

# Leica Viva GNSS

## GNSS



### Leica Viva GNSS –

Leica GS10 GS15

Leica Viva GNSS

>  
>

RTK

SIM

Leica Viva GNSS

>

web server

RINEX

Leica Viva –

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Leica GS10 / GS15 GNSS receiver	Leica GS10 / GS15 Single Frequency	Leica GS10 / GS15 Basic	Leica GS10 / GS15 Limited	Leica GS10 / GS15 Performance	Leica GS10 / GS15 Professional
<b>GNSS</b>					
GPS L2	*	*	*	*	*
GPS L5	*	*	*	*	*
GLONASS	*	*	*	*	*
Galileo	*	*	*	*	*
<b>RTK</b>					
DGPS / RTCM	*	*	*	*	*
RTK up to 5 km	*	*	*	*	*
RTK unlimited	*	*	*	*	*
Network RTK	*	*	*	*	*
Leica Lite RTK	*	*	*	*	*
<b>5 Hz positioning</b>					
20 Hz positioning	*	*	*	*	*
Raw data logging	*	*	*	*	*
RINEX logging	*	*	*	*	*
NMEA out	*	*	*	*	*
<b>Additional features</b>					
RTK Reference Station functionality	*	*	*	*	*

\* = Standard    \* = Optional

<b>GNSS</b>	No. of channels / Max. simultaneous tracked satellites	120 channels / up to 60 Satellites simultaneously on two frequencies
	Satellite signals tracking	GPS: L1, L2, L2C, L5 / GLONASS: L1, L2 / Galileo (Test): GIOVE-A, GIOVE-B, Galileo: E1, E5a, E5b, Alt-BOC / Compass <sup>1</sup> / SBAS: WAAS, EGNOS, GAGAN, MSAS
	<b>Accuracy (rms) with Real-Time (RTK)<sup>2</sup></b>	
	Standard of compliance	Compliance with ISO17123-8
	Rapid static (phase) / Static mode after initialization	Horizontal: 5 mm + 0.5 ppm (rms) / Vertical: 10 mm + 0.5 ppm (rms)
	Kinematic (phase) / Moving mode after initialization	Horizontal: 10 mm + 1 ppm (rms) / Vertical: 20 mm + 1 ppm (rms)
	<b>On the Fly (OTF) Initialization</b>	
	RTK technology / Reliability of OTF initialization	Leica SmartCheck+ technology / Better than 99,99%
	Time for initialization / OTF range	Typically 8 sec <sup>3</sup> / up to 50 km <sup>2</sup>
	<b>Network RTK</b>	
	NetWork technology	Leica SmartRTK technology
	Supported RTK network solutions / standards	VRS, FKP, iMAX / MAC (Master Auxiliary Concept) approved by RTCM SC 104
<b>Hardware</b>	<b>Environmental specifications</b>	
	Temperature, operating	-40° C to +65° C, compliance with ISO9022-10-08, ISO9022-11-special, MIL STD 810F – 502.4-II, MIL STD 810F – 501.4-II
	Humidity	100%, compliance with ISO9022-13-06, ISO9022-12-04 and MIL STD 810F – 507.4-I
	Proof against: water, sand and dust	IP67 according IEC60529 and MIL STD 810F - 506.4-I, MIL STD 810F – 510.4-I and MIL STD 810F – 512.4-I
	Drops	Withstands 1.0 m drop onto hard surfaces
	Topple over (GS15)	Withstands topple over from a 2 m survey pole onto hard surfaces
	<b>Power &amp; Electrical</b>	
	Power consumption	Typically: 3.2 W, 270 mA
	Internal power supply	Recharge & removable LI-Ion battery, 4.4 Ah / 7.4 V, 2 batteries fit into receiver
	Internal power supply / Operation time GS10 / GS15	15.00 h / 10.00 h receiving RTK data with standard radio <sup>4</sup>
	using 2 internal batteries	13.00 h / 9.00 h transmitting RTK data with standard radio <sup>4</sup> 14.00 h / 7.50 h RTK via GSM / GPRS connection <sup>4</sup>
	<b>Built in data links (GS15)</b>	
	Radio modems	Fully integrated, fully sealed receive / Transmit radios / User exchangeable device
	3G GSM / UMTS (HSDPA) / CDMA phone modem	Fully integrated, fully sealed phone modem / User exchangeable device / User exchangeable SIM card
	<b>External data links</b>	
	Radio modems	Support of any suitable UHF / VHF radio with RS232 interface and operating in transparent mode
	GSM / UMTS(HSDPA) / CDMA phone modems	Support of any suitable GSM / GPRS / UMTS(HSDPA) / CDMA modem

<sup>1</sup> The Compass signal is not finalized, although, test signals have been tracked in a test environment. As changes in the signal structure may still occur, Leica Geosystems cannot guarantee full Compass compatibility.

<sup>2</sup> Measurement precision and accuracy in position and accuracy in height are dependent upon various factors including number of satellites, geometry, observation time, ephemeris accuracy, ionospheric conditions, multipath etc. Figures quoted assume normal to favorable conditions. Times required are dependent upon various factors including number of satellites, geometry, ionospheric conditions, multipath etc. GPS and GLONASS can increase performance and accuracy by up to 30% relative to GPS only. A full Galileo and GPS L5 constellation will further increase measurement performance and accuracy.

<sup>3</sup> Might vary due to atmospheric conditions, signal multipath, obstructions, signal geometry and number of tracked signals.

<sup>4</sup> Might vary with temperatures, age of battery, transmit power of data link device.

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# Leica SmartWorx Viva



## Leica SmartWorx Viva

- SmartWorx Viva
- CS10
- CS15
- DTM
- "Go to Work!"

Simple to use –

Packed with features –

Additional Apps – COGO

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Leica SmartWorx Viva	SmartWorx Viva	SmartWorx Viva LT
<b>General</b>		
Job, data and full coordinate system management	•	•
Data import: ASCII, DXF, LandXML	•	•
Data export: Custom ASCII, DXF, LandXML, FBK, RW5, RAW	•	•
Full map view functionality within data management and Apps	•	•
Viewing of DXF files as background images	•	•
Multiple working styles	•	•
Support of var. total stations: TS/TM30, TPS1200+, TPS1200, FlexLine instruments, TPS1100, TPS 800, 700, 400, 300	•	•
Field to Office data transfer using ftp	•	•
<b>Survey /</b>		
Thematical point, line and area coding and free coding with up to 20 attributes. Codes can be selected from pre-defined list, or manually entered	•	•
Smart and Quick Coding	•	•
Jump between GNSS & TPS Survey with one button press	•	•
Auto logging of points with quality control. Various methods including by time, distance, stop and go	•	•
Measuring of offset points (TPS only)	•	•
Measuring of hidden points with support of numerous devices such as DISTO™ (GNSS only)	•	•
<b>Stakeout /</b>		
Staking of points and DTMs	•	•
Navigate to point using various methods: North, sun, point, to and from total station	•	•
Quality control – checking of coordinate differences before storing	•	•
Automatic selection of next closest point to stake	•	•
Edit heights and offset heights of points	•	•
Acoustic “reversing beep” when getting closer to point	•	•
<b>COGO</b>		
Various computation methods: Inverse, Traverse (distance and bearing), Intersections, Line and Arc Calculations, Line and Arc Segmentations, Shift, Rotate and Scale blocks of points, Area Division	•	•
Comprehensive reporting / cut sheets	•	•
<b>Determine Coordinate Systems</b>		
Rigorous computation of Onestep, Twostep and Classic 3D coordinate systems	•	•
QuickGrid calculations for fast field calibrations	•	•
<b>TPS Setup /</b>		
Various setup methods – Set Orientation, Known Backsight, Multiple Backsights, Height Transfer, Resection	•	•
SmartStation setups	•	•
Update setups later with subsequently measured target points	•	•

• = All options, methods and functionality available  
 • = Limited options, methods or functionality available

Leica SmartWorx Viva Additional optional Apps /	SmartWorx Viva	SmartWorx Viva LT
<b>Reference Line /</b>		
Staking of linear and area objects: Lines, arcs, areas and simple alignments	•	•
Staking of slopes relative to lines and arcs	•	•
Quality control – checking of coordinate differences before storing	•	•
<b>RoadRunner – Road /</b>		
Stake and check alignments: Stringlines, single cross slopes, double cross slopes, batters, surfaces	•	•
Graphical staking and quality control	•	•
Save unfinished tasks for quick and easy resuming of the same task	•	•
Comprehensive reporting / cut sheets	•	•
<b>RoadRunner – Rail /</b>		
Based on RoadRunner with additional functionality and focus for rail construction work	•	•
Suitable for simple designs and complex designs – including handling of multiple canted tracks with external centerline	•	•
Comprehensive reporting / cut sheets	•	•
<b>RoadRunner – Tunnel (TPS only) /</b>		
Based on RoadRunner with additional functionality and focus for tunnel construction work	•	•
Visualization of design and as built data	•	•
Comprehensive reporting / cut sheets	•	•
<b>Volume calculations /</b>		
Measure and compute surfaces and volumes	•	•
Various methods to compute boundary	•	•
DXF export of measured surfaces	•	•
Comprehensive reporting / cut sheets	•	•
<b>Reference Plane / Face Scan /</b>		
Define planes and measure points relative to the plane, or define the boundary of the plane and automatically measure points across the whole plane	•	•
Ideal application for building facade or quarry face measuring	•	•
Comprehensive reporting / cut sheets	•	•
<b>Survey Cross Sections /</b>		
Define automatic coding of a cross section	•	•
<b>Traverse (TPS only) / Полигонски Влак</b>		
Measure, compute and adjust traverses including survey observations	•	•
Comprehensive reporting / cut sheets	•	•
<b>Sets of Angles (TPS only) /</b>		
Measure multiple rounds of angles and distances	•	•
Comprehensive reporting / cut sheets	•	•
<b>TPS Hidden Point (TPS only) /</b>		
Allows hidden points to be measured with a total station using a hidden point rod	•	•
<b>Other Apps</b>		
Many more apps are available. Contact your local Leica Geosystems representative to find out if there is an app for you	•	•

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