Leica GeoAce

Public Release Notes

Version 1.1.10

English

- when it has to be **right**

Leica Geosystems

Table of contents

1 Introduction

General information

Leica Geosystems provides free of charge software updates for the Leica GeoAce in order to provide customers with the best possible experience. This document describes the changes in the latest software release, how to use the new functionality and the various methods to upgrade the software.

These release notes may be used as an addendum to the user manual.

Current Version

- Leica GeoAce version 1.1.10
- Released September 2014

Compatibility

The Leica GeoAce base station is designed to provide GNSS reference data using the RTCM and CMR data format standards for use with Leica and third party products. Also, the Leica GeoAce can provide the reference data in the Leica proprietary mojo1 format for compatibility with other Leica Geosystems agriculture products.

2 New functionality & key changes

Overview

- GPS Receiver Firmware upgrade option (v1.1.10)
- Ethernet Stand-alone network mode (v1.1.8)
- Ethernet Spider network mode (v1.1.8)
- GSM/HSPA/Auto Modes for the Cell Modem (v1.1.8)
- Stand-alone network mode (known as “Pull” mode in Leica mojoRTK base station) (v1.0.50)

2.1 GPS Receiver Firmware update option

Overview

The Leica GeoAce supports GPS Firmware Update option. This allows the base station to upgrade its GPS firmware so the user can be assured that the GPS Receiver has the latest firmware available.

The Firmware is imbedded in Leica GeoAce Software version (v1.1.10) onwards. To upgrade the GPS Receiver Firmware first install the latest version then follow the steps below.

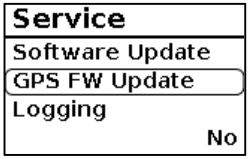
Caution

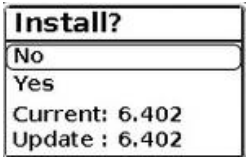
Do not turn off the Leica GeoAce while performing the GPS Firmware update.

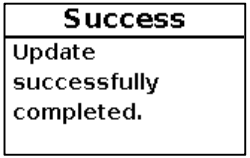
Upgrading GPS Firmware, step-by-step

To update the GPS Firmware, carry out the following steps:

1. From the main screen press  to get into the main menu
2. Use the  and  keys to select "Service" and press  to continue.
3. Use the  and  keys to select "GPS FW Update" and press  to continue.
4. The system will prompt "Install?" Use the  and  keys to select "No" to Cancel the install or "Yes" to update GPS Firmware and press  to continue.
5. The system will display a progress bar during the GPS FW update.
   NOTE: The GPS Firmware Update will take approximately 20 minutes to complete.
6. When the update has finished the system will display "Success"
7. Press  or  to return to the "Service" menu







2.2 Ethernet Stand-alone network mode (Also known as Pull Mode)

Overview

The Leica GeoAce supports Ethernet Stand-alone network mode. This allows the base station to appear as a single point network base station and the RTK system in the vehicle can connect directly to the base station as if it were a network RTK server.

The benefit of this feature is that you possibly can save data usage by using the base station via the USB/Ethernet port on the GeoAce rather than using the Cell modem.

Requirements

Before you can use Ethernet stand-alone network mode you must first have a way to get the base station connected to the internet in a way which will allow you to make an inbound connection to the base station. This can be achieved with:

- A USB to Ethernet adapter. The recommended and supported USB to Ethernet adapter supported by the Leica GeoAce is the Apple™ USB Ethernet Adapter.

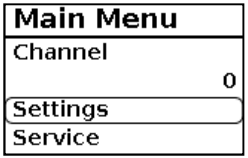
  Part Number: MC704ZM/A

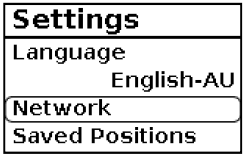
  http://store.apple.com/us/product/MC704ZM/A/apple-usb-ethernet-adapter

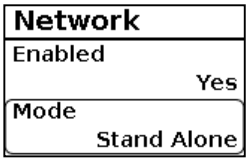
- An Ethernet connection on a network with a static public IP address and the network configured to route inbound network RTK connections to the base station.
- You need to make sure you have properly configured the USB/Ethernet port and your router to forward the incoming network RTK connections to the base station.

Enabling Ethernet Stand-alone network mode

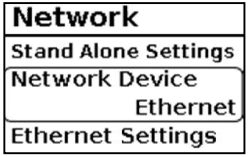
1. From the main screen press  to get into the main menu.
2. Use the  and  keys to select “Settings”. Press  to continue.
3. Use the  and  keys to select “Network”. Press  to continue.
4. In the “Network” menu use the  and  keys to view the “Enabled” setting. If “Enabled” is set to “No”:
   a. Use the  and  keys to select the “Enabled” item and press  to continue.
   b. Use the  and  keys to select “Yes” and press  to continue.







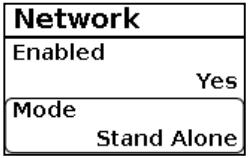
5. In the “Network” menu use the  and  keys to view the “Network Device” item. If the “Network Device” item is not “Ethernet”:



   a. Use the  and  keys to select the “Network Device” item and press  to continue.

   b. Use the  and  keys to select “Ethernet” and press  to continue.

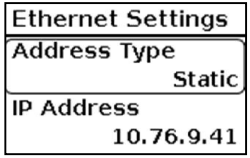
6. In the “Network” menu use the  and  keys to view the “Mode” item. If the “Mode” item is not “Stand Alone”:



   a. Use the  and  keys to select the “Mode” item and press  to continue.

   b. Use the  and  keys to select “Stand Alone” and press  to continue.

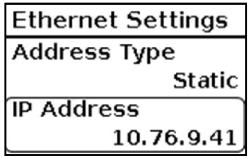
7. Use the ↓ and ↑ keys to select “Ethernet settings” and press ↵ to continue.



   a. Use the ↓ and ↑ keys to select “Address Type” and press ↵ to continue.

   b. Use the ↓ and ↑ keys to select “Static” and press ↵ to continue.

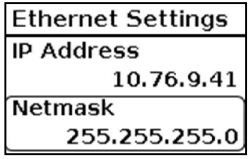
8. Use the ↓ and ↑ keys to select “IP Address” and press ↵ to continue.



   a. Use the ↓ ↑ ← → keys to set the desired “IP Address” and press ↵ to continue.

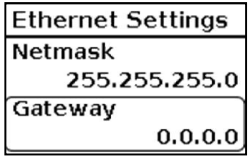
9. Use the  and  keys to select "Netmask" and press  to continue.

    a. Use the  keys to set the desired "Netmask" and press  to continue.



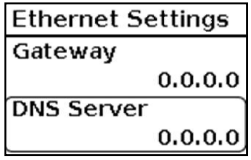
10. Use the  and  keys to select "Gateway" and press  to continue.

    a. Use the  keys to set the desired "Gateway" and press  to continue.

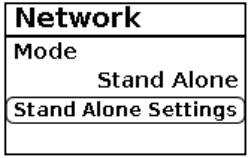


11. Use the  and  keys to select "DNS Server" and press  to continue.

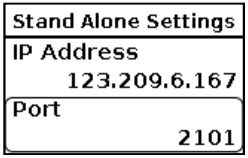
    a. Use the  keys to set the desired "DNS Server" and press  to continue.



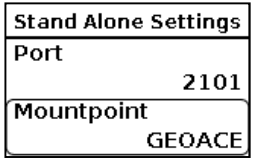
12. Once the base station is in Stand-alone mode you may want to change the default settings for this mode.



13. Use the and keys to select "Stand Alone Settings" and press to continue.
14. Use the and keys to select "Port" and press to continue.
    a. Use the keys to set the desired port number and press to continue.



15. Use the and keys to select "Mountpoint" and press to continue.
    a. Use the keys to set the desired "Mountpoint" name and press to continue.



NOTE: when you connect to the base station the mountpoint will have the data format appended to the mountpoint you entered on the GeoAce. For example, if the mountpoint on the GeoAce is set to BASE25 and the GeoAce reference format is set to MOJO1 then the mountpoint seen by the connecting RTK device will be BASE25_MOJO1

Connecting an RTK device to the stand-alone base station

To connect an RTK device to the standalone base station you use the same procedure as if you were connecting to a network RTK server:

- On your RTK device, enter the IP address of the standalone network base station. Depending on your network configuration this could be the IP address of your router.
- Enter the port number that you set on the standalone base station
- The user name to access the base station will be the base station article number
- The password to access the base station will be the base station serial number
- When you try and connect there will be only one stream to select. The name of the mount point will be the name you set with the data format appended (see the note just above in the previous section)

*NOTE: the article and serial number of the base station can be found in the menu under **Service → System Info → Serial Number.***

*For example, if the serial number is reported as 796789.1245056 then the article number is **796789** and the serial number is **1245056***

2.3 Ethernet Spider network mode (Also known as Push Mode)

Overview

The Leica GeoAce supports Spider network mode. This allows the base station to act as part of a CORS (continuously operating reference station) network. In this mode, users running RTK or DGPS systems in the field connect to the Spider Server. Depending on how the Spider Server is configured, the data from the server may simply be the data from the single base station or network data from many base stations (including the base station running in spider mode)

The benefit of this feature is that a networked base is capable of providing correction information to a much larger area because the vehicles in the field receiving the data can utilize the cell network to receive the data rather than the built in radios which can have problems in challenging terrain and environments. A networked base can also be used to extend a CORS network and provide high quality corrections to a wider area.

Requirements

Before you can use Ethernet Spider network mode you must first have a way to get the base station connected to the internet. This can be achieved with:

- A USB to Ethernet adapter. The recommended and supported USB to Ethernet adapter supported by the Leica GeoAce is the Apple™ USB Ethernet Adapter.

  Part Number: MC704ZM/A

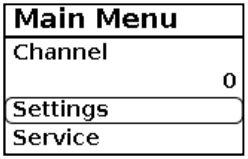
  http://store.apple.com/us/product/MC704ZM/A/apple-usb-ethernet-adapter

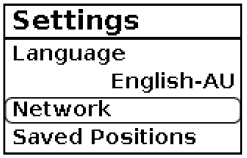
Contact your dealer or Leica Geosystems representative for assistance with these requirements.

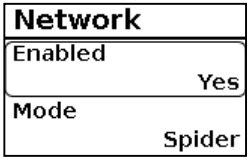
Refer to your RTK network host for the appropriate network settings.

Enabling Ethernet Spider network mode

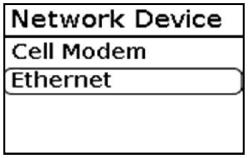
1. From the main screen press  to get into the main menu.
2. Use the  and  keys to select “Settings”. Press  to continue.
3. Use the  and  keys to select “Network”. Press  to continue.
4. In the “Network” menu use the  and  keys to view the “Enabled” setting. If “Enabled” is set to “No”:
    a. Use the  and  keys to select the “Enabled” item and press  to continue.
    b. Use the  and  keys to select “Yes” and press  to continue.







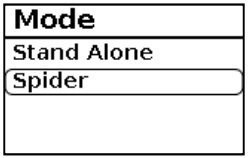
5. In the “Network” menu use the  and  keys to view the “Network Device” item. If the “Network Device” item is not “Ethernet”:



   a. Use the  and  keys to select the “Network Device” item and press  to continue.

   b. Use the  and  keys to select “Ethernet” and press  to continue.

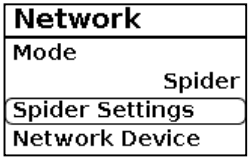
6. In the “Network” menu use the  and  keys to view the “Mode” item. If the “Mode” item is not “Spider”:



   a. Use the  and  keys to select the “Mode” item and press  to continue.

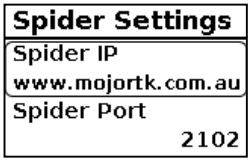
   b. Use the  and  keys to select “Spider” and press  to continue.

7. Once the base station is in Spider mode you may want to change the default settings for this mode.



   a. Use the  and  keys to select "Spider Settings" and press  to continue.

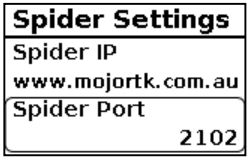
8. All the settings under Spider Settings should be set to the settings provided by your RTK Network provider.



   Use the  and  keys to select "Spider IP" and press  to continue.

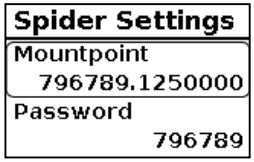
   a. Use the  keys to set the desired "Spider IP" and press  to continue.

9. Use the  and  keys to select “Spider Port” and press  to continue.



   a. Use the     keys to set the desired port number and press  to continue.

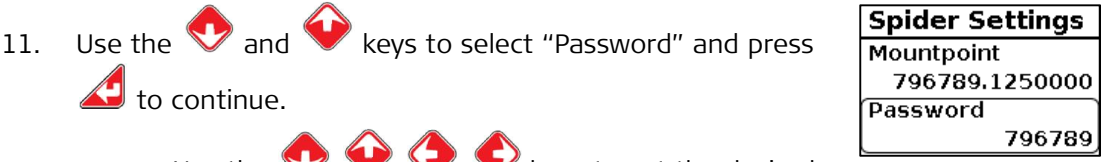
10. Use the  and  keys to select “Mountpoint” and press  to continue.



   a. Use the     keys to set the desired Mountpoint name and press  to continue.

11. Use the and keys to select “Password” and press to continue.

    a. Use the     keys to set the desired Password and press  to continue.



NOTE: The Spider Settings are provided by your RTK Network Host.

Connecting an RTK device to the Spider Network

To connect an RTK device to the Spider Network, perform the following steps:

- On your RTK device, enter the IP address of the Spider network
- Enter the port number required for the Spider network
- Enter the user name to access the Spider Network
- Enter the password to access the Spider Network
- After the RTK device has connected to the Spider Network, select the required stream to connect to

2.4 GSM/HSPA/Auto Modes for the Cell Modem

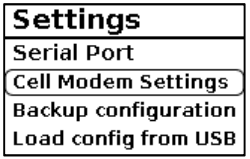
Overview

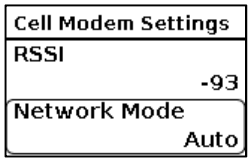
The Leica GeoAce supports GSM/HSPA/Auto Modes for the Cell Modem. This allows the base station to change from a HSPA Cell Modem network to a GSM Cell modem network.

The benefit of this feature is that you can change the Mode that the Cell Modem is using. This can be used to force the base station to use a particular mode which may have better cell coverage.

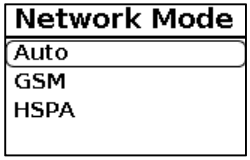
Changing the Cell Modem Settings, step-by-step

1. From the main screen press  to get into the main menu.
2. Use the  and  keys to select “Settings”. Press  to continue.
3. Use the  and  keys to select “Cell Modem Settings”. Press  to continue.
4. Use the  and  keys to select “Network Mode”. Press  to continue.





5. Use the  and  keys to select either “Auto”, “GSM” or “HSPA”. Press  to continue
6. Use  to Escape back to Main Screen



3 Cell Modem Network Modes

3.1 Cell Modem Stand-alone Network Mode (Also known as Pull Mode)

Overview

The Leica GeoAce supports Stand-alone network mode. This allows the base station to appear as a single point network base station and the RTK system in the vehicle can connect directly to the base station as if it were a network RTK server.

The benefit of this feature is that you can access the base station via the cell network rather than using the standard radio which can have problems in challenging terrain and environments.

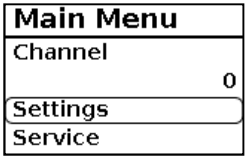
Requirements

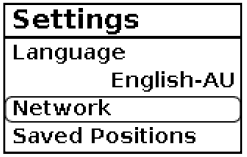
Before you can use stand-alone network mode you must first have a way to get the base station connected to the internet in a way which will allow you to make an ***inbound connection to the base station***. This can be achieved with:

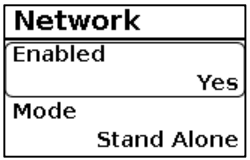
- a SIM card for the base station with a static public IP address, ***OR***
- base/rover pairs of SIM cards which have static private IP addresses which are on the same subnet

Enabling Cell Modem Stand-alone network mode

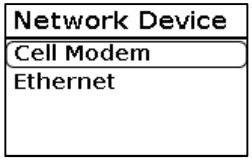
1. From the main screen press  to get into the main menu.
2. Use the  and  keys to select “Settings”. Press  to continue.
3. Use the  and  keys to select “Network”. Press  to continue.
4. In the “Network” menu use the  and  keys to view the “Enabled” setting. If “Enabled” is set to “No”:
   a. Use the  and  keys to select the “Enabled” item and press  to continue.
   b. Use the  and  keys to select “Yes” and press  to continue.







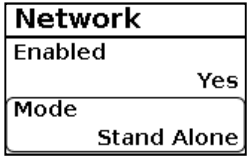
5. In the “Network” menu use the and keys to view the “Network Device ” item. If the “Network Device” item is not “Cell Modem”:



   a. Use the and keys to select the “Network Device” item and press to continue.

   b. Use the and keys to select “Cell Modem” and press to continue.

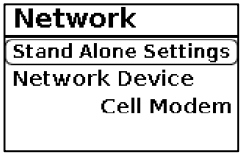
6. In the “Network” menu use the and keys to view the “Mode” item. If the “Mode” item is not “Stand Alone”:



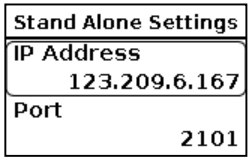
   a. Use the and keys to select the “Mode” item and press to continue.

   b. Use the and keys to select “Stand Alone” and press to continue.

7. Once the base station is in Stand-alone mode you may want to change the default settings for this mode. Use the  and  keys to select "Stand Alone Settings" and press  to continue.

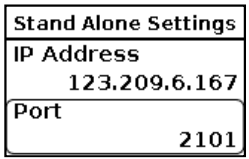


8. The first item in the "Stand Alone Settings" menu is the IP address. This is for information only and should be noted for later use when you configure your RTK device to connect to the base station.

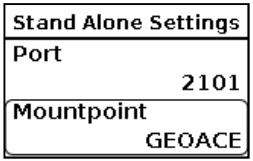


9. Use the  and  keys to select "Port" and press  to continue.

    a. Use the  keys to set the desired port number and press  to continue.



10. Use the  and  keys to select "Mountpoint" and press  to continue.



    a. Use the  keys to set the desired Mountpoint name and press  to continue.

NOTE: *when you connect to the base station the mountpoint will have the data format appended to the mountpoint you entered on the GeoAce. For example, if the mountpoint on the GeoAce is set to BASE25 and the GeoAce reference format is set to MOJO1 then the mountpoint seen by the connecting RTK device will be BASE25_MOJO1*

Connecting an RTK device to the standalone base station

To connect an RTK device to the standalone base station you use the same procedure as if you were connecting to a network RTK server:

- On your RTK device, enter the IP address of the standalone network base station. Depending on your network configuration this could be the IP address of your router.
- Enter the port number that you set on the standalone base station
- The user name to access the base station will be the base station article number
- The password to access the base station will be the base station serial number
- When you try and connect there will be only one stream to select. The name of the mount point will be the name you set with the data format appended (see the note just above in the previous section)

*NOTE: the article and serial number of the base station can be found in the menu under **Service → System Info → Serial Number.***

*For example, if the serial number is reported as 796789.1245056 then the article number is **796789** and the serial number is **1245056***

3.2 Cell Modem Spider Network Mode (Also known as Push Mode)

Overview

The Leica GeoAce supports Spider network mode. This allows the base station to act as part of a CORS (continuously operating reference station) network. In this mode, users running RTK or DGPS systems in the field connect to the Spider Server. Depending on how the Spider Server is configured, the data from the server may simply be the data from the single base station or network data from many base stations (including the base station running in spider mode)

The benefit of this feature is that a networked base is capable of providing correction information to a much larger area because the vehicles in the field receiving the data can utilize the cell network to receive the data rather than the built in radios which can have problems in challenging terrain and environments. A networked base can also be used to extend a CORS network and provide high quality corrections to a wider area.

Requirements

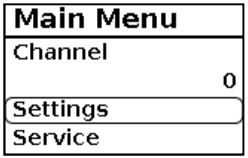
Before you can use Cell Modem Spider network mode you must first have a way to get the base station connected to the internet. To do this, a SIM card with an active data plan is required for the base station.

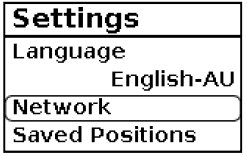
Contact your dealer or Leica Geosystems representative for assistance with these requirements.

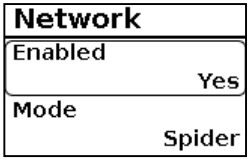
Refer to your RTK network host for the appropriate network settings.

Enabling Cell Modem Spider network mode

1. From the main screen press  to get into the main menu.
2. Use the  and  keys to select “Settings”. Press  to continue.
3. Use the  and  keys to select “Network”. Press  to continue.
4. In the “Network” menu use the  and  keys to view the “Enabled” setting. If “Enabled” is set to “No”:
   a. Use the  and  keys to select the “Enabled” item and press  to continue.
   b. Use the  and  keys to select “Yes” and press  to continue.



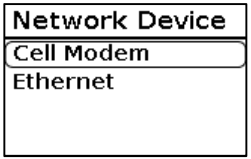




5. In the “Network” menu use the  and  keys to view the “Network Device” item. If the “Network Device” item is not “Cell Modem”:

   a. Use the  and  keys to select the “Network Device” item and press  to continue.

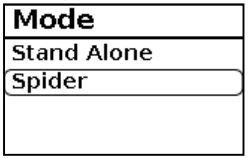
   b. Use the  and  keys to select “Cell Modem” and press  to continue.



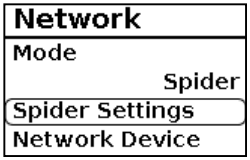
6. In the “Network” menu use the  and  keys to view the “Mode” item. If the “Mode” item is not “Spider”:

   a. Use the  and  keys to select the “Mode” item and press  to continue.

   b. Use the  and  keys to select “Spider” and press  to continue.



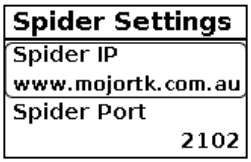
7. Once the base station is in Spider mode you may want to change the default settings for this mode. Use the  and  keys to select “Spider Settings” and press  to continue.



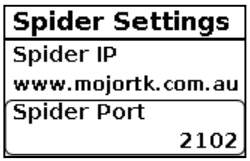
8. All the settings under Spider Settings should be set to the settings provided by your RTK Network provider.

   a. Use the  and  keys to select “Spider IP” and press  to continue.

   b. Use the     keys to set the desired “Spider IP” and press  to continue.



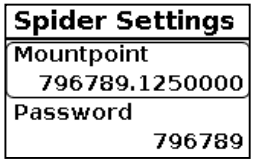
9. Use the  and  keys to select “Spider Port” and press  to continue.



a. Use the keys to set the desired port number and press to continue.

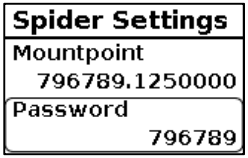
10. Use the and keys to select “Mountpoint” and press to continue.

a. Use the keys to set the desired Mountpoint name and press to continue.



11. Use the and keys to select “Password” and press to continue.

a. Use the keys to set the desired Password and press to continue.



NOTE: The Spider Settings are provided by your RTK Network Host.

Connecting an RTK device to the Spider Network

To connect an RTK device to the Spider Network, perform the following steps:

- On your RTK device, enter the IP address of the Spider network
- Enter the port number required for the Spider network
- Enter the user name to access the Spider Network
- Enter the password to access the Spider Network
- After the RTK device has connected to the Spider Network, select the required stream to connect to

4 Upgrading the Leica GeoAce software

4.1 Upgrading Software from Virtual Wrench™

General information

A new version of software, if available, may be obtained by downloading from Virtual Wrench™. To do this the base station must have a working SIM card installed or an internet connection via Ethernet.

NOTE: Ethernet is only available from version 1.1.8 onwards

Caution

Do not turn off the Leica GeoAce while performing the software upgrade.

Downloading software, step-by-step

To download a new version of software from Virtual Wrench™, carry out the following steps:

1. From the main screen press  to get into the main menu
2. Use the  and  keys to select “Service” and press  to continue.
3. Use the  and  keys to select “Software Update” and press  to continue.

4. Use the  and  keys to select “Update via VW” and press  to continue.

5. If you are not already connected to Virtual Wrench you will see a “Connect” screen. Select “Yes” and press  to continue.

6. If there are no new updates on Virtual Wrench you will be given the option to re-install the current version. If there is an updated version you will be given the option to continue with the upgrade. The screen will show you the currently installed version and the version to be installed. Select “Yes” and press  to continue.

7. The system will start installing the upgrade. Do not turn the base station off while this process is underway.

4.2 Upgrading Software via USB Flash Drive

General information

A new (or older) version of software may be installed from a USB Flash Drive.

Visit www.VirtualWrench.com to obtain the latest software download and copy to a USB Flash Drive.

Caution

Do not turn off the Leica GeoAce, or remove the USB Flash Drive, while performing the software upgrade.

Upgrading software with a USB Flash Drive, step-by-step

To upgrade the Leica GeoAce software via USB Flash Drive, carry out the following steps:

1. Once you have downloaded the software installation file, copy it to the uppermost folder of a USB flash drive.
2. Insert the USB flash drive into the base station and turn the base station on
3. Once the base station has started up and is on the main screen press  to get into the main menu
4. Use the  and  keys to select “Service” and press  to continue.

5. Use the  and  keys to select “Software Update” and press  to continue.
6. Use the  and  keys to select “Update via USB” and press  to continue.
7. If there is more than one version of software on the USB flash drive you will be asked to select which version you want to install. Press  to continue.
8. You will be asked to confirm if you want to upgrade, re-install or downgrade the software depending on the version you have chosen to install the current version that is installed.
9. Use the  and  keys to select “Yes” and press  to continue.
10. The system will start installing the upgrade. Do not turn the base station off while this process is underway.
11. Once the installation is complete, the base station will restart.

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Original text

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- when it has to be **right**

Leica Geosystems