Getting Started with the Leica Geosystems GG04 plus

Leica Geosystems
myWorld

myWorld is design to provide the customer a landing page to easily track all hardware and software purchased from Leica Geosystems. Once products are registered you have access to all manuals, GNSS firmware and software downloads. Please check this resource periodically for new releases.

Account Registration

1. Locate the delivery note that accompanies the equipment. On this delivery note please locate your customer number (if you are a direct customer of Leica Geosystems) as this will be necessary to register. If you purchased from a local Leica Distributor you will only need the Article Number and Serial Number or the Equipment Number of the hardware or software purchased to start the registration process.
2. Next visit the Leica MyWorld portal located here: Leica MyWorld and click on the “Registration” link in the “Log on” window.
3. Enter your contact information and requested hardware/software information to initiate the registration process.
4. Once complete you will receive your password associated with your account via email.

Leica Geosystems
myWorld

Add Products

1. Once logged into the MyWorld portal you can enter your products in the “myProducts” section. Click on Add Product located towards the bottom of the page.
2. Once the Add Product dialog box opens select what type of product you are entering, either hardware or software.
3. For hardware enter the serial number of the device as well as the article/part number or the equipment number. These are on the delivery note as mentioned above or can be found on the device itself. Software tied to a Zeno 5 or Zeno 20 will automatically be associated with the hardware product. Once one of these devices is entered into myProducts you can see the software, GNSS options and CCP’s of the device.
4. For software, select the software tab and then enter the entitlement ID for each component.
5. Complete this process for all components.

Leica GG04 plus Smart Antenna

Scalable GNSS for Android, iOS or Windows Devices

Leica Geosystems GG04 plus Smart Antenna

555 channel GNSS board with multi-constellation support to provide high-accuracy measurements in difficult environments

- GPS: L1, L2, L2C, L5
- Glonass: L1, L2
- BeiDou: B1, B2, B3
- Galileo: E1, E5a, E5b, Alt-BOC, E6
- QZSS
- SBAS
- L-Band

Leica Geosystems GG04 plus Smart Antenna

Advanced multi-path mitigation processing to provide reliable positioning where you work

Leica Geosystems GG04 plus Smart Antenna

Scalable accuracy to meet the customer’s needs in the field.

- Sub-meter
- 60cm or better
- 40cm or better
- 10cm or better
- 1cm

Leica Geosystems GG04 plus Smart Antenna

Field replaceable battery with 7+ hours of life

Leica Geosystems GG04 plus Smart Antenna

IP68 rating to work in harsh environments

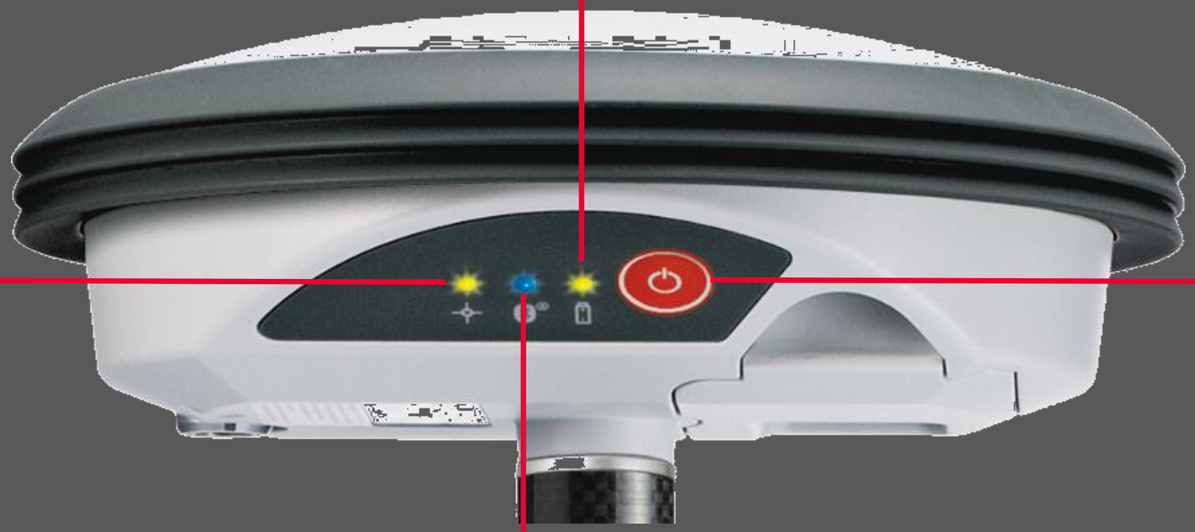
Leica Geosystems GG04 plus Smart Antenna

Bluetooth connectivity between the GG04 plus and an Android, iOS or Windows device

Leica Geosystems GG04 plus Smart Antenna

Power LED

- Off: Power is off
- Green: 100% - 20%
- Red: 20% - 5%
- Flashing red: <5%



Position LED

- Off: No position computed
- Yellow: Position computed

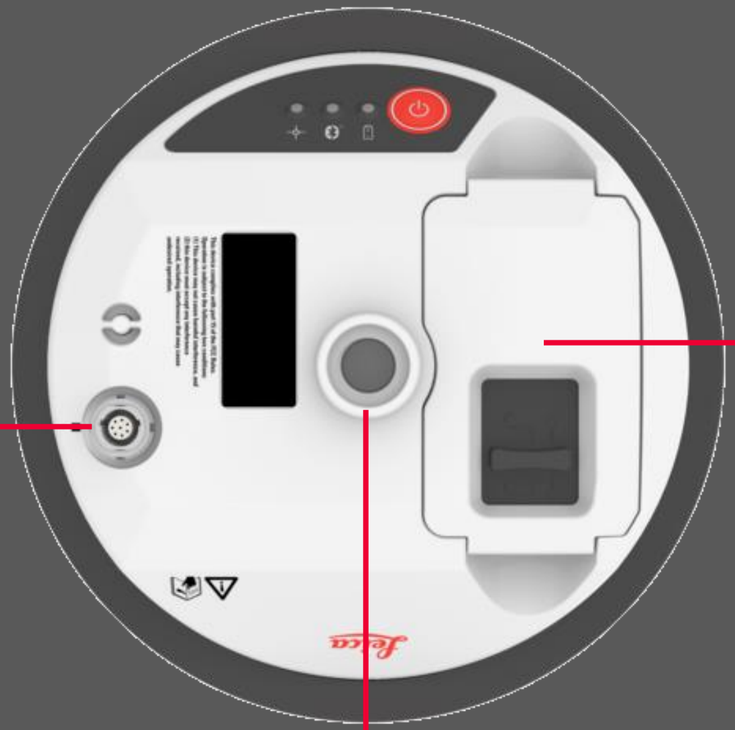
Power Button

- Press and hold for ~2 seconds to power on/off

Bluetooth LED

- Green: Bluetooth is ready to be connected
- Blue: Connection established

Leica Geosystems GG04 plus Smart Antenna



Lemo Port

Battery Compartment

Fits a 5/8” Pole or Backpack Mount

Leica Geosystems
Available Correction Sources

- How the GG04 plus can achieve the stated accuracy

Satellite Based Corrections	Internet Based Corrections	UHF Radio Corrections	Post-Processed Corrections
			
WAAS Sub-meter PPP 60cm or better 10cm or better	DGNSS 40cm or better RTK 1cm	DGNSS 40cm or better RTK 1cm	Code Solution 40cm or better Phased Fixed 1cm

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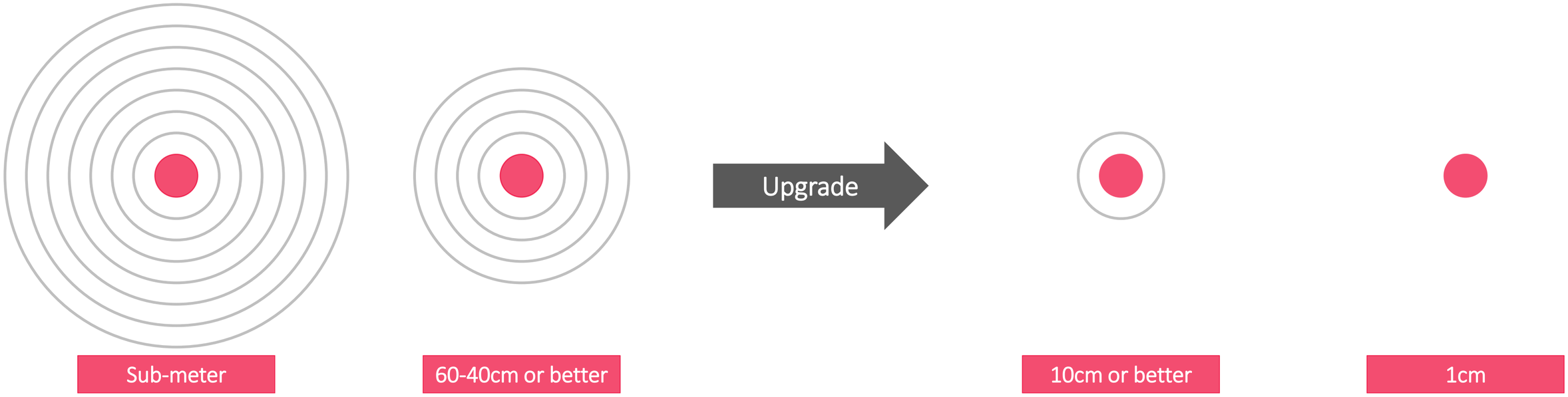
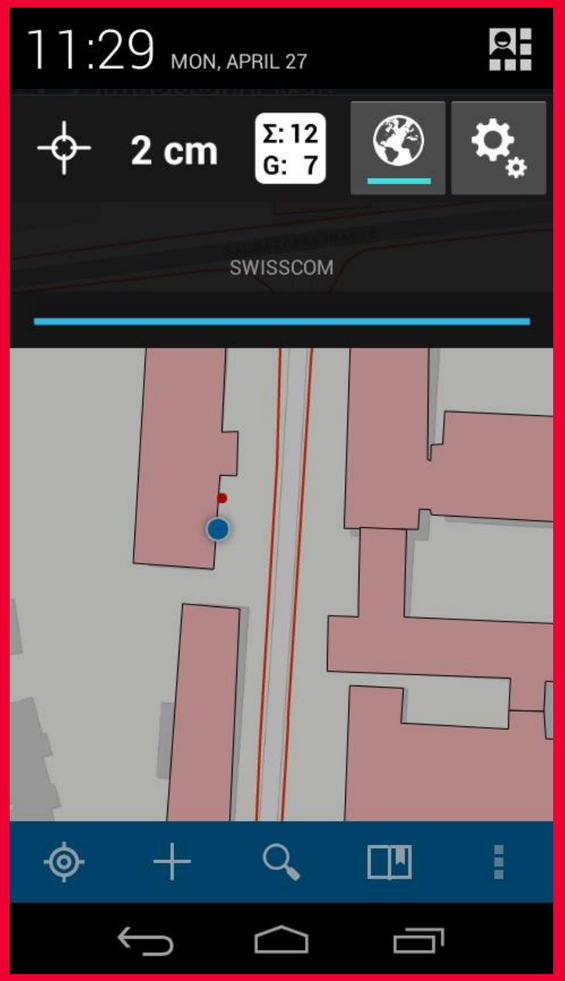
Leica GG04 plus

- Upgrade accuracy and GNSS constellation support of the GG04 plus
  - If you first purchase a GG04 plus for sub-meter to 40cm or better accuracy, you can upgrade it to a 10cm to 1cm accuracy receiver
  - The GG04 plus can be upgraded remotely, after the initial purchase





Leica Zeno Connect

Installation & Bluetooth Connection

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Zeno Connect - Installation

- Download Leica Zeno Connect from the Google Play Store or Apple App Store
  - Android:
    - Once you tap install, the store will prompt you to accept access
    - When you first open Zeno Connect, allow mock locations.
      - Can be found in the Developer Options
  - iOS:
    - When you first open Zeno Connect, allow it to use your location

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Zeno Connect - Bluetooth Connection

- Android:
  - To connect your GG04 plus, power on the receiver as well as the Android device.
  - Start Zeno Connect and you will be prompted with a pairing request by Android. Tap OK.
  - If your version of Android does not prompt you for a pairing, you can pair it in the Android Settings>Connections>Bluetooth menu. The pairing code, if prompted, is: 0000
  - Once connected, it will state you have an active connection to the GG04 plus within Zeno Connect>Antenna.

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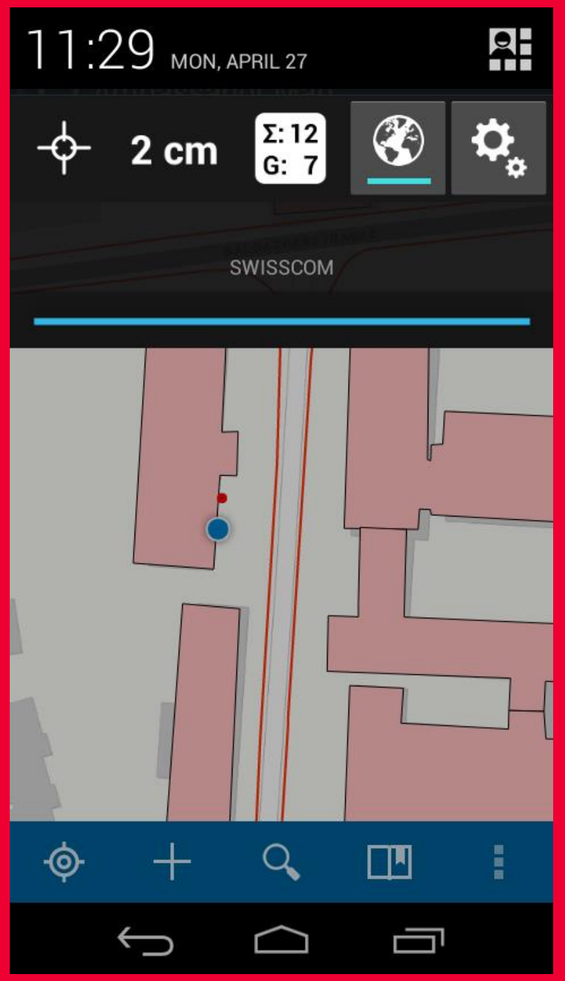
Zeno Connect - Bluetooth Connection

- iOS:
  - To connect your GG04 plus, power on the receiver as well as the Apple device.
  - Navigate to Settings>Bluetooth. Toggle on the bluetooth, if not already completed.
  - Tap on your GG04 plus receiver to establish a connection. Once connected, it will state “Connected” in My Devices.
  - Start Zeno Connect. Zeno Connect will report an active connection to the GG04 plus within Zeno Connect>Antenna.



Leica Zeno Connect

An Overview

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Zeno Connect

Leica Zeno Connect brings the power of a Leica GNSS Smart Antenna to your mobile device. Simply connect and configure your antenna via Bluetooth and start using your favorite data capture app. Collecting high accuracy geospatial data on your smartphone or tablet has never been easier.

- Available for Android and Apple devices
  - No cost download via Google Play Store & Apple App Store

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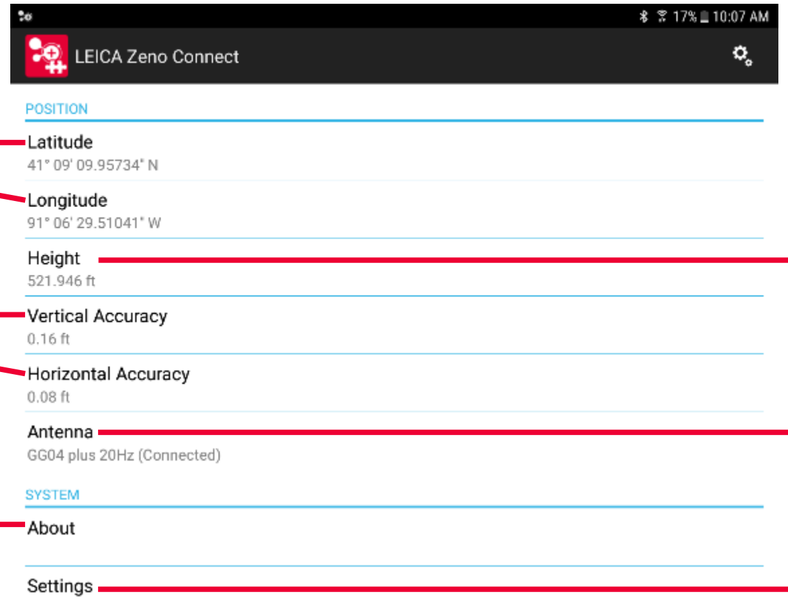
Zeno Connect - Overview



GNSS Position

GNSS Accuracy

About Zeno Connect

Ellipsoid Height

GNSS Antenna

GNSS Settings

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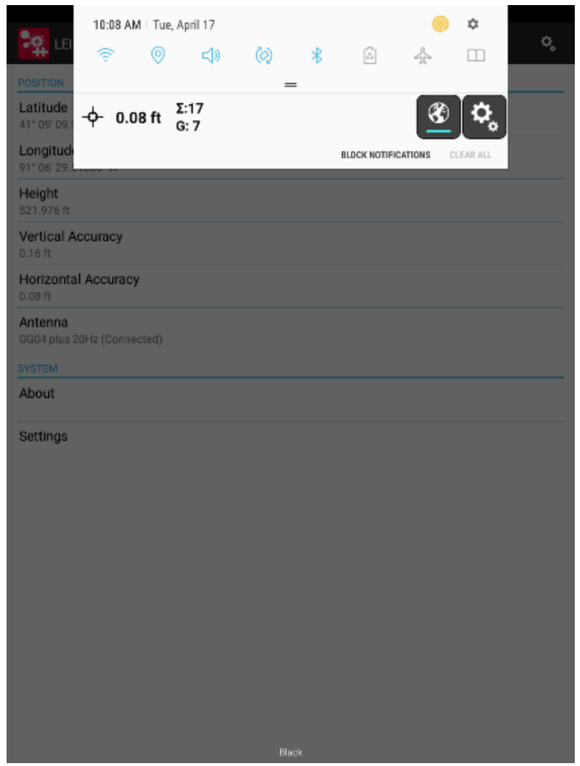
Zeno Connect - GNSS Status Bar

- Zeno Connect offers a GNSS Status Bar for both Android and Apple Devices

Android Notification Drawer



Apple Widget

- when it has to be **right**

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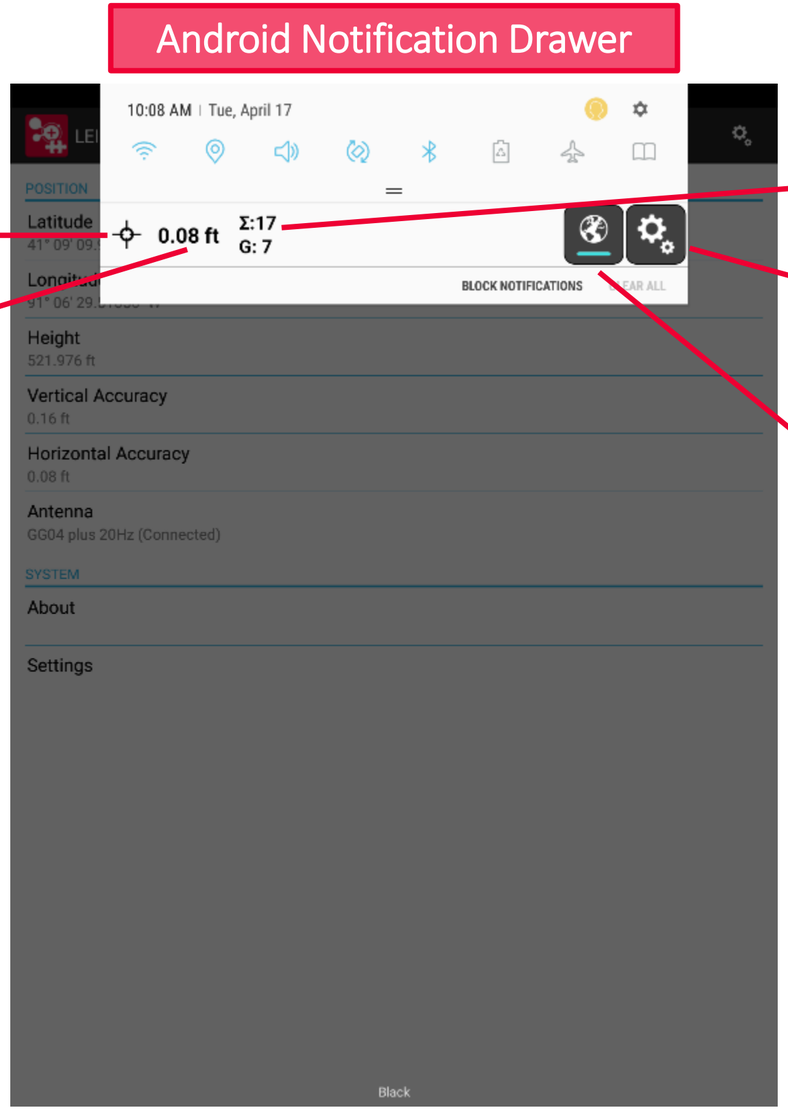
Zeno Connect - GNSS Status Bar



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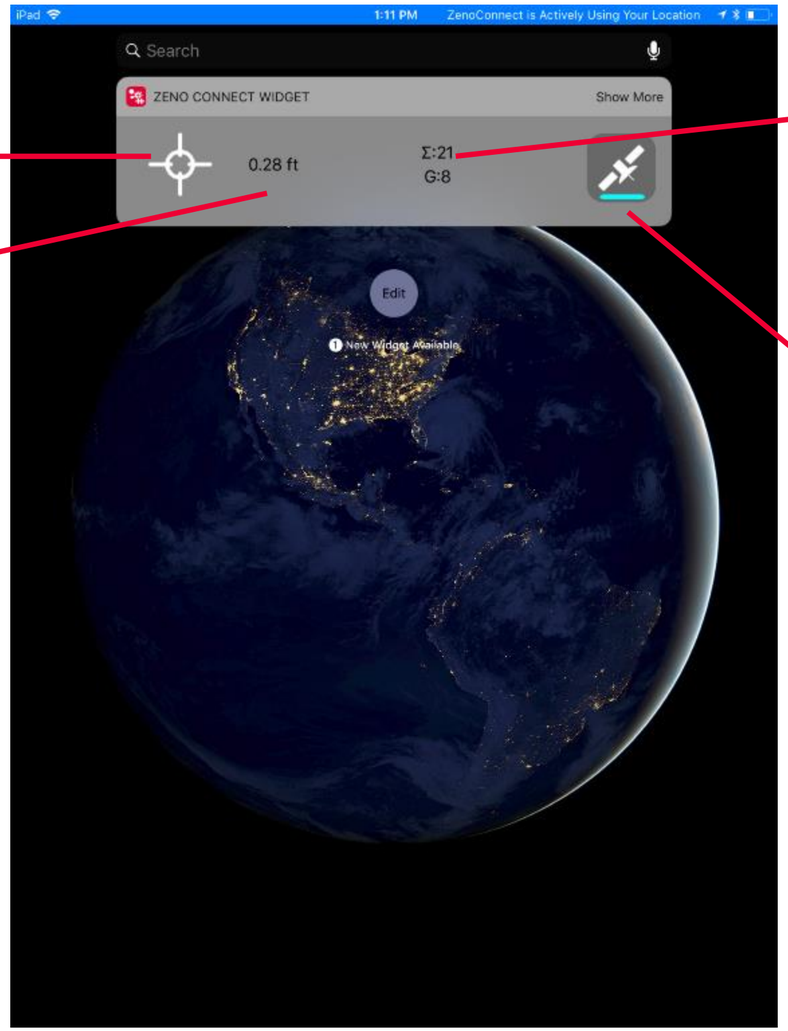
Zeno Connect - GNSS Status Bar

Apple Widget



Fix Type

GNSS Accuracy

Satellite's Utilized

Real-time Corrections (connected)

- when it has to be **right**

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Zeno Connect - Positioning to 3rd Party Apps

- Zeno Connect can provide positioning to 3rd party applications through two methods:
    1. Provides high-accuracy positioning directly to the location manager of the device
    2. Ability to directly connect to the GG04 plus via bluetooth and bypass the location manager to receive GNSS positioning within a 3rd party app and attribute GNSS metadata.

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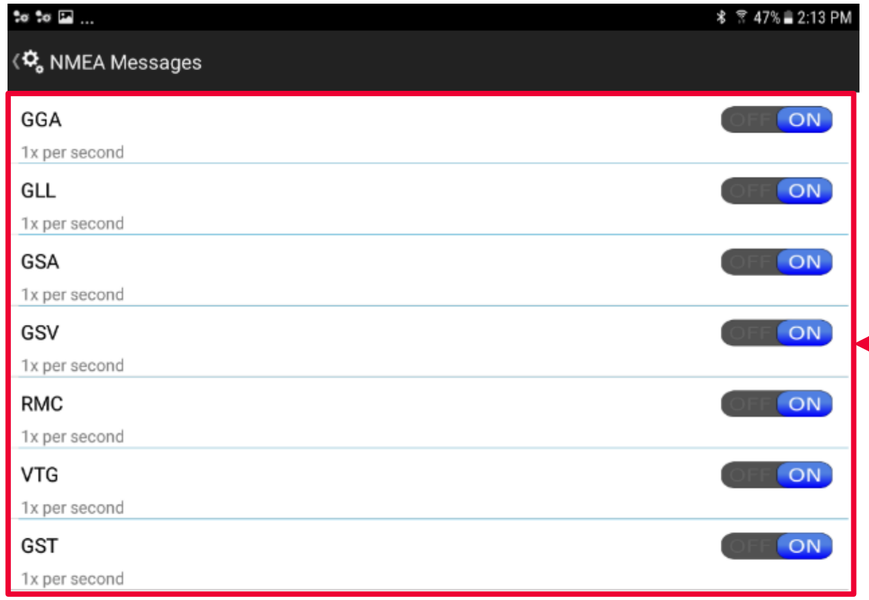
Zeno Connect - Positioning to 3rd Party Apps

- To send the NMEA positioning directly to a 3rd party application you must select the NMEA sentences to send and the frequency
  - In order to utilize this method, the app must have the ability to directly bluetooth connect to the GG04 plus Smart Antenna.



Define the NMEA sentences required and the output frequency

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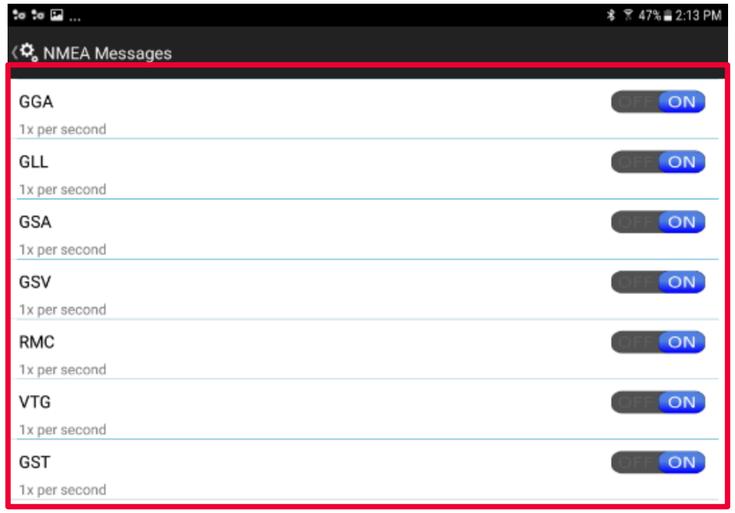
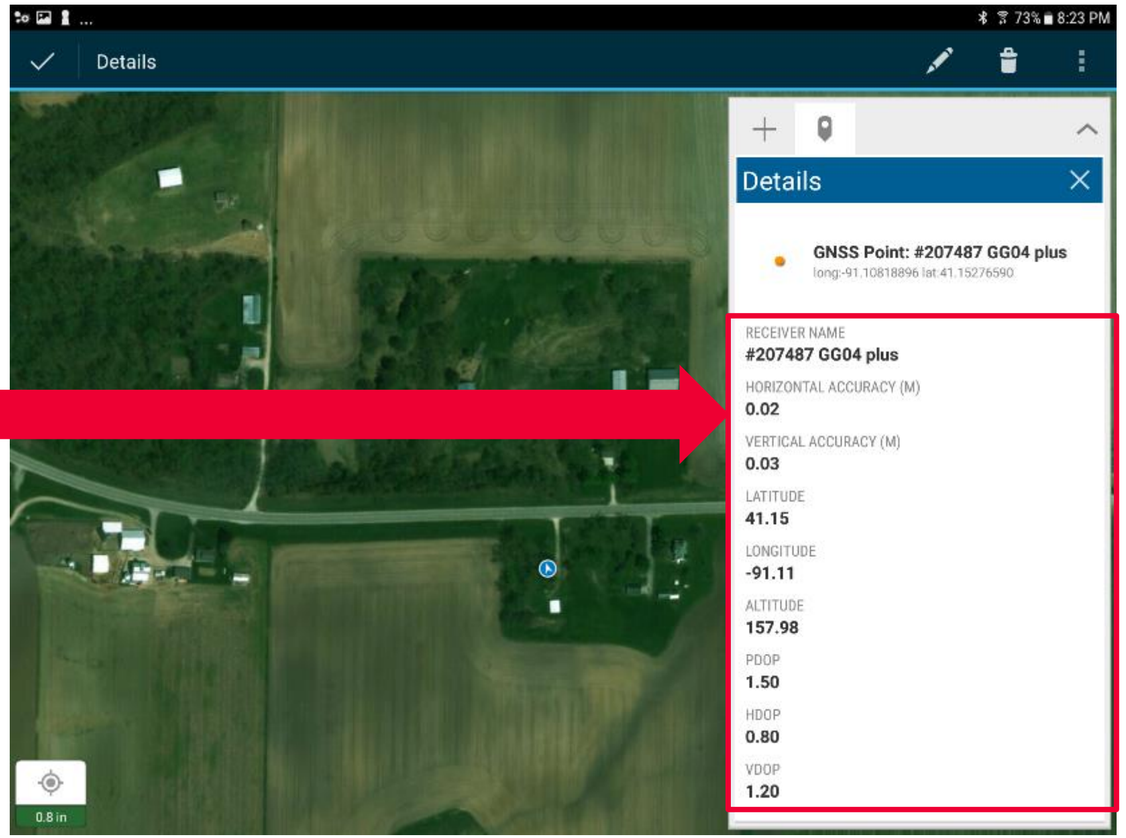
Zeno Connect - Positioning to 3rd Party Apps

- Streams GNSS positioning to 3rd party applications





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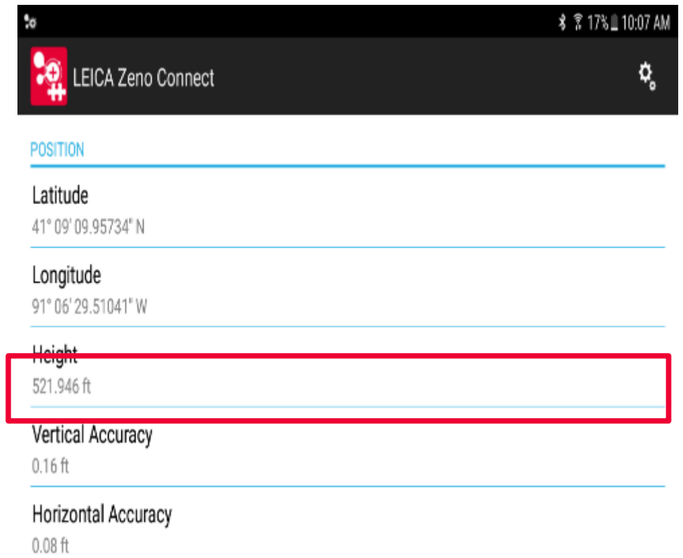
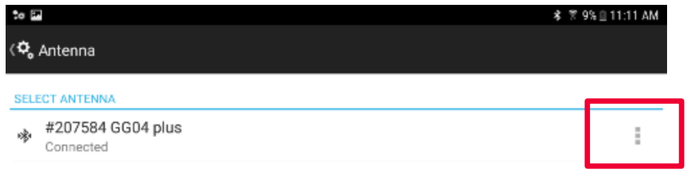
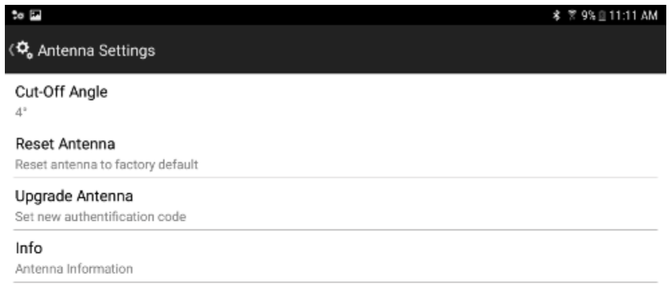
Zeno Connect - Antenna Settings

- To access details and settings for the GG04 plus Smart Antenna:
    1. Open Zeno Connect and establish a bluetooth connection to the receiver, then tap the Antenna portion of the app
    2. For Android tap the three vertical squares, for iOS tap the GG04 plus







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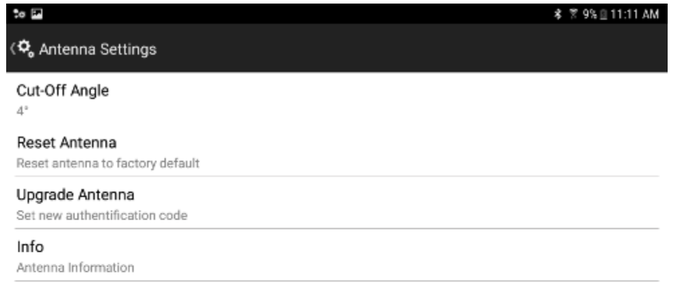
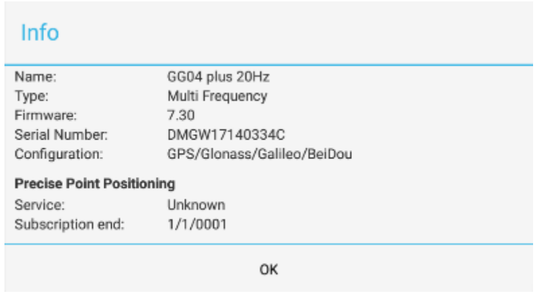
Zeno Connect - Antenna Info

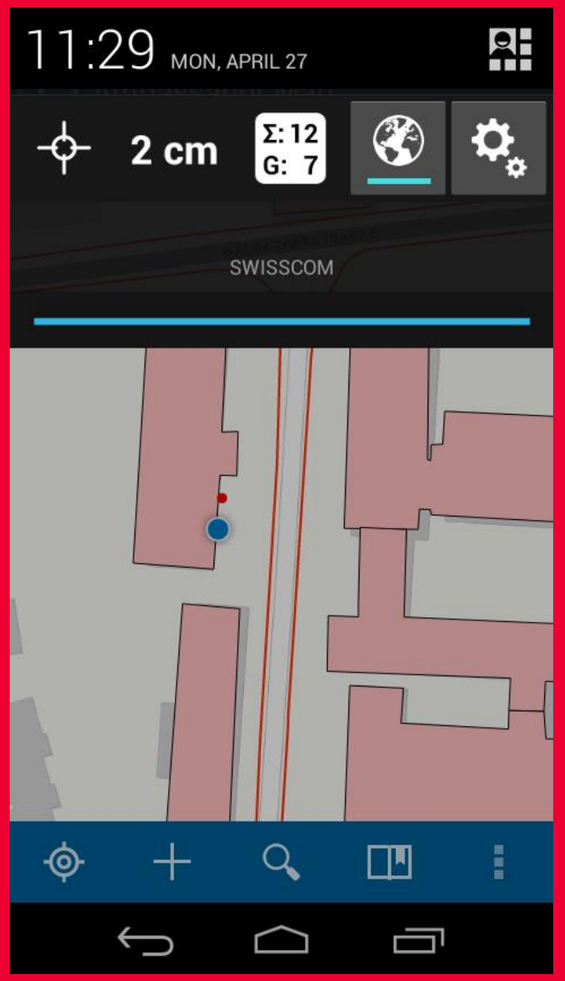
- The Antenna Settings screen offers the ability to:
  - Set the Cut-off Angle (user-defined, defaulted to 10°)
  - Reset the GNSS Antenna
  - Upgrade the GNSS Antenna options (upgrade accuracy or GNSS constellations)
  - Antenna Info (firmware, GNSS options and Spot Correction Subscription)

Antenna Settings



Antenna Info





Leica Zeno Connect

RTK Profile Creation

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Zeno Connect – RTK Profile Creation for SBAS (WAAS)

- If you plan to utilize real-time corrections via SBAS (WAAS):
  1. Navigate to the Zeno Connect app and be certain you have an active bluetooth connection to the GNSS receiver.
  2. Tap on Settings>Real-time Corrections.
  3. Ensure that Satellite Based is the selected profile and then go back to the main Settings menu.

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Zeno Connect – RTK Profile Creation for DGNSS/RTK

- If you plan to utilize real-time corrections via internet-based DGNSS/RTK:
  1. You will need the following information:
  2. URL or IP address of the GNSS network
  3. Port Number
  4. Username (if required)
  5. Password (if required)
  6. If you have subscribed to SmartNet, you will receive an email with your username and password. You can find your URL and port for SmartNet here: http://smartnet.leica-geosystems.us/resources_configuration.cfm
  7. Once the above is available, proceed to the instructions on the next slide series.

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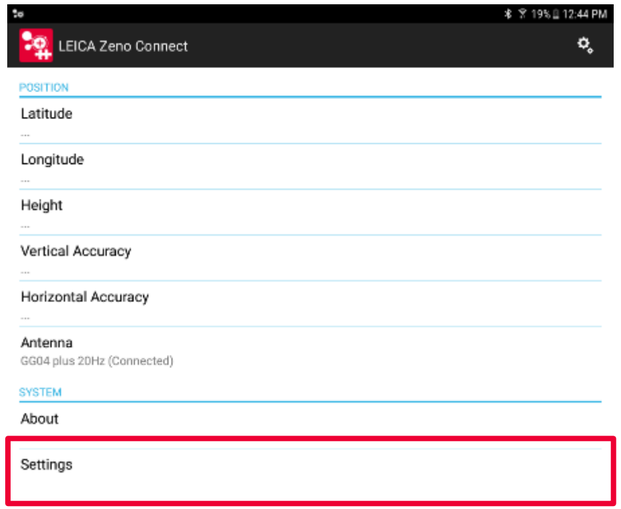
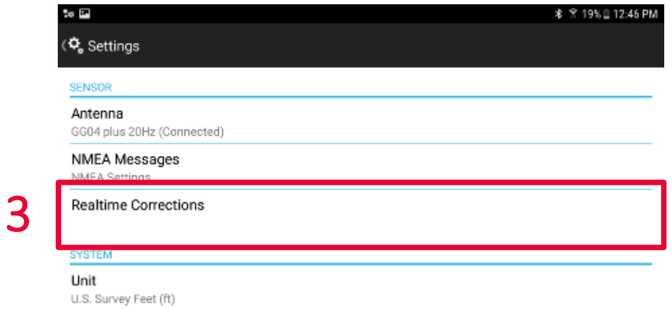
Zeno Connect – RTK Profile Creation for DGNSS/RTK

1. Navigate to the Zeno Connect app and be certain you have an active bluetooth connection to the GNSS receiver.
2. Tap Settings
3. Tap Realtime Corrections
4. Tap the + symbol in the upper right corner to create a new profile.





- when it has to be **right**

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Zeno Connect – RTK Profile Creation for DGNSS/RTK

5. Enter a Profile Name
6. Tap Next

5

6

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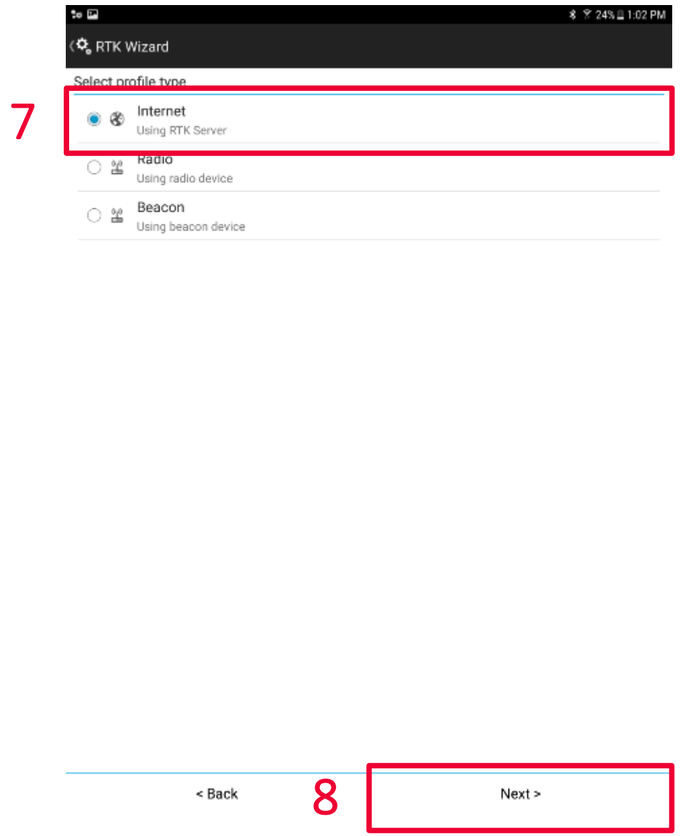
Zeno Connect – RTK Profile Creation for DGNSS/RTK

7. Select Internet
8. Tap Next



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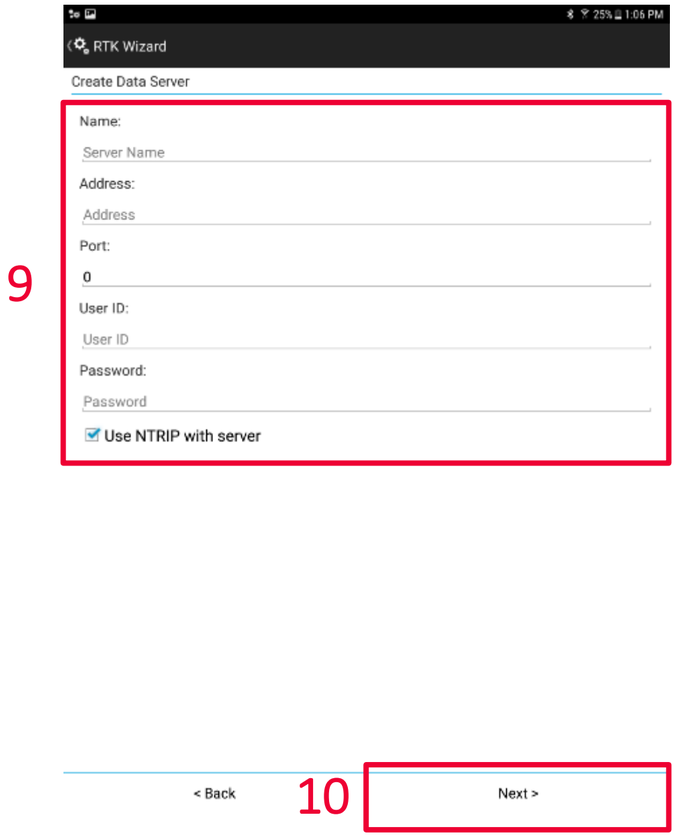
Zeno Connect – RTK Profile Creation for DGNSS/RTK

9. Enter the server name (user-defined), IP address/URL, Port #, User ID and Password for the network you will utilize. If it is an NTRIP network, toggle onthe Use NTRIP with server button.
10. Tap Next



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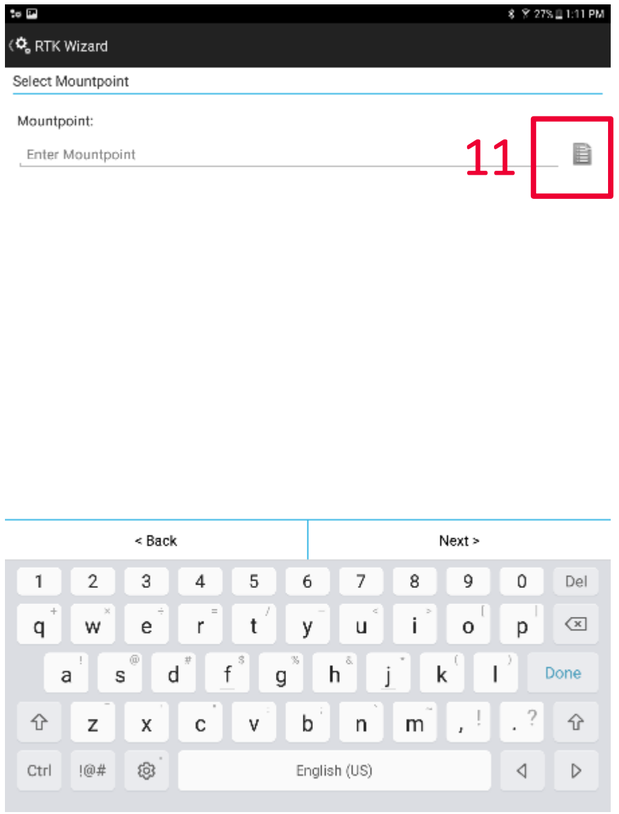
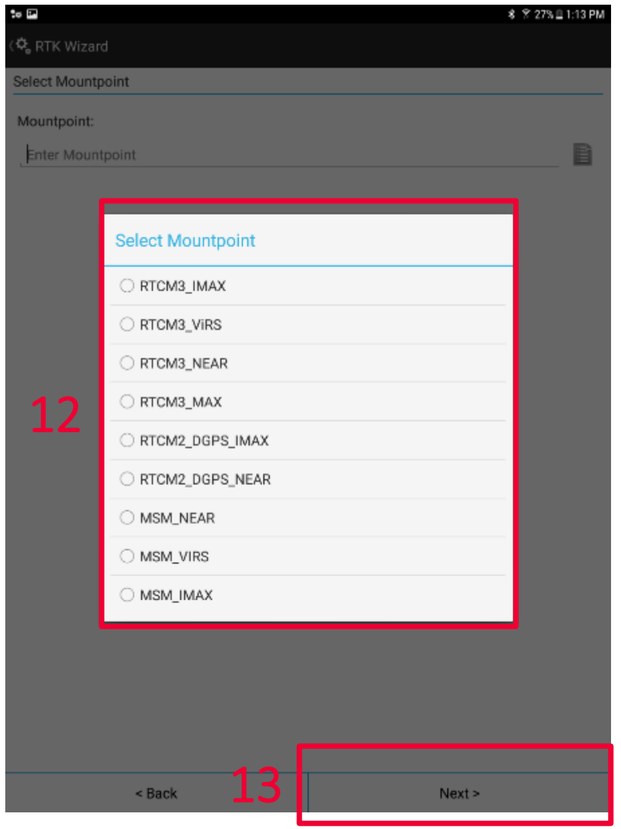
Zeno Connect – RTK Profile Creation for DGNSS/RTK

11. Tap the icon next to Enter Mountpoint
12. Select the mountpoint. If using SmartNet, select RTCM3 or MSM (full GNSS)
13. Tap Next





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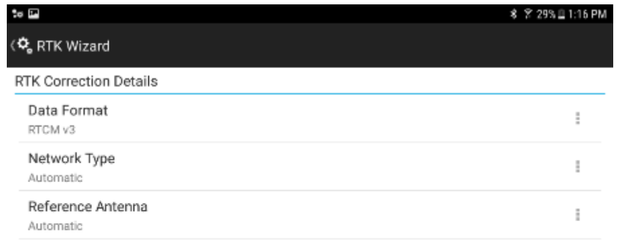
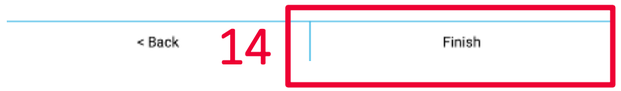
Zeno Connect – RTK Profile Creation for DGNSS/RTK

14. If using SmartNet, leave the Data Format, Network Type and Reference Antenna set to the defaults, as pictured below and tap Finish.
15. If you are presented with a RTK Connection has timed out box, tap OK. Tap OK to save the profile anyway.





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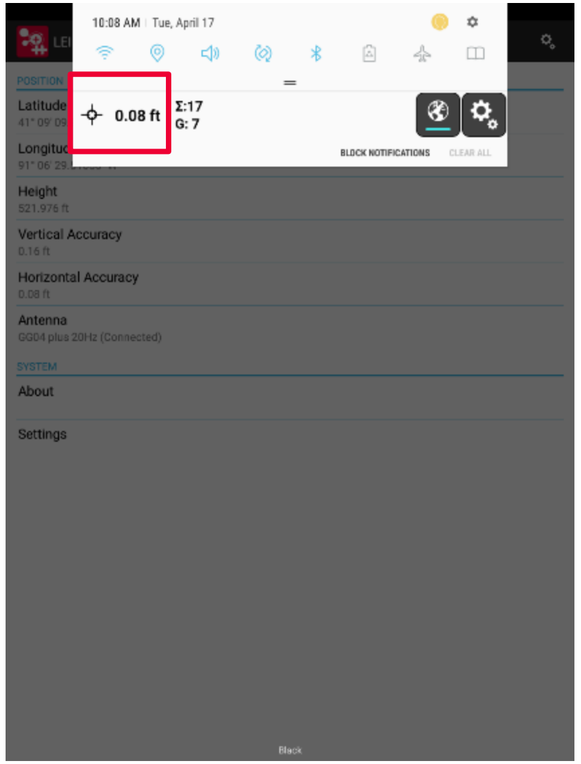
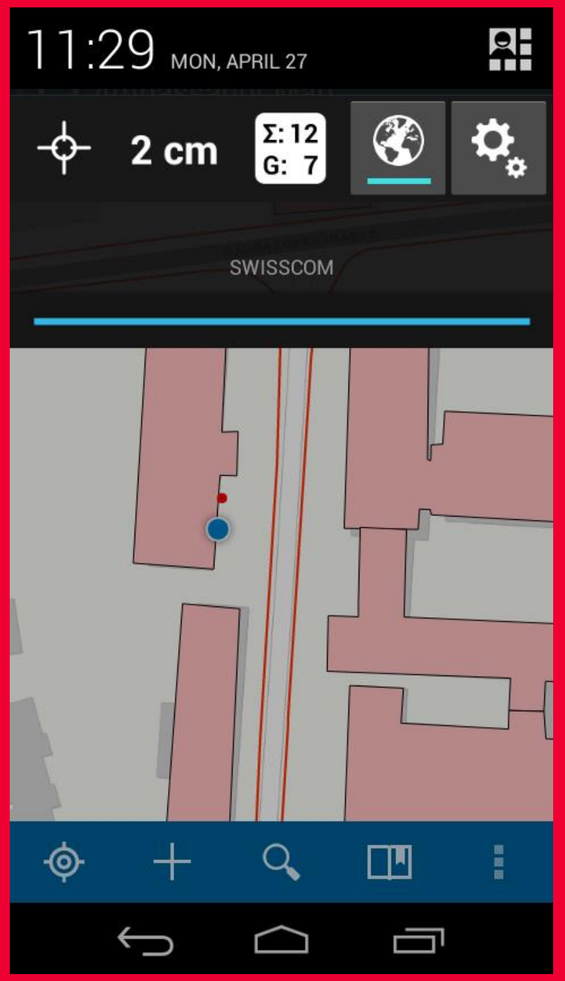
Zeno Connect – RTK Profile Creation for DGNSS/RTK

- Zeno Connect will automatically connect to the real-time correction source once bluetooth connected to the GG0X receiver.
- Check the Zeno Connect GNSS Status Bar to be certain the RTK corrections are being received. If so, you will see high-accuracy results in the accuracy portion.





Leica Zeno Connect

Configuring GNSS Positioning to 3rd Party Apps

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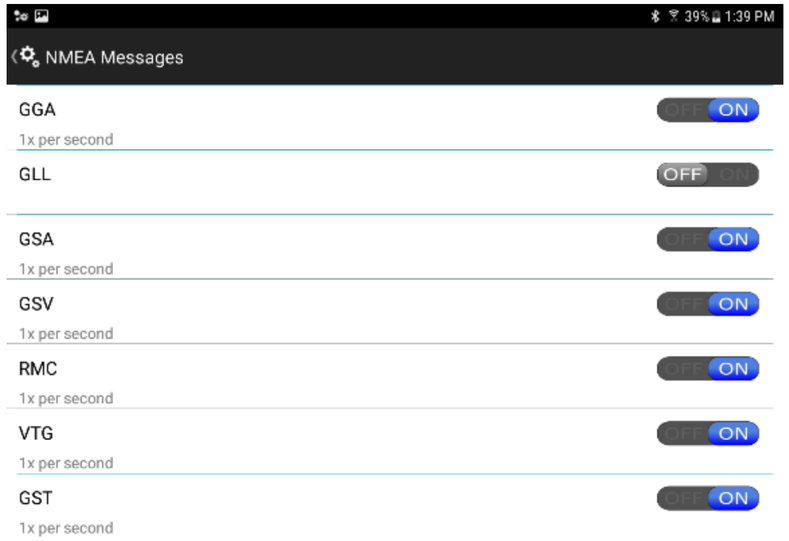
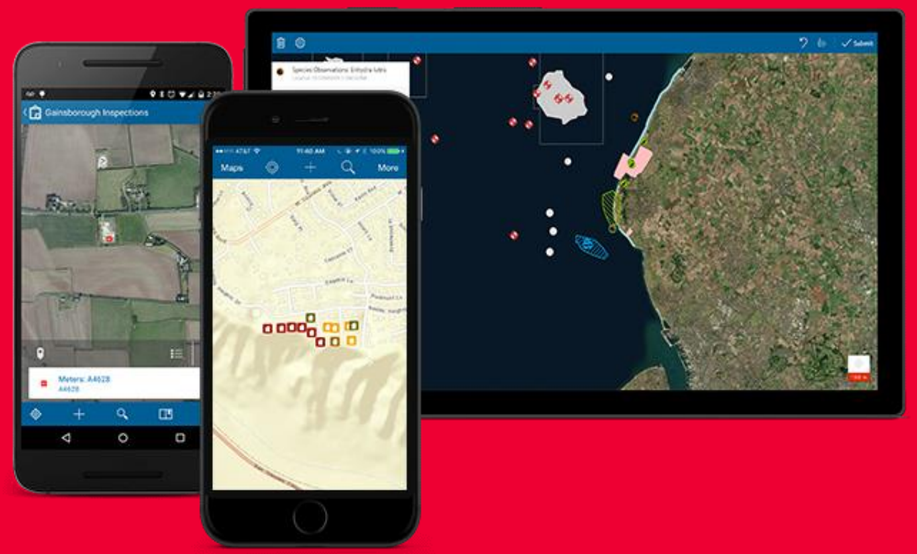
Zeno Connect – Configuring GNSS Positioning to 3rd Party Apps

- If your 3rd party application will only utilize the GNSS positioning through the location services of the device, nothing needs to be done. The app will automatically receive the high-accuracy positioning.
- If your app can utilize a direct Bluetooth connection to the GG04 plus, navigate to Zeno Connect>Settings>NMEA Messages
  - Define the sentences and output frequency that your app can utilize. Settings for Esri Collector for ArcGIS are pictured below.





Esri Collector for ArcGIS

Recommended Settings for the GG04 plus

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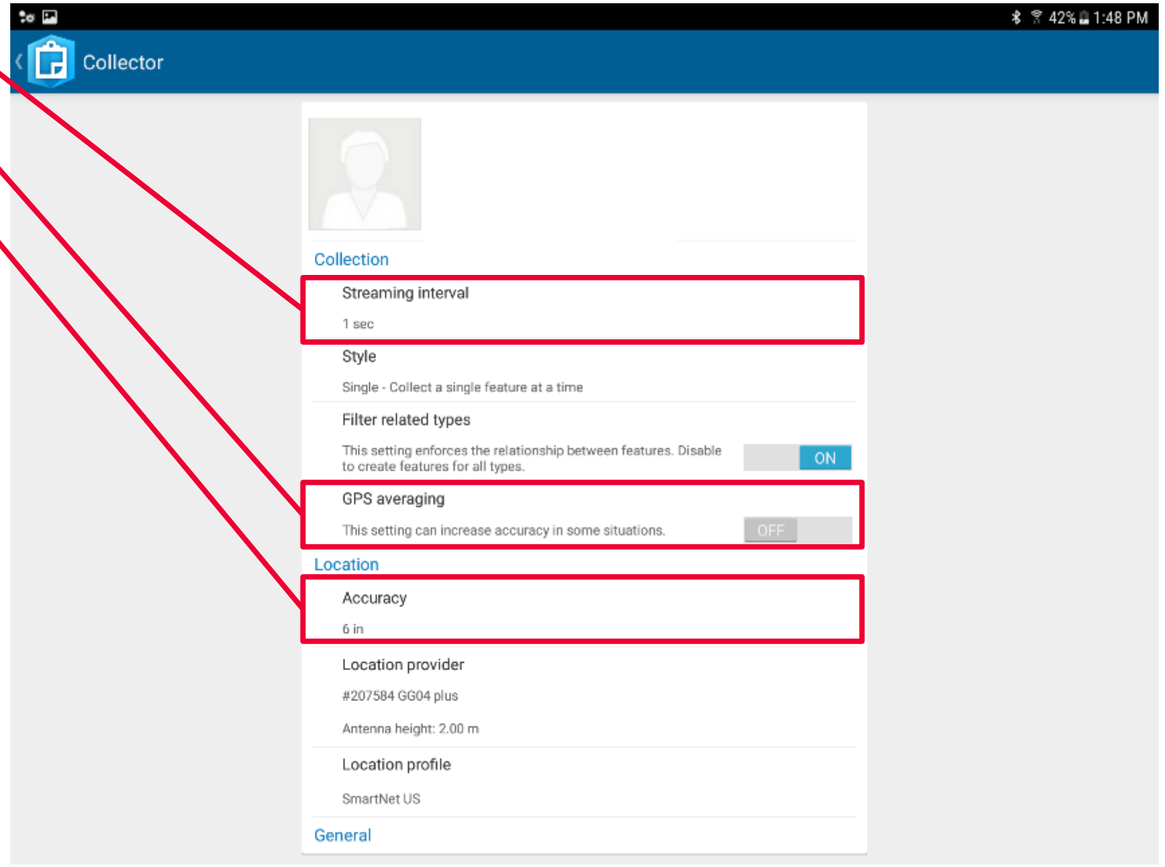
Esri Collector for ArcGIS – Recommended Settings for the GG04 plus

- Open the Esri Collector for ArcGIS app and go to Settings.
  - Streaming Interval: 1 sec
  - GPS Averaging: User-defined
  - Location Accuracy: User-defined



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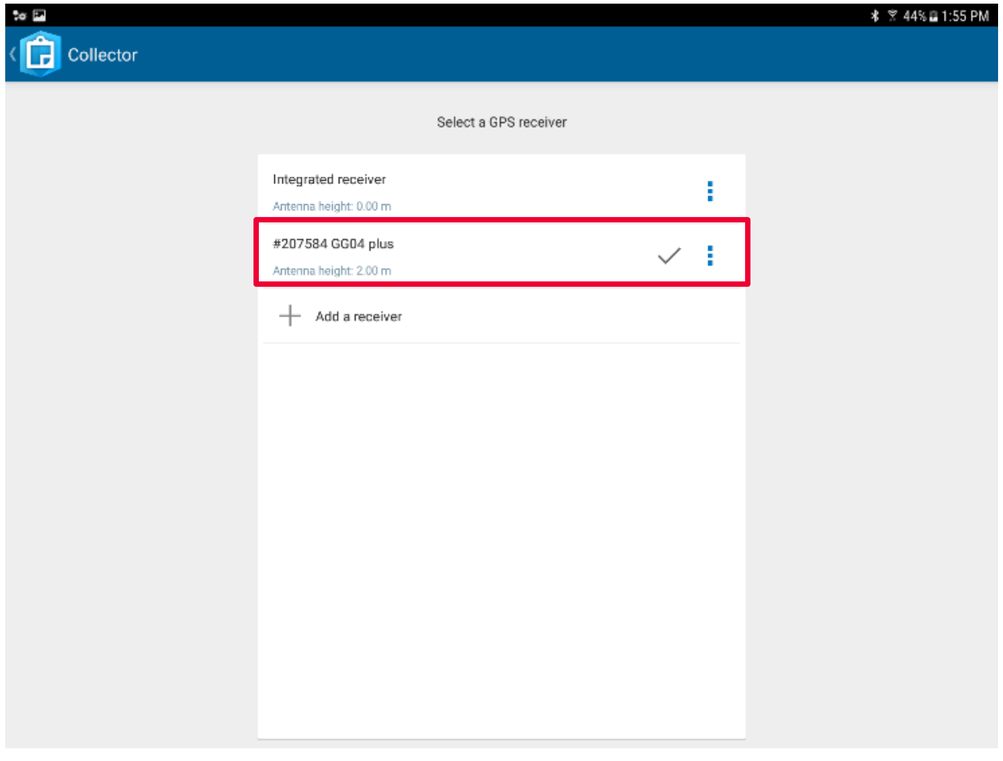
Esri Collector for ArcGIS – Recommended Settings for the GG04 plus

- Tap on the Location Provider>Add a receiver. If the GG04 plus is powered on and connected, you will see it within the selection menu. Tap on it and enter an Antenna Height.
- Be certain to select the newly added receiver. It will have a check mark beside it when selected.



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Esri Collector for ArcGIS – Recommended Settings for the GG04 plus

- In order for any GNSS receiver to automatically attribute GNSS metadata, the proper attributes must be defined within the geodatabase prior to field collection. Esri has made a ArcToolbox utility available to complete this task and available on GitHub at the link below.
  - Esri Collector Utils: Link
- The GNSS metadata Esri will automatically attribute, is as follows:
  - GNSS Receiver Name
  - Horizontal RMS (m)
  - Vertical RMS (m)
  - Latitude
  - Longitude
  - Altitude
  - PDOP
  - HDOP
  - VDOP
  - Fix Type
  - Number of Satellites
  - Fix Date & Time
  - Correction Age
  - Station ID
  - Average Horizontal RMS (m)
  - Average Vertical RMS (m)
  - Averaged Positions
  - Standard Deviation (m)

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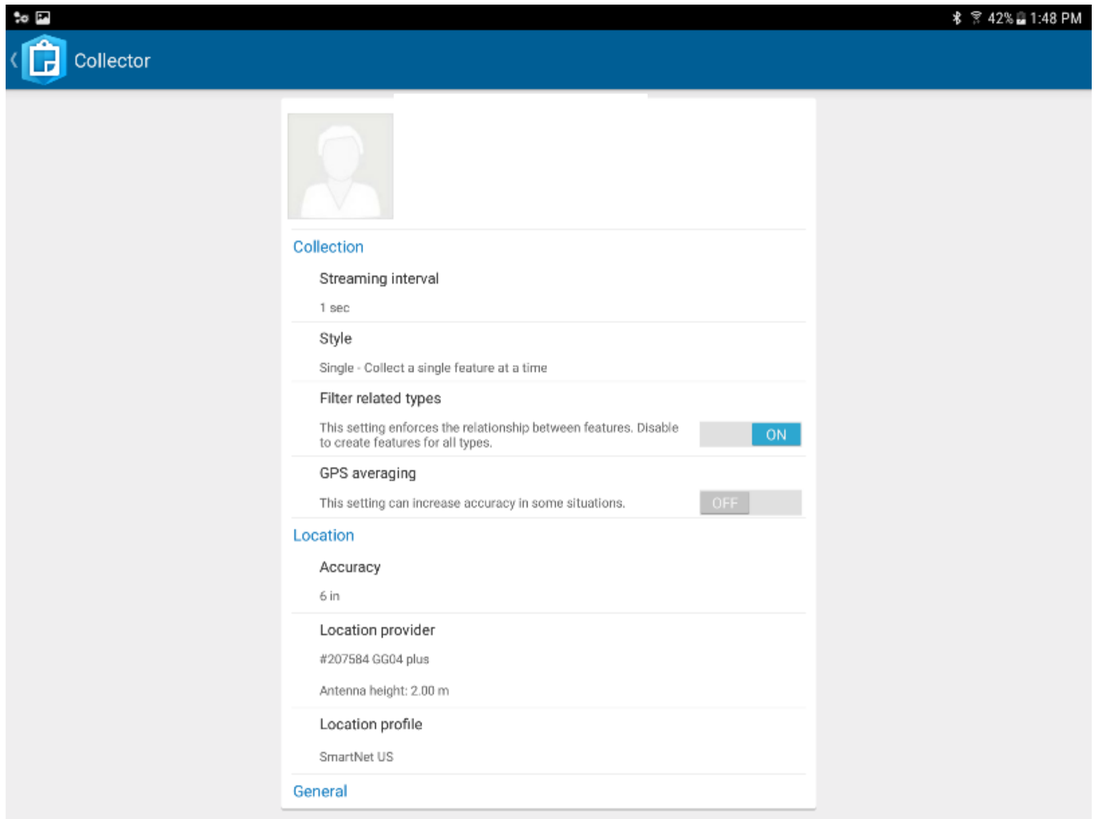
Esri Collector for ArcGIS – Recommended Settings for the GG04 plus

- Tap on Location Profile and create a new profile based on the GNSS Network datum, the Map Coordinate System and the Datum Transformation. If you are unsure of these settings, please contact the GNSS Network administrator as well as the person responsible for the maps authored in the Collector for ArcGIS app.



GG04 plus Documentation

Quick Guide, Manual & Spot Corrections

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Esri Collector for ArcGIS – Recommended Settings for the GG04 plus

- The links below provide the GG04 plus Quick Guide, User Manual and an introduction to the Spot Lite and Prime Correction Services.
  - GG04 plus Quick Guide: Link
  - GG04 plus User Manual: Link
  - Spot Corrections for GG04 plus: Link

PART OF HEXAGON

- when it has to be **right**

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