is found to be in sequence and programmed correct – there is a high likelihood a majority will be programmed with the correct parameters.	

4.4.   Sending the Collected IGS Information to SmartRep

IMPORTANT: The following instructions assume the handheld Android device has at least a 3G or WIFI connection to the internet and is able to connect to the SmartRep server.
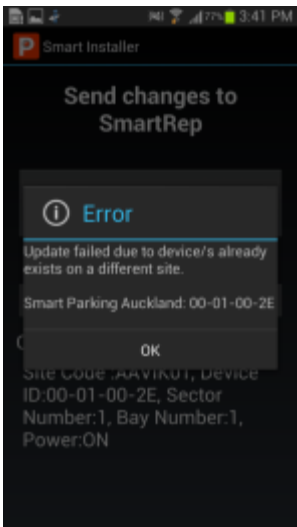
As mentioned earlier, once at least one IGS has been programed, SmartInstaller will be storing the information to be uploaded to or synchronized with, SmartRep.

This can be done as often as you like; the new parameters will override the old ones each time, but **MUST** be done when all IGSs on site have been programmed and checked.

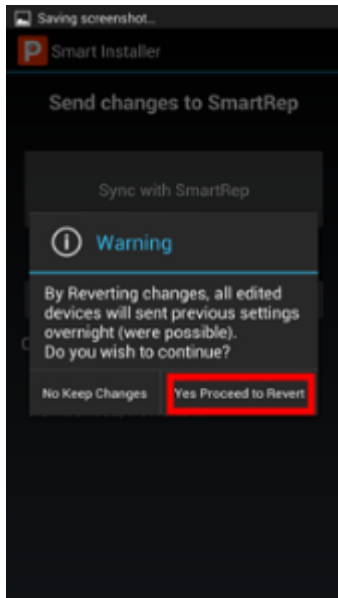| Step	Description	Picture
1.	Return to the SmartInstaller main menu, where the 'Save Changes to Administrator option will be a fiery red. It will remain so until all changes have been synchronised with SmartRep. Select that option.	
2.	On the next screen the options are to 'Sync with SmartRep,' or 'Revert Changes.'	

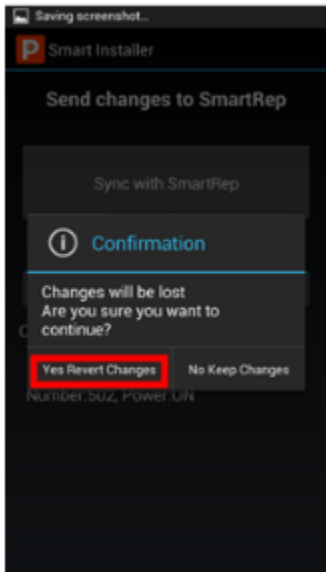| Step	Description	Picture
3.	When you press the 'Sync with SmartRep' button you will first be asked to confirm you wish to send all data with SmartRep. Sending erroneous or conflicting information to SmartRep can cause issues, so first check that: - All bays in each sector have been programed - The correct bays and number of bays were done - The map/plan given to you matches the bays and sectors programed - All IGSs were turned on - Every IGS had the right site code If confident in your programing work, choose 'Yes.' SmartRep will be updated with all the data of the IGSs programmed during this session. If SmartRep detects any issues, you will see the following screen: You must remedy these issues before proceeding. Then re-attempt synchronising with SmartRep.	

4.5.   Troubleshooting IGS Syncronisation Errors

Step	Description	Picture
1.	One issue sure to cause a problem is the inadvertent re-use of a IGS that is already registered against another site. **NOTE:** The list of ID errors in SmartInstaller is scrollable. Since the device ID is hard coded, that ID must be removed from the site information in SmartRep to correct the problem. The error received will be similar to the following:	
2.	Highlight the error and hold down the selection button to see all the detail, then advice the person doing the SmartRep part of the installation, to remove it from the old or new site information. Then try synchronising.	

4.6. Reversing IGS Changes

In some cases it may be necessary to wind back all changes so that the entire site can be rechecked even reprogramed. Reverting changes is done by choosing the 'Revert Changes' option on the 'Send Changes to SmartRep screen.

Step	Description	Picture
1.	This option tells SmartRep to update all the IGSs installed on site to 'forget' all changes made since the last synchronisation, and revert back to whatever parameters were previously stored, if any. **IMPORTANT:** This can take some time to complete, so is recommended only as a last resort.	
2.	When this option is chosen, a 'Warning' dialog will appear, to confirm you will lose all the data you have just accumulated. Choose 'Yes Proceed to Revert':	

Step	Description	Picture
3.	Since this action is irrevocable, you will then receive a final confirmation dialog. Choose 'Yes Revert Changes.' **NOTE:** that the buttons have reversed positions. All changes will be rolled back as if the work was not done on site.	

5. Appendix A – Glossary

This section contains a full list of all the terms and abbreviations used throughout this document.

Term	Description
Dongle	A small device that plugs into a computer and serves as an adapter or as a security measure to enable the use of certain software
OTG	USB On-The-Go allows USB devices such as digital audio players or mobile phones to act as hosts, so other USB devices like a USB flash drive, digital camera, mouse, or keyboard can be attached to them
SmartDongle	See Dongle
SmartSpot	Version 3.0 of the previous Zone controller – the sensor-to-internet gateway.
V3 IGS	Version 3.0 of the parking bay vehicle sensor.
WIFI	A means allowing computers, smartphones, or other devices to connect to the Internet or communicate with one another wirelessly within a particular area.

6. Appendix B – Amendment History

This section contains a full listing of all amendments made to previous versions of this document

Version	Section	Description
1.0		Initial Draft.
1.0		Initial Publication
1.1	2.	Federal Communications Commission (FCC) Statement