

# Leica Zeno GG04 Smart Antenna



## Smart Device Independence

Using the Zeno GG04 smart antenna with your own device is simple, regardless if it runs on Android or Windows platforms. Now you can feel right at home while carrying out your data collection tasks. Bluetooth connectivity ensures cable free operation and high accuracy configuration is easy with just a few clicks in the Zeno Connect application.



## Precise Point Positioning (PPP)

PPP enables the GG04 to achieve high accuracy data collection without the need for a mobile data connection. PPP works by using a satellite based correction service to broadcast data directly to the GG04. Corrected data is processed onboard the antenna and delivered seamlessly to your device. PPP is available anywhere in the world at any time.



## Extensive Software Support

Not only will the Zeno GG04 smart antenna work with Leica Zeno Mobile and Zeno Field software, but also with other popular data collection apps and software. No development efforts are required to achieve centimeter accurate positioning.

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- when it has to be **right**

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# Technical Specifications

## LEICA ZENO GG04 | GNSS TECHNOLOGY

Number of channels	555 channels (more signals, fast acquisition, high sensitivity)
Satellite signal tracking	GPS (L1, L2, L2C, L5), Glonass (L1, L2), BeiDou (B1, B2, B3 <sup>1</sup> ), Galileo (E1, E5a, E5b, Alt-BOC, E6 <sup>1</sup> ), QZSS <sup>2</sup> , SBAS (WAAS, EGNOS, MSAS, GAGAN), L-band
Real-Time and Post-processed	Support of real-time correction service and post-processing to achieve positioning accuracy
Output data protocols	NMEA-0183 (GGA, VTG, GLL, GSA, GQG, GSV, RMC, GST, LLQ) via Zeno Connect on Windows or position provided by Location Service via Zeno Connect on Android
Update rate	20 Hz (0.05 sec) <sup>3</sup>
Post Processing accuracy static mode	Horizontal: 3 mm + 0.5 ppm (rms) <sup>4</sup> Vertical: 6 mm + 0.5 ppm (rms) <sup>4</sup>
Horizontal real-time accuracy (SBAS or external source)	SBAS, L1 only < 0.9 m <sup>4</sup> Spot Lite, PPP (Multi-frequency option needed) < 60 cm <sup>4</sup> after approximately 7 minutes of converging DGNSS, L1 only < 40 cm <sup>4</sup> Spot Prime, PPP (Multi-frequency option needed) < 10 cm <sup>4</sup> after approximately 30 minutes of converging RTK, Multi-frequency < 1 cm + 2 ppm <sup>4</sup>
Vertical real-time accuracy	RTK (Multi-frequency): 2 cm + 1 ppm <sup>4</sup>
Real-time protocols	RTCM 2.x, RTCM 3.0, RTCM 3.1, RTCM 3.2, Leica, CMR, CMR+
Integrated real-time	SBAS <sup>5</sup> (EGNOS, WAAS, MSAS, GAGAN)
Time for initialisation	Typically 6 sec <sup>6</sup>
<b>GG04 SmartAntenna</b>	
User interface	On/Off key Status indicator (LED): satellite tracking, Bluetooth® communication & battery power
Communication port	Bluetooth® 2.0 class 2 & sealed and protected 8-pin Lemo combined USB / power port
Field controller connection	By Bluetooth® or with RS232 cable
<b>Power Management</b>	
Removable battery	GEB212 (7.4 V / 2600 mAh Li-Ion rechargeable)
Battery charging time	2 hours to full charge with GKL341
Power	Nominal 12 V DC Range 10.5 – 28 V DC
Operating time	8 h (RTK) <sup>7</sup> , 10 h (GNSS only) <sup>7</sup>
<b>Physical Specifications</b>	
Weight and dimensions	0.8 kg with all-day battery Height: 0.071 m x Diameter: 0.186 m
Proof against water, sand and dust	IP68 (IEC60529): dust and water-resistant for all conditions: Temporary submersion into water (2 hours in 1.40 m depth) & Protected against blowing rain and dust
Operating / storage temperature range	Operation: -40 to 65 °C (-40°F to +149°F) (ISO 9022-10-08, MIL-STD-810G CHG1 Method 502.6-II & ISO 9022-11-04, MIL-STD-810G CHG1 Method 501.6-II) Storage: -40 to 80 °C (-40°F to +176°F) (ISO 9022-10-08, MIL-STD-810G CHG1 Method 502.6-I & ISO 9022-11-06, MIL-STD-810G CHG1 Method 501.6-I)
Humidity	100%, non-condensing (ISO9022-12-04, ISO9022-13-06, ISO9022-16-02, MIL-STD-810G CHG1 Method 507.6-II)
Drop	Withstands topple over from a 2 m survey pole onto hard surface Withstands 1 m drop onto hard surface
Vibration	Withstands strong vibration (ISO9022-36-05)
<b>Accessories and Optional Features</b>	
Accessories	<ul style="list-style-type: none"> <li>External battery charger</li> <li>Backpack kit</li> <li>Hard carry case</li> <li>2 meter range pole</li> </ul>
Optional Field and Office software	<ul style="list-style-type: none"> <li>Leica Zeno Field</li> <li>Leica Zeno Mobile</li> <li>Leica MobileMatrix</li> <li>Leica Zeno Connect</li> <li>Leica Zeno Office and Leica Zeno Office on ArcGIS</li> </ul>
Optional field computers	<ul style="list-style-type: none"> <li>Leica Zeno 5</li> <li>Leica CS25 rugged Tablet Computer</li> </ul> or with the following 3rd party HW in combination with Leica Zeno Connect: Android phones with Android version > 4.1 Android tablets with Android version > 4.1 Win7/Win8 or Win10 tablet/pc.

<sup>1</sup> Believe to comply, but subject to availability of BeiDou ICD and Galileo commercial service definition.

BeiDou B3 and Galileo E6 will be provided through future firmware upgrade.

<sup>2</sup> Support of QZSS is incorporated and will be provided through future firmware upgrade when QZSS will be operational.

<sup>3</sup> 20 Hz supported in GGA NMEA output.

<sup>4</sup> Measurement precision, accuracy and reliability depends upon various factors including number of available satellites, geometry proximity to base station, multipath effects, ionospheric conditions etc.

<sup>5</sup> WAAS available in North America only, EGNOS available in Europe only, MSAS available in Japan only, GAGAN available in India only.

<sup>6</sup> May vary due to atmospheric conditions, multipath, obstructions, signal geometry and number of tracked satellites.

<sup>7</sup> May vary with temperature, battery age, usage etc.



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