Leica Zeno FLX100 plus
Smart Antenna

Zeno

User Manual
Version 1.0
English

- when it has to be **right**

Leica
Geosystems

PART OF **HEXAGON**

Introduction

Purchase

Congratulations on the purchase of the Leica Zeno FLX100 plus smart antenna.

This manual contains important safety directions as well as instructions for setting up the product and operating it. Refer to 1 Safety Directions for further information.

Read carefully through the User Manual before you switch on the product.

The content of this document is subject to change without prior notice. Ensure that the product is used in accordance with the latest version of this document.

Product identification

The model and serial number of your product are indicated on the type label.

Always refer to this information when contacting your agency or Leica Geosystems authorised service centre.

Trademarks

- Windows® is a registered trademark of Microsoft Corporation in the United States and other countries
- *Bluetooth*® is a registered trademark of Bluetooth SIG, Inc.
- Android™ is a trademark of Google Inc.
- Apple, iPad, iPad Air, iPad Pro, and iPhone are trademarks of Apple Inc., registered in the U.S. and other countries.
- Use of the Made for Apple badge means that an accessory has been designed to connect specifically to the Apple product(s) identified in the badge, and has been certified by the developer to meet Apple performance standards. Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards.
- iOS is a trademark or registered trademark of Cisco in the U.S. and other countries and is used under license.

All other trademarks are the property of their respective owners.

Validity of this manual

This manual applies to the Leica FLX100 plus smart antenna.

Available documentation

Name	Description/Format		
Quick Start Video QR code			
Leica FLX100 plus smart antenna Quick Guide	Provides an overview of the product together with technical data and safety directions. Intended as a quick reference guide.	✓	✓

Name	Description/Format	🗂	📄
Leica FLX100 plus smart antenna User Manual	All instructions required in order to operate the product to a basic level are contained in the User Manual. Provides an overview of the product together with technical data and safety directions.	–	✓

Refer to the myWorld web page for all Leica FLX100 plus smart antenna documentation/software:

* https://myworld.leica-geosystems.com

ᵐʸworld

https://myworld.leica-geosystems.com offers a wide range of services, information and training material.

With direct access to myWorld, you are able to access all relevant services whenever it is convenient for you.

The availability of services depends on the instrument model.

Service	Description
myProducts	Add all products that you and your company own and explore your world of Leica Geosystems: View detailed information on your products and update your products with the latest software and keep up-to-date with the latest documentation.
myService	View the current service status and full service history of your products in Leica Geosystems service centres. Access detailed information on the services performed and download your latest calibration certificates and service reports.
mySupport	Create new support requests for your products that will be answered by your local Leica Geosystems Support Team. View the complete history of your support requests and view detailed information on each request in case you want to refer to previous support requests.
myLearning	Welcome to the home of Leica Geosystems online learning! There are numerous online courses – available to all customers with products that have valid CCPs (Customer Care Packages).
myTrustedServices	Add your subscriptions and manage users for Leica Geosystems Trusted Services, the secure software services, that assist you to optimise your workflow and increase your efficiency.
mySmartNet	Add and view your HxGN SmartNet subscriptions and user information. HxGN SmartNet delivers high-precision and high-availability GNSS network correction services in real time. The HxGN SmartNet Global family offers Network RTK with RTK bridging and Precise Point Positioning (PPP) services. These services work exclusively with Leica Geosystems GS sensors, providing the highest accuracy. Combined, they ensure HxGN SmartNet coverage everywhere.

Service	Description
myDownloads	Downloads of software, manuals, tools, training material and news for Leica Geosystems products.

Table of Contents

1 Safety Directions

1.1 General Introduction

Description

The following directions enable the person responsible for the product, and the person who actually uses the equipment, to anticipate and avoid operational hazards.

The person responsible for the product must ensure that all users understand these directions and adhere to them.

About warning messages

Warning messages are an essential part of the safety concept of the instrument. They appear wherever hazards or hazardous situations can occur.

Warning messages...
- make the user alert about direct and indirect hazards concerning the use of the product.
- contain general rules of behaviour.

For the users' safety, all safety instructions and safety messages shall be strictly observed and followed! Therefore, the manual must always be available to all persons performing any tasks described here.

DANGER, **WARNING**, **CAUTION** and **NOTICE** are standardised signal words for identifying levels of hazards and risks related to personal injury and property damage. For your safety, it is important to read and fully understand the following table with the different signal words and their definitions! Supplementary safety information symbols may be placed within a warning message as well as supplementary text.

Type	Description
⚠ DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a potentially hazardous situation or an unintended use which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a potentially hazardous situation or an unintended use which, if not avoided, may result in minor or moderate injury.
NOTICE	Indicates a potentially hazardous situation or an unintended use which, if not avoided, may result in appreciable material, financial and environmental damage.
☞	Important paragraphs which must be adhered to in practice as they enable the product to be used in a technically correct and efficient manner.

1.2 Definition of Use

Intended use
- Carrying out measurement tasks using various GNSS measuring techniques
- Computing with software
- Data communication with external appliances
- Data transfer with Bluetooth®
- Measuring coordinates
- Measuring raw data and computing coordinates using carrier phase and code signal from GNSS satellites (GNSS systems)
- Recording GNSS and point related data
- Recording measurements

Reasonably foreseeable misuse
- Use of the product without instruction
- Use outside of the intended use and limits
- Disabling of safety systems
- Removal of hazard notices
- Opening the product using tools, for example a screwdriver, unless this is permitted for certain functions
- Modification or conversion of the product
- Use after misappropriation
- Use of products with recognisable damage or defects
- Use with accessories from other manufacturers without the prior explicit approval of Leica Geosystems
- Inadequate safeguards at the working site

1.3 Limits of Use

Environment
Suitable for use in an atmosphere appropriate for permanent human habitation. Not suitable for use in aggressive or explosive environments.

⚠ **WARNING**

Working in hazardous areas, or close to electrical installations or similar situations
Life Risk.
Precautions:
▶ Local safety authorities and safety experts must be contacted by the person responsible for the product before working in such conditions.

1.4 Responsibilities

Manufacturer of the product
Leica Geosystems AG, CH-9435 Heerbrugg, hereinafter referred to as Leica Geosystems, is responsible for supplying the product, including the User Manual and original accessories, in a safe condition.

Person responsible for the product

The person responsible for the product has the following duties:

- To understand the safety instructions on the product and the instructions in the User Manual
- To ensure that it is used in accordance with the instructions
- To be familiar with local regulations relating to safety and accident prevention
- To stop operating the system and inform Leica Geosystems immediately if the product and the application become unsafe
- To ensure that the national laws, regulations and conditions for the operation of the product are respected

1.5 Hazards of Use

⚠ **DANGER**

Risk of being struck by lightning

If the product is used with accessories, for example on masts, staffs, poles, you may increase the risk of being struck by lightning. Danger from high voltages also exists near power lines. Lightning, voltage peaks, or the touching of power lines can cause damage, injury and death.

Precautions:

▸ Do not use the product in a thunderstorm as you can increase the risk of being struck by lightning.

▸ Be sure to remain at a safe distance from electrical installations. Do not use the product directly under or close to power lines. If it is essential to work in such an environment contact the safety authorities responsible for electrical installations and follow their instructions.

▸ If the product has to be permanently mounted in an exposed location, it is advisable to provide a lightning conductor system. A suggestion on how to design a lightning conductor for the product is given below. Always follow the regulations in force in your country regarding grounding antennas and masts. These installations must be carried out by an authorised specialist.

▸ To prevent damages due to indirect lightning strikes (voltage spikes) cables, for example for antenna, power source or modem should be protected with appropriate protection elements, like a lightning arrester. These installations must be carried out by an authorised specialist.

▸ If there is a risk of a thunderstorm, or if the equipment is to remain unused and unattended for a long period, protect your product additionally by unplugging all systems components and disconnecting all connecting cables and supply cables, for example, instrument - antenna.

⚠ DANGER

Risk of electrocution

Because of the risk of electrocution, it is dangerous to use poles, levelling staffs and extensions in the vicinity of electrical installations such as power cables or electrical railways.

Precautions:

▸ Keep at a safe distance from electrical installations. If it is essential to work in this environment, first contact the safety authorities responsible for the electrical installations and follow their instructions.

⚠ WARNING

Improper disposal of product

If the product is improperly disposed of, the following can happen:
- If polymer parts are burnt, poisonous gases are produced which may impair health.
- If batteries are damaged or are heated strongly, they can explode and cause poisoning, burning, corrosion or environmental contamination.
- By disposing of the product irresponsibly you may enable unauthorised persons to use it in contravention of the regulations, exposing themselves and third parties to the risk of severe injury and rendering the environment liable to contamination.

Precautions:

▸
 The product must not be disposed with household waste.
Dispose of the product appropriately in accordance with the national regulations in force in your country.
Always prevent access to the product by unauthorised personnel.

⚠ WARNING

Distraction or loss of attention

During dynamic applications there is a danger of accidents occurring if the user does not pay attention to the environmental conditions around, for example obstacles, excavations or traffic.

Precautions:

▸ The person responsible for the product must make all users fully aware of the existing dangers.

⚠ WARNING

Lightning strike

If the product is used with accessories, for example masts, staffs, poles, you may increase the risk of being struck by lightning.

Precautions:

▸ Do not use the product in a thunderstorm.

⚠ **WARNING**

Inadequate securing of the working site

This can lead to dangerous situations, for example in traffic, on building sites and at industrial installations.

Precautions:

▸ Always ensure that the working site is adequately secured.
▸ Adhere to the regulations governing safety, accident prevention and road traffic.

⚠ **WARNING**

Improperly repaired equipment

Risk of injuries to users and equipment destruction due to lack of repair knowledge.

Precautions:

▸ Only authorised Leica Geosystems Service Centres are entitled to repair these products.

For the AC/DC power supply:

⚠ **WARNING**

Electric shock due to missing ground connection

If unit is not connected to ground, death or serious injury can occur.

Precautions:

▸ The power cable and power outlet must be grounded!

For the AC/DC power supply and the battery charger:

⚠ **WARNING**

Electric shock due to use under wet and severe conditions

If unit becomes wet, it may cause you to receive an electric shock.

Precautions:

▸ If the product becomes humid, it must not be used!
▸ Use the product only in dry environments, for example in buildings or vehicles.

▸ Protect the product against humidity.

For the AC/DC power supply and the battery charger:

⚠️**WARNING**

Unauthorised opening of the product

Either of the following actions may cause you to receive an electric shock:
- Touching live components
- Using the product after incorrect attempts were made to carry out repairs.

Precautions:
- ▶ Do not open the product!
- ▶ Only Leica Geosystems authorised service centres are entitled to repair these products.

⚠️**CAUTION**

Unapproved chargers or cables

Connecting the charger improperly may cause serious damage to the device. Any damage caused by misuse is not covered by the warranty. Unapproved chargers or cables can cause the battery to explode or damage the device.

Precautions:
- ▶ Use only Leica-approved chargers, batteries, and cables.

⚠️**CAUTION**

Keeping the device too close to the human body during operation
Health risk

Precautions:
- ▶ Use the device at least 10 mm apart from the human body.
- ▶ This device has been tested for typical operations near the human body, for example handheld mode, with the device kept at 10 mm from the user's body.

⚠️**CAUTION**

Not properly secured accessories

If the accessories used with the product are not properly secured and the product is subjected to mechanical shock, for example blows or falling, the product may be damaged or people can sustain injury.

Precautions:
- ▶ When setting up the product, make sure that the accessories are correctly adapted, fitted, secured, and locked in position.
- ▶ Avoid subjecting the product to mechanical stress.

⚠️**CAUTION**

Dropping the product

When being dropped, the product can cause personal injury and/or mechanical damage.

Precautions:
- ▶ Ensure to have a firm grip on the product before operating it.

⚠ **CAUTION**

Before any cleaning procedure, ensure that the instrument is switched off and the battery has been removed.

⚠ **CAUTION**

Unused connectors must be protected using the attached dust cap.

NOTICE

Rooting your Android device will void your right for any warranty services and support by Leica!

2 Description of the System

2.1 General Information

Design

The instrument

- Four satellite-system (BeiDou, GPS, GLONASS, Galileo), support access to external differential signal to get typical 2 cm (2D) positioning results
- FLX100 plus smart antenna with integrated helix antenna and Bluetooth capability
- Small and lightweight, wearable
- Low power consumption, long battery duration
- Rubber bumper for drop protection
- Is designed to be used on the pole or on the Universal Handheld Tray. It calculates a position from the computed ranges to all visible and activated GNSS satellites
- Can communicate with Leica Zeno GIS software:
  - Zeno Mobile,
  - Zeno Connect: compatible with Android, iOS and Windows
- Install Zeno Connect to use third-party applications

Description

25020_001

a   Connection LED – blue when Bluetooth connected
b   GNSS correction indicator – green when receiving correction data
c   Satellite LED – green when position available
d   Battery LED indicator
    – Green during normal operation
    – Red when power < 10%
    – Red when charging
    – Green when fully charged
e   Power button to turn on/off the receiver
f   Holes for the screws to fix the pole adapter
g   USB-C port supports USB 2.0

2.3　Accessories

Operation with pole　Pole setup.

25023_001

a	Leica FLX100 plus smart antenna
b	AZ219 Pole Mount
c	GLS30 Carbon Pole

Operation with smartphone

Using the AZ220 Universal Handheld Tray for FLX100 plus smart antenna.

25024_001

a	Leica FLX100 plus smart antenna
b	AZ220 Universal Handheld Tray
c	Smartphone

Operation with tablet

Using the AZ220/AZ225 Universal Handheld Tray for FLX100 plus smart antenna.

25025_001

a	Leica FLX100 plus smart antenna
b	AZ220/AZ225 Universal Hand-held Tray
c	Tablet
d	AZ224 Handstrap tether for tablets

3 Operation

3.1 Power On/Off, Reset, Charging

Description

25013_001

a   Power on/off button
b   Battery LED indicator

Function	Description
Power on/off	**Turn on:** Press and hold the power button until all LEDs switch on. The device sounds a beep when ready for use. ☞ The device starts booting after the LEDs switch on. Once it is ready, the device sounds a beep. **Turn off:** Press and hold the power button until all LEDs switch off and the device sounds a long beep.
Charging	Use the standard charger and USB-C data cable to charge. The battery LED indicator is red while charging and green when charging is finished.

3.2 Setups for the FLX100 plus Smart Antenna

Setup on a pole

To attach the FLX100 plus smart antenna on the top of a pole, the pole mount adapter is required - Art. 915867.

Follow these steps to connect the FLX100 plus smart antenna to the pole.

25014_001

1.	Use a slot screwdriver to fix the pole mount adapter with both screws to the FLX100 plus smart antenna. ☞ Make sure to fix the pole mount adapter in the correct orientation.
2.	Screw the pole clockwise into the pole mount adapter.

Setup with Universal Handheld Tray

Use the Universal Handheld Tray to attach the FLX100 plus smart antenna with phone/tablet.

The Universal Handheld Tray keeps the FLX100 plus smart antenna and phone/tablet together. This setup maximises the productivity in the field. The Universal Handheld Tray has a spring-loaded frame to hold a phone/tablet of different sizes.

Example: Smartphone

25027_001

Example: Tablet

25028_001

3.3 Phase Centre of the FLX100 plus Smart Antenna

Phase centre

The phase centre of the FLX100 plus smart antenna location is at the dot near the top of the device.
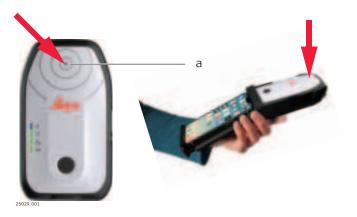
Pole mode

In pole mode, the offset from the phase centre to the top of the pole, including the pole adapter mount, is automatically accounted. Make sure to provide the appropriate antenna height in the software.

Handheld mode

In handheld mode, the location is measured at the dot. Make sure the FLX100 plus smart antenna is placed properly.

☞ Make sure that Pole or Handheld mode are set correctly in Zeno Mobile/Zeno Connect settings to change the phase centre position.

25029_001

a   Phase centre position

3.4 Setting of the FLX100 plus Smart Antenna

Step-by-step

1. Access the FLX100 plus smart antenna settings.

In **Zeno Mobile**	1. Go to **Settings** within a project. 2. Access **GPS** and then **Antenna**.
In **Zeno Connect**	1. Open the app and go to **Antenna**.

2. Tap on the three dots next to the FLX100 plus smart antenna.

3. Configure the FLX100 plus smart antenna. The following settings are available:
   • Antenna Height (Only in Zeno Mobile)
   • Antenna Usage
   • Reset Antenna
   • Info

☞ Refer to the according Zeno Mobile and Zeno Connect documentation for more information.

3.5 Configure Real-time Corrections

Step-by-step   This step-by-step procedure describes the configuration of the real-time correction in Zeno Mobile and Zeno Connect.

RTK Profile Wizard

1.	In **Zeno Mobile**	1.	Go to **Settings** within a project.
		2.	Access **GPS** and then **Realtime Corrections**.
	In **Zeno Connect**	1.	Open the app and go to **Settings**.
		2.	Go to **Realtime Corrections**.

2.	Tap on **+** in the top-right corner of the screen to start the RTK profile wizard.
3.	Enter profile details. ☞ Provide a name and, optionally, a description for the new profile.
4.	Tap **Next**.
5.	Select profile type. • Select **Internet** for real-time corrections streamed through the Internet. • Select **Radio** or **Beacon** if using an external radio receiver. Only on Android.
6.	Tap **Next**.

Create Data Server

1.	Tap on **+** to create a data server.
2.	Add the corresponding details and credentials for the data server that is providing the real-time corrections.
3.	Tap **Next**.

Select Mountpoint

1.	Tap on the file icon to fetch the Mountpoint list from the server. An active Internet connection is required. Otherwise, manually insert the Mountpoint name.
2.	Tap **Next**.
3.	Set the **RTK Correction Detail**. To do so, select the corresponding: • Data Format • Network Type • Reference Antenna
4.	Tap **Finish**.

Wizard end

At the end of the wizard, the connection to the correction server is tested to verify the correct configuration.

It is possible to save the profile independently of the connection test result.

Further configuration

Access again the **Realtime Corrections** menu to access the profiles. Modify any detail by tapping on the three dots next to the profile name.

When position is available, activate/deactivate the automatic connection to the profile here.

3.6	**Firmware Upload**
Step-by-step	This step-by-step procedure describes how to upload the firmware on the FLX100 plus smart antenna.

Download Firmware

☞ The latest firmware is always available on myWorld.
https://myworld.leica-geosystems.com

1. Download the firmware ZIP file from the FLX100 Firmware option in the Software section of the antenna in myWorld.

Send Firmware to FLX100 plus smart antenna by Bluetooth

1. Unzip the file "update.bin" to your computer.

2. Ensure the FLX100 plus smart antenna is turned on.

3. Right-click "update.bin".

4. Choose Send to > Bluetooth device.

5. Select the corresponding serial number of the FLX100 plus smart antenna in the Bluetooth File Transfer window.

6. Click Next.

7. The firmware file is sent to the FLX100 plus smart antenna. It takes approximately 5 minutes.

8. Click Finish in the Bluetooth File Transfer window once the transfer has completed.

☞ Alternatively, connect the FLX100 plus smart antenna to a PC/Laptop with the USB-C cable. Copy the **update.bin** file from the update folder that can be found inside the FLX100 plus smart antenna memory.

☞ Update firmware one at a time. If both, System and GNSS, receive an update at the same time, perform one after the other sequentially.

Install Firmware

☞ Now the firmware file has been transferred.

1. Turn the FLX100 plus smart antenna off and on again.

☞ Once turned on again, the LEDs on the antenna flash one after the other for a few seconds.

☞ When the firmware has successfully installed, the LEDs stop flashing and the antenna sounds a beep.

4 Care and Transport

⚠ **CAUTION**

Unapproved chargers or cables

Connecting the charger improperly may cause serious damage to the device. Any damage caused by misuse is not covered by the warranty. Unapproved chargers or cables can cause the battery to explode or damage the device.

Precautions:

‣ Use only Leica-approved chargers, batteries, and cables.

4.1 Transport

Transport in a road vehicle

Never carry the product loose in a road vehicle, as it can be affected by shock and vibration. Always carry the product in its container and secure it.

For products for which no container is available use the original packaging or its equivalent.

Shipping

When transporting the product by rail, air or sea, always use the complete original Leica Geosystems packaging, container and cardboard box, or its equivalent, to protect against shock and vibration.

Shipping, transport of batteries

When transporting or shipping batteries, the person responsible for the product must ensure that the applicable national and international rules and regulations are observed. Before transportation or shipping, contact your local passenger or freight transport company.

4.2 Storage

Product

Respect the temperature limits when storing the equipment, particularly in summer if the equipment is inside a vehicle. Refer to 5 Technical Data for information about temperature limits.

Battery care

- A rechargeable Li-Ion battery powers the instrument. The full performance of a new battery is achieved only after two or three complete charge and discharge cycles
- The battery can be charged and discharged hundreds of times. It eventually wears out
- Do not leave a fully charged battery connected to a charger, as overcharging may shorten its life
- If left unused, a fully charged battery loses its charge over time

Li-Ion batteries

- Refer to Environmental specifications for information about storage temperature range
- After storage recharge batteries before using
- Protect batteries from damp and wetness. Wet or damp batteries must be dried before storing or use
- A storage temperature range of 0 °C to +30 °C / +32 °F to +86 °F in a dry environment is recommended to minimize self-discharging of the battery
- At the recommended storage temperature range, batteries containing a 40% to 50% charge can be stored for up to one year. After this storage period the batteries must be recharged

4.3   Cleaning and Drying

Product and accessories

- Use only a clean, soft, lint-free cloth for cleaning. If necessary, moisten the cloth with water or pure alcohol. Do not use other liquids; these may attack the polymer components.

Damp products

Dry the product, the container, the foam inserts and the accessories at a temperature not greater than 40 °C/104 °F and clean them. Do not repack until everything is dry. Always close the container when using in the field.

Cables and plugs

Keep plugs clean and dry. Blow away any dirt lodged in the plugs of the connecting cables.

5 Technical Data

Instrument

Type	Description
Satellites tracked	GPS: L1C/A, L2C QZSS: L1C/A, L2C GLONASS: L1OF, L2OF BeiDou: B1I, B2I Galileo: E1B/C, E5b SBAS: WAAS, EGNOS, MSAS, GAGAN (L1 C/A)
Channels	184
Update rate	Up to 10 Hz
Re-aquisition	< 2 s
RTK initialisation	Typically > 120 s
Cold start time	Typically < 24 s
Hot start	Typically < 15 s
Initialisation reliability	> 99.9%
Differential	RTCM3.3
Data format	NMEA

Positioning

Accuracy and reliability are subject to satellite geometry (DOPs), multipath, refractions and obstructions. In static mode they are subject even to occupation times: the longer the Baseline, the longer the occupation time must be.

Type	Description
RTK (RMS)	Horizontal: typical 2 cm (2D)

Dimensions

L × W × H [mm]	139 × 80.6 × 31

Weight

Weight [g]	319

Connector

USB	1 USB-C connector, supports USB 2.0

Mounting

Universal Handheld Tray	Snap on handheld device and Leica FLX100 plus smart antenna
Pole	Leica FLX100 plus smart antenna mounted on Pole Adapter/Pole

System

Processor	ARM Cortex-A7
RAM	512 MB DDR3
Storage	8 GB total 2 GB for system, 6 GB for user

Communication

Bluetooth	BT 5.0

Power

Internal battery	3.8 V, 6120 mAh USB-C charging, supports 1.44 A fast charge
Input voltage	5 V DC/2 A
Power consumption	< 1.5 W
Working time	> 20 hours
Charge time	Typically 4 hours

Environmental specifications

Type	Operating temperature [°C]	Storage temperature [°C]
Instrument	−40 to +65	−40 to +80

External influences	Protection
Water, dust and sand	IP67
Humidity	Up to 100% (non-condensing)
Shock resistance	Designed to endure to a 2 m pole drop and 1.2 m free drop on concrete floor with no damage

5.1 Accessories

Standard accessories

USB cable, Arm/Belt pouch

Optional accessories

Carbon fiber pole, telescopic pole, bracket 5/8", soft bag
Universal Handheld Tray

5.2 Conformity to National Regulations

Labelling Leica FLX100 plus smart antenna

Manufactured: 2022
ZF10P662200001

Model: **Zeno FLX100 plus**
Smart Antenna
Art. No.: 958981
Input:
5V ⎓ 2A DC
Battery:
3.85V ⎓ 6120mAh
/23.562Wh

Leica Geosystems AG
CH-9435 Heerbrugg
Made in China
FCC ID: RFD-FLX100PLUS
IC: 3177A-FLX100PLUS

IP67

Importer: Leica Geosystems Ltd.
Hexagon House, Michigan Drive,
Tongwell, Milton Keynes, MK15 8HT

0025015_001

Antennas

Type	Antenna	Gain [dBi]
Bluetooth	Internal Microstrip antenna	1.0

GNSS frequency bands

Type	Frequency band [MHz]
FLX100 plus smart antenna	GPS, QZSS, SBAS: L1 1575.42 GPS, QZSS: L2 1227.60 GLONASS: L1 1602.5625-1611.5 GLONASS: L2 1246.4375-1254.3 Galileo: E1 1575.42 Galileo: E5b 1207.14 BeiDou: B1 1561.098 BeiDou: B2 1207.14

Frequency bands, output power

Type	Frequency band [MHz]	Output power[1] [dBm]
Bluetooth	2402–2480	5.90
Bluetooth LE	2402–2480	1.5-9

Radiation Exposure Statement

The radiated output power of the instrument is below the radio frequency exposure limits. Nevertheless, the instrument should be used in such a manner that the potential for human contact during normal operation is minimised. To avoid the possibility of exceeding the radio frequency exposure limits, keep a distance of at least 20 cm between you (or any other person in the vicinity) and the instrument.

EU

CE Hereby, Leica Geosystems AG declares that the radio equipment type FLX100 plus smart antenna is in compliance with Directive 2014/53/EU and other applicable European Directives. The full text of the EU declaration of conformity is available at the following Internet address: http://www.leica-geosystems.com/ce.

USA

FCC ID: RFD–FLX100PLUS
FCC Part 15

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, it may cause harmful interference to radio communications.

However, there is no guarantee that interference does 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:

[1] Conducted power for mobile technologies and EIRP for other technologies.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the 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.

Changes or modifications not expressly approved by Leica Geosystems for compliance could void the user's authority to operate the equipment.

Canada

CAN ICES-003 B/NMB-003 B
IC: 3177A–FLX100PLUS

Canada Compliance Statement
This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:
1. This device may not cause interference
2. This device must accept any interference, including interference that may cause undesired operation of the device

Canada Déclaration de Conformité
L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
1. L'appareil ne doit pas produire de brouillage
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

Radio Frequency (RF) Exposure Compliance Statement

The radiated RF output power of the instrument is below the Health Canada's Safety Code 6 exclusion limit for portable devices (radiated element separation distance between the radiating element and user and/or bystander is below 20 cm).

Others

The conformity for countries with other national regulations has to be approved prior to use and operation.

5.3 Dangerous Goods Regulations

Dangerous Goods Regulations

Many products of Leica Geosystems are powered by Lithium batteries.

Lithium batteries can be dangerous under certain conditions and can pose a safety hazard. In certain conditions, Lithium batteries can overheat and ignite.

☞ When carrying or shipping your Leica product with Lithium batteries onboard a commercial aircraft, you must do so in accordance with the **IATA Dangerous Goods Regulations**.

☞ Leica Geosystems has developed **Guidelines** on "How to carry Leica products" and "How to ship Leica products" with Lithium batteries. Before any transportation of a Leica product, we ask you to consult these guidelines on our web page (IATA Lithium Batteries) to ensure that you are in accordance with the IATA Dangerous Goods Regulations and that the Leica products can be transported correctly.

☞ Damaged or defective batteries are prohibited from being carried or transported onboard any aircraft. Therefore, ensure that the condition of any battery is safe for transportation.

6 Leica FLX100 plus Smart Antenna Bundle

6.1 Standard Configuration

Description

The following table shows all parts for the standard configuration.

Description	Qty.
Leica FLX100 plus smart antenna	1
Power adaptor with 4 plugs (US, UK, EU and AU)	1
Cable USB-C/USB-C, 1.5 m	1
Cable USB-C/USB-A, 1.5 m	1
AZ222 Arm/Belt pouch	1
Soft bag for Leica FLX100 plus smart antenna, black	1
Cardboard box	1

6.2 Accessories

Overview

List of accesories available for the Leica FLX100 plus smart antenna:

Part number	Description
AZ219	Pole Mount to attach the Leica FLX100 plus smart antenna with Pole
AZ220	Universal Handheld Tray
AZ225	Universal Handheld Tray > 8"
AZ221	Softbag
AZ222	Arm/Belt pouch
AZ224	Handstrap tether for tablets

The Pole is an optional accessory for the Leica FLX100 plus smart antenna. To use the Leica FLX100 plus smart antenna on a Pole, the appropriate adapter is required. This mounting allows customers to use the instrument vertically for precise and stable support.

The Universal Handheld Tray is an optional accessory for the Leica FLX100 plus smart antenna.

6.3 Packages for the FLX100 plus Smart Antenna

Overview

Part number, Package	Description
6015968 FLX100 plus Handheld Start package with Zeno Mobile	Leica Zeno FLX100 plus smart antenna including: • Multi-constellation support, GPS, GLONASS, Galileo and BeiDou • Power adapter • USB-C charging cable • USB-C/USB-A cable • Arm/Belt pouch arm bag • Softbag • Universal Handheld Tray • **Zeno Mobile Professional** with 1-year software maintenance
6015969 FLX100 plus Handheld Start package for third party	Leica Zeno FLX100 plus smart antenna including: • Multi-constellation support, GPS, GLONASS, Galileo and BeiDou • Power adapter • USB-C charging cable • USB-C/USB-A cable • Arm/Belt pouch arm bag • Softbag • Universal Handheld Tray • Install **Zeno Connect** from the app stores in order to use third party software

Part number, Package	Description
6015970 FLX100 plus Pole Start package with Zeno Mobile	Leica Zeno FLX100 plus smart antenna including: - Multi-constellation support, GPS, GLONASS, Galileo and BeiDou - Power adapter - USB-C charging cable - USB-C/USB-A cable - Arm/Belt pouch arm bag - Softbag - Zeno Tab 2 Android tablet - Pole Mount Kit for Zeno Tab 2 - GLS30 GNSS telescopic carbon fibre pole 5/8 pole mount to attach a FLX100 plus smart antenna to a Leica GNSS pole **Zeno Mobile Professional** with 1-year software maintenance
6015971 FLX100 plus Pole Start package for third party	Leica Zeno FLX100 plus smart antenna including: - Multi-constellation support, GPS, GLONASS, Galileo and BeiDou - Power adapter - USB-C charging cable - USB-C/USB-A cable - Arm/Belt pouch arm bag - Softbag - Zeno Tab 2 Android tablet - Pole Mount Kit for Zeno Tab 2 - GLS30 GNSS telescopic carbon fiber pole 5/8 pole mount to attach a FLX100 plus smart antenna to a Leica GNSS pole - Install **Zeno Connect** from the app stores in order to use third party software

7   Software Licence Agreement/Warranty

International Limited Warranty

This product is subject to the terms and conditions set out in the International Limited Warranty which you can download from the Leica Geosystems AG home page at Leica Warranty or collect from your Leica Geosystems AG distributor.

Software Licence Agreement

This product contains software that is preinstalled on the product, or that is supplied to you on a data carrier medium, or that can be downloaded by you online according to prior authorisation from Leica Geosystems. Such software is protected by copyright and other laws and its use is defined and regulated by the Leica Geosystems Software Licence Agreement, which covers aspects such as, but not limited to, Scope of the Licence, Warranty, Intellectual Property Rights, Limitation of Liability, Exclusion of other Assurances, Governing Law and Place of Jurisdiction. Please make sure, that at any time you fully comply with the terms and conditions of the Leica Geosystems Software Licence Agreement.

Such agreement is provided together with all products and can also be referred to and downloaded at the Leica Geosystems home page at Hexagon – Legal Documents or collected from your Leica Geosystems distributor.

You must not install or use the software unless you have read and accepted the terms and conditions of the Leica Geosystems Software Licence Agreement. Installation or use of the software or any part thereof, is deemed to be an acceptance of all the terms and conditions of such Licence Agreement. If you do not agree to all or some of the terms of such Licence Agreement, you must not download, install or use the software and you must return the unused software together with its accompanying documentation and the purchase receipt to the distributor from whom you purchased the product within ten (10) days of purchase to obtain a full refund of the purchase price.

Open Source information

The software on the product may contain copyright-protected software that is licenced under various open source licences.

Copies of the corresponding licences
- are provided together with the product (for example in the About panel of the software)
- can be downloaded on
  http://opensource.leica-geosystems.com

If foreseen in the corresponding open source licence, you may obtain the corresponding source code and other related data on http://opensource.leica-geosystems.com.

Contact opensource@leica-geosystems.com in case you need additional information.

PART OF
HEXAGON

- when it has to be **right**

Leica
Geosystems

Specific Absorption Rate (SAR) information:
This Smart Phone meets the government's requirements for exposure to radio waves. The guide lines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health.
FCC RF Exposure Information and Statement:
The SAR limit of USA (FCC) is 0.501W/kg averaged over one gram of tissue. Device types: Smart handheld terminal (FCC ID: RFD-FLX100PLUS, IC: 3177A-FLX100PLUS) has also been tested against this SAR limit. During product certification, the maximum SAR value reported according to this standard is less than 0.501W/kg when correctly worn on the body. This device was tested for typical body-worn operations with the back of the Smart Phone kept 0cm from the body. To maintain compliance with FCC RF exposure requirements, use accessories that maintain a 0cm separation distance between the user's body and the back of the Tablet PC. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided.

Avertissement en franç ás
Information sur l'Absorbance spécifique (SAR):
Ce smartphone répond aux exigences du Gouvernement en matière d'exposition aux ondes radio. Ces lignes directrices sont fondées sur des critères établis par des organismes scientifiques indépendants au moyen d'évaluations périodiques et approfondies de la recherche scientifique. Ces normes comportent une marge de sécurité importante et visent à assurer la sécurité de toutes les personnes, quel que soit leur âge ou leur état de santé.
Informations et déclarations sur l'exposition aux radiofréquences:
La limite SAR pour les États - Unis (IC) est de 0501w / kg en moyenne par gramme de tissu. Le type d'appareil: Smart handterminal (IC: 3177A - FLX100PLUS) a également été testé en fonction de cette limite SAR. La valeur SAR maximale déclarée conformément à la présente norme est inférieure à 0501w / kg si elle est correctement portée sur la carrosserie du véhicule pendant la certification du produit. L'appareil a été testé pour un fonctionnement portable typique, le dos du smartphone étant à 0 cm du corps. Pour maintenir la conformité aux exigences d'exposition aux radiofréquences de fac, utilisez des accessoires qui maintiennent un espacement de 0 cm entre le corps de l'utilisateur et l'arrière de la tablette. Lorsque vous utilisez des ceintures, des étuis et des accessoires similaires, les composants métalliques ne doivent pas être inclus dans leurs composants. L'utilisation d'accessoires qui ne satisfont pas à ces exigences peut ne pas satisfaire aux exigences en matière d'exposition aux radiofréquences et doit être évitée.