Leica GPS1200+ Series

High performance GNSS System

GNSS
future proof

- when it has to be **right**

Leica Geosystems

Leica GPS1200+
The only future proof GNSS

When it says future proof GNSS, it means maximum productivity and reliability. More satellites, more GNSS signals. Today and tomorrow! With Leica GPS1200+ you can be certain that you're ready for the future. Invest today in future proof GNSS technology and be sure that your equipment can track all satellites today and tomorrow. GPS1200+ is the only future proof GNSS System.

Best GNSS and RTK technology
Fast satellite acquisition, high accuracy measurements, tracking to low elevations, the world's first phase multipath mitigation technology, jamming resistant, high up-date rate, low latency, and fast, reliable, long-range RTK.

GNSS/TPS: standardized interface
Keyboard and touch screen, intuitive interface, powerful data management, on-board routines and programs: all easy to use and identical for GNSS and TPS.

SmartRover – extremely light weight
SmartRover weighs just 2.7 kg for a complete cable free all on the pole RTK GNSS rover. Work the complete day in comfort and enjoy full compatibility with SmartStation and SmartPole.

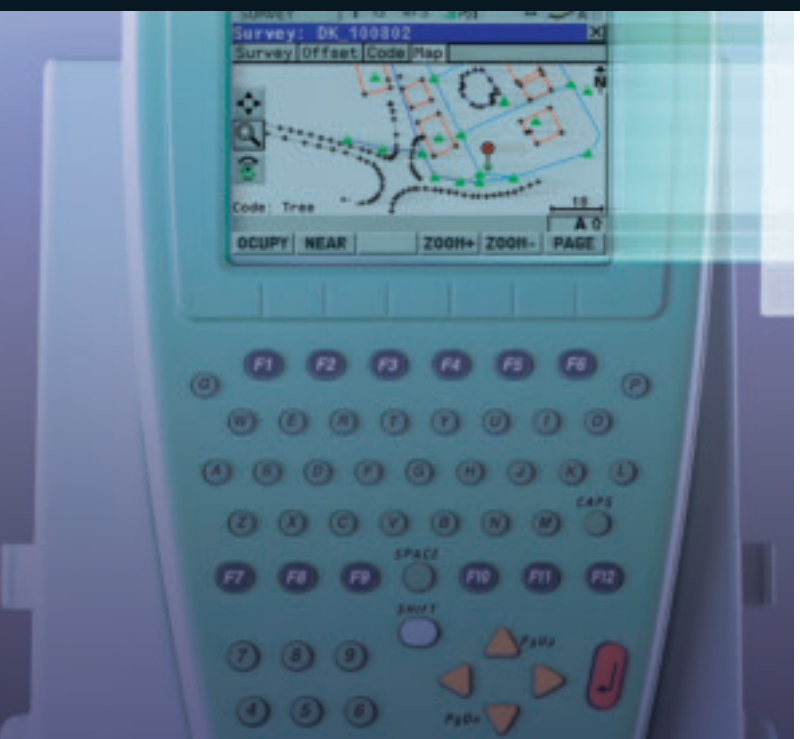
Fully waterproof, incredibly robust
GPS1200+ receivers are designed to work anywhere under the roughest conditions imaginable. They float, withstand falls, jolts and vibrations, operate in rain, dust, sand and snow, at temperatures from –40°C to + 65°C.

Totally versatile
GPS1200+ can be used as a reference or rover in any mode from static to RTK. Small, light, and supporting all formats and communication devices, it can be used on a pole, in a minipack, on a tripod, or even on a construction machine, survey boat or aircraft.

For all applications
You can use GPS1200+ for everything: control, topo, engineering, cadastre, stake out, monitoring, seismic – whatever you want.

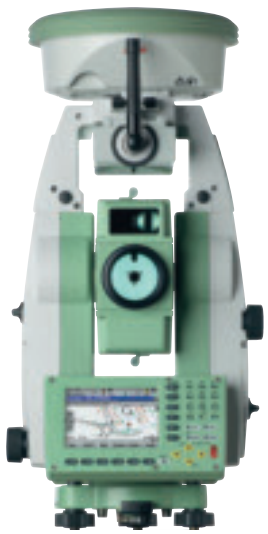
FUNCTION integrated

Combine GNSS and TPS. Use them in the same way.
Change easily from one to the other.
Work faster, more accurately and more efficiently.
Enjoy all the freedom, flexibility and power of System 1200.



Leica SmartStation

TPS1200+ with integrated GNSS. All TPS1200+ can be ugraded to Smart Station.



Leica GPS1200+

Unites top GNSS technology with powerful data management. Perfect for all GNSS applications.

Leica System 1200

GNSS and TPS
Working together
For all applications
Today and in the future

Designed and built to the most stringent standards with the latest measurement technologies, Leica System 1200 instruments are extremely efficient and reliable, and stand up to the severest environments.

A highly intuitive user interface, a multitude of functions and features, powerful data management, and user-programming capabilities are common to both System 1200 GNSS and TPS instruments.

Operators can switch instantly between GNSS and TPS and use whichever is the most convenient and suitable; extra training is not required.

The new high-tech GNSS and TPS instrument of the System 1200 series with identical operation enable you to do every type of job, faster, more accurately and more efficiently than ever before.

And most important, you reduce your costs and increase your profits.

Leica TPS1200+

Top performance, high accuracy total stations do everything you want and much more.

Leica SmartPole

Save time with SmartPoles' setup On-the-fly and easily swap between GNSS and TPS when needed.

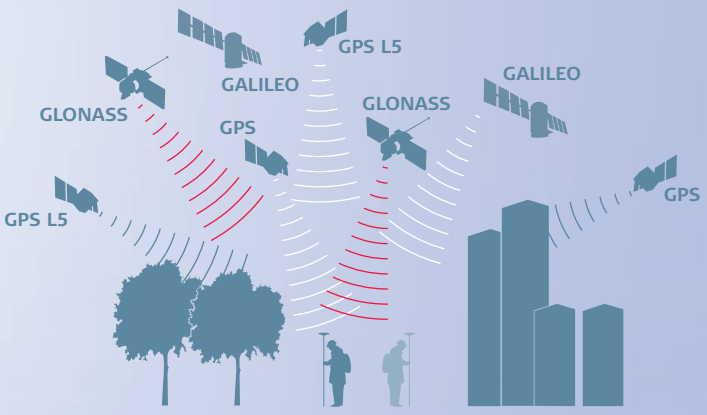
Leica SmartWorx

SmartWorx TPS/GNSS application software is both easy-to-use and extremely powerful.

Leica Geo Office

Everything you need in a single package for TPS and GNSS: import, visualization, conversions, quality control, processing, adjustment, reporting, export etc.

Leica GPS1200+
Fast, accurate, rugged and reliable



SmartTrack+

GNSS technology
GPS1200+ means newest GNSS technology. The third generation of SmartTrack+ measurement engine tracks all existing satellite signals and those planned for the future. This includes GPS L5, Galileo, GAGAN, WAAS, EGNOS, MSAS and Compass signals. More satellites means higher productivity, accuracy and reliability. SmartTrack+ acquires satellites within seconds and is ideal in urban canyons and obstructed areas where other receivers often fail. Uniquely, older GPS1200 receivers can be upgraded with the new SmartTrack+ measurement engine.

SmartCheck+
Continuously checking provides the highest possible reliability. A unique, built-in integrity monitoring system checks all results immediately. SmartCheck+ processes all available GNSS measurements simultaneously for centimeter-accuracy, 20 Hz RTK at 40 km and more. Initialize within seconds and survey in obstructed areas with a GX1230+ (GPS only) sensor or increase productivity with a GX1230+ GNSS/ATX1230+ GNSS (support all available GNSS systems).

SmartRTK
With Leica Geosystems SmartRTK and RTCM 3.1 correction data, performance and peace-of-mind is guaranteed. Never again you will need to worry about loosing consistency and traceability because of a moving virtually computed reference station. SmartRTK uses fixed reference station monuments that surveyors can trust. SmartRTK does not only give benefits with RTCM 3.1, the new atmospheric decorrelator technology provides precise positioning in all Networks regardless of the correction data.

SmartRTK

Exceptionally rugged
Don't worry about how your crews handle GPS1200+. It's built to MIL specs to withstand the roughest use. With its strong, precision-machined magnesium housing, GPS1200+ stands up to drops and falls and the jolts and vibrations of machines.

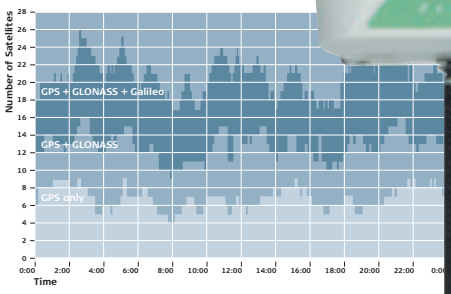
Immune to bad weather
Designed for temperatures from –40° C to +65° C (storage +80° C), GPS1200+ shrugs off arctic cold and blistering heat.
Fully waterproof – withstands immersion to 1 m – sand and dustproof, it operates perfectly in any conditions from tropical rainfall to desert sandstorms.
GPS1200+ just keeps on working.

High contrast touch screen
The high quality 1/4 VGA (11 lines by 32 characters) with optional colour option (RX1250) touch screen guarantees perfect clarity and contrast. Whether in fading light or bright sunshine, you can always read the display perfectly. Operate using the touch screen or the QWERTY keyboard, which-ever you prefer.

With or without controller
Connect the controller to the receiver when you need to input information and make full use of the on-board functions and programs.

RTK/DGPS communication
Radio modems, GSM, GPRS and CDMA modules fit in waterproof housings attached to the receiver. Attach either one or two devices for RTK/DGPS reference and rover applications.

With *Bluetooth*® Wireless-Technology built in to the RX1250 controller complete cable free operation and connectivity to compatible wireless products is available.



GNSS Modernization

When is the right time to invest in a new hybrid GNSS receiver? The answer is when the investment brings significant productivity gains. GLONASS has already proven such gains. GPS L5 and Galileo will bring even more advantages, such as allowing instantaneous ambiguity resolution and longer baseline ranges. An investment in GPS1200+ effectively increases the value of your equipment - a receiver guaranteed to track all satellite signals of today and tomorrow will remain competitive well into the future.

GPS1200+ receivers: GX1230+ GNSS/ ATX1230+ GNSS

- Triple frequency
- GPS/ GLONASS/ Galileo/ Compass[1]
- 120 Channels
- L1/L2/L5 GPS
- L1/L2 GLONASS
- E1/ E5a/ E5b /Alt-BOC Galileo
- 4 SBAS
- Full Real Time RTK
- Use as rover or reference

GX1230+/ GX1220+

- Dual frequency, GPS only geodetic receiver
- Easily upgradeable to GNSS receiver
- 16 L1 + 16 L2 GPS
- 4 SBAS
- Real-Time RTK (or DGPS option)
- GPS L5 and Galileo ready

SmartStation with SmartAntenna

SmartStation is a TPS1200+ with a ATX1230+ GNSS SmartAntenna. All GNSS and TPS operations are controlled from the TPS keyboard, all data are in the same database, all information is shown on the TPS screen. Touch the GPS key, let RTK determine the position to centimeter accuracy, then survey and stake out with the total station. You can do anything with SmartStation. You can also use SmartAntenna independently on a pole with a RX1250 controller.

- **Light, modular equipment**
  Use it the way that suits you best.
- **All on the pole**
  Light weight with excellent balance. Ideal for stakeout on construction sites and other demanding conditions.
- **Pole and minipack**
  Minimum weight in your hand when surveying for hours on end.
- **On a tripod or pillar**
  For geodetic control and reference stations.
- **All in the minipack**
  For 30 cm DGPS, GIS and seismic surveys.

Seamless dataflow

WORKING TOGETHER

FUNCTION integrated

LEICA SYSTEM 1200

Keyboard illumination

Switch on the display and keyboard illumination when working at night. All the keys light up.

Use GPS1200+ for everything

- For RTK, DGPS, and static data logging
- As a rover or reference
- On a pole, tripod, pillar, or in a minipack
- On construction machines, survey boats, or planes
- For every type of application

Choice of RTK pole

Carbon fiber or aluminum pole with adjustable, ergonomic handgrip.

Leica Geo Office

Software support package for GNSS and TPS with tools and components for import, visualization, conversions, quality control, processing, adjustment, reporting, export etc.

CompactFlash cards

Same CompactFlash cards for GNSS and TPS.

Plug-in Li-Ion batteries

For reliable, long-lasting power, GPS1200+ uses the best, high-capacity batteries available. Work for up to 17 hours with just two plug-in, Lithium-ion batteries.

TPS1200+ Total Stations

GNSS and TPS use the same CompactFlash cards, formats and data management. Transfer cards from one to the other and continue working in the same way.

[1] The Compass signal is not finalized, although, test signals have been tracked with GPS1200+ receivers in a test environment. As changes in the signal structure may still occur, Leica Geosystems cannot guarantee full Compass compatibility.

Leica GPS1200+

Extremely powerful
Yet very easy to use

GPS1200+ is loaded with a multitude of features and functions to meet the many different needs of users all over the world, yet it is remarkably easy to use.

GPS1200+'s graphical operating concept is self-explanatory and guides you straight to what you need.

You can use the default settings or, if you prefer, you can set GPS1200+ to operate, display and output data in exactly the way you require.

When you use GPS1200+, you'll find that everything is very easy to understand.

Even better, you'll notice that GPS1200+ and TPS1200+ are fully compatible with the same CompactFlash cards, data management, displays and keyboards.

Depending on the jobs you do, you can switch easily from GNSS to TPS and continue working in exactly the same way.

Operate GPS1200+ using the QWERTY keyboard or the large graphic touch screen, whichever you prefer.

Graphic view mode

Graphic views show your work. Zoom in for details and out for the entire survey. Use the touch screen or keyboard to access data related to points and objects.

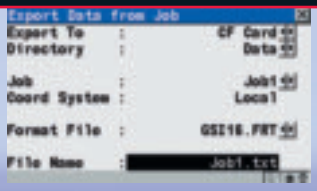
With graphical views you can check quickly in the field for completeness and correctness.

Coding and plan of your work

Define points, lines and areas to build up a plan in the display as you survey. You see immediately what you've done. Attach the codes, attributes and information needed for input into your office or mapping software.

System 1200 has all types of tools and is incredibly versatile.

Data export in any format



Data can be exported directly from GPS1200+ or via Leica Geo Office in various standard formats or in your own userdefined formats for direct input into any type of processing, office, CAD or mapping software.

System 1200 interfaces easily to third-party software packages.

Status icons
Indicate the current measurement and operation modes, recording and battery status, instrument settings etc.

Definable function keys
Allocate commands, functions, displays etc. to these keys for immediate access.

Configurable user menu
Set up your own user menu for the way you and your crews operate. Show what you need and hide the rest.

QWERTY keyboard
The standard QWERTY layout of the controller keyboard facilitates fast, easy input of alphanumeric data and information.

Program menu
Direct access to all loaded application programs such as survey, stakeout, COGO etc. and optional application programs.

Large graphic display
1/4 VGA high-resolution LCD with optional colour display (RX1250), easy to read in any light. Display and keyboard light up for work in the dark.

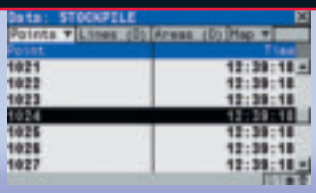
Touch screen
The controller's touch screen provides immediate access without using the keyboard. You can view data and information related to points and objects and call up all types of functions directly via the screen. Use the touch screen and/or the keyboard whichever you prefer.

User definable displays

With GPS1200+ you can define different display masks so that the system shows exactly what you and your crews want to see when surveying in the field. Set the displays according to the jobs you do and the information required.

GPS1200+ adapts perfectly to your needs.

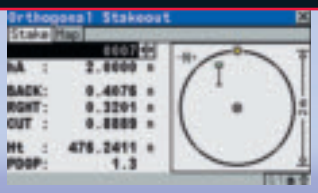
Data management



The powerful database manages data, files, jobs, quality checks etc. You can view, edit, delete, and search with or without filters. Coordinates of points measured more than once are averaged provided that they lie within specified tolerances.

Surveying is much easier and more reliable with System 1200.

Application programs



GPS1200+ is supplied with many useful programs such as Survey, Stakeout, COGO. Other programs such as RoadRunner, Reference Line and DTM Stakeout are optional. You can also write your own programs for special applications in Geo C++.

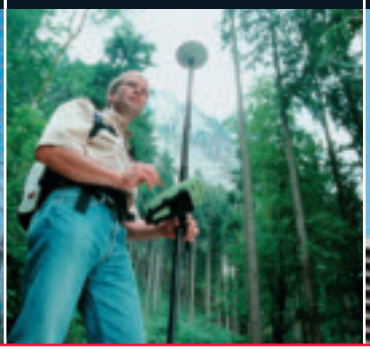
Most programs run on both GNSS and TPS.

WORKING TOGETHER
FUNCTION integrated
LEICA SYSTEM 1200

Leica GPS1200+
Superb measurement and RTK performance

SmartTrack+

SmartCheck



Reference stations

World leading GNSS technology

Low noise, reliable, high accuracy code and phase measurements are the basis of all satellite surveying work. The better the raw data and the more satellites being tracked, the better the performance and the results. GPS1200+'s completely new SmartTrack+ measurement engine and triple frequency antenna are matched with 120 channels perfectly to each other for the best possible receiver performance:

- Acquisition within seconds
- Excellent signal strength
- Tracking to low elevations
- Suppresses phase and code multipath
- Jamming resistant
- Top quality GNSS measurements
- Perfect tracking in dynamic environments
- Totally reliable

Fast, self-checking +40km RTK

The SmartCheck+ algorithms process all available signals and deliver fast, accurate RTK. Centimeter accuracy positions are available continuously at rates of up to 20 Hz. Integrity monitoring runs in the background resolving the ambiguities and verifying the coordinates. Reliability is phenomenal – 99.99% for baselines up to 40 km – and the range is outstanding.

Whatever the work, whether the receiver is on a pole or vehicle, you'll find GPS1200+ RTK to be the perfect tool:

- Initializes within seconds
- Measures amongst trees and obstructions
- Position updates every 0.05 second (20 Hz)
- Latency less than 0.03 second
- Consistent cm-accuracy
- Total reliability

GPS1200+ at CORS sites

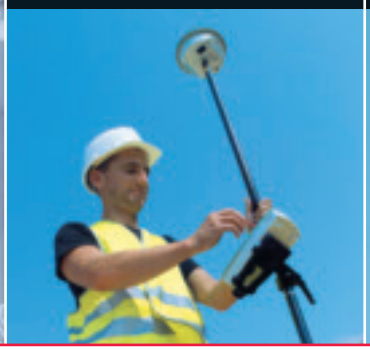
Organizations in many countries are establishing GNSS reference stations. GPS1200+ with a SmartTrack+ antenna or IGS/Dorne & Margolin choke-ring antenna is ideal for a Continuously Operating Reference Station (CORS). It logs data, streams data, outputs RTK and DGPS for transmission to RTK and GIS rovers, and is perfect for use with GNSS SPIDER, Leica's reference station software.

As GPS1200+ accepts all formats (Leica, CMR, RTCM) and outputs all standard messages (NMEA), GPS1200+ RTK rovers work perfectly with all reference station services all over the world.

- With single reference stations
- With networks of stations
- With MAX and i-MAX
- With area corrections (FKP) and virtual reference stations (VRS)

Everything you need for all applications

SmartRover



SmartStation

SmartPole

WORKING TOGETHER

FUNCTION integrated

LEICA SYSTEM 1200

SmartRover – extremely light weight

SmartRover weighs just 2.7 kg for a complete cable free all on the pole RTK GNSS rover. Work the complete day in comfort and enjoy full compatibility with SmartStation and SmartPole.

SmartRover is fully compatible with SmartStation and SmartPole through the interchangeable SmartAntenna. Using *Bluetooth*® Wireless-Technology, the new light weight RX1250 colour display controller communicates with the SmartAntenna to provide RTK positioning to centimeter accuracy. SmartRover delivers many benefits:

- Weighs just 2.7 kg
- Interchange SmartAntenna between SmartStation, SmartPole and SmartRover
- Cable free all on the pole set-up is ideal for construction applications

GNSS & TPS perfectly combined

TPS1200+ total station with GNSS SmartAntenna combined in one easy-to-use instrument. Ideal for measuring to points that cannot be occupied by an RTK rover. Eliminates need for control points, traverses and resections when using a total station. Set up SmartStation and let RTK fix the position to centimeter accuracy, then survey and stake out with the TPS. Once SmartStation is positioned, use the SmartAntenna on a pole with controller and sensor as an RTK rover.

- Use TPS and GNSS together
- Fix the position with RTK, then survey with TPS
- Survey easier and faster
- Do any type of job
- Increase productivity and profits

Instantly switch between GNSS & TPS

Every survey site is different. Some sites are best suited to TPS and others to GNSS. With SmartPole both TPS and GNSS are available simultaneously. When GNSS is restricted by overhead obstructions use TPS; when no TPS line-of-sight is available use GNSS. No longer is it necessary to identify control points in the office and search for control in the field.

SmartPole is fully compatible with System 1200. The same light-weight GNSS SmartAntenna can be used together with a TPS1200+ as a SmartStation, together with a RX1250 controller as a SmartRover or together with the unique light-weight 360° reflector and RX1250 controller as a SmartPole.

- Higher accuracy & consistency of GNSS control
- Save time in planning and executing the survey
- Maximum flexibility and hence productivity

Leica GPS1200+
Technical specifications and system features

GPS1200+ receivers	GX1230+ GNSS/ ATX1230+ GNSS	GX1220+ GNSS	GX1230+	GX1220+	GX1210+
GNSS technology	SmartTrack+	SmartTrack+	SmartTrack	SmartTrack	SmartTrack
Type	Triple frequency	Triple frequency	Dual frequency	Dual frequency	Single frequency
Channels	120 channels L1/L2/L5 GPS L1/L2 GLONASS E1/E5a/ E5b/ Alt-BOC Galileo Compass[1] 4 SBAS	120 channels L1/L2/L5 GPS L1/L2 GLONASS E1/E5a/ E5b/ Alt-BOC Galileo Compass[1] 4 SBAS (with DGPS option)	16 L1 + 16 L2 GPS 4 SBAS	16 L1 + 16 L2 GPS 4 SBAS (with DGPS option)	16 L1 GPS 4 SBAS (with DGPS option)
Upgrade to GX1230+ GNSS	-	Yes	Yes	Yes	Yes
RTK	SmartCheck+	No	SmartCheck	No	No
Status indicators	3 LED indicators for GX1200+: power, tracking, memory				

GPS1200+ receivers	GX1230+ (GNSS)/ GX1220+ (GNSS)	GX1210+	ATX1230+ GNSS
Ports	1 power port, 3 serial ports, 1 controller port, 1 antenna port		1 power/controller port, *Bluetooth*® Wireless-Technology port
Supply voltage, Consumption	Nominal 12 VDC 4.6 W receiver + controller + antenna		Nominal 12 VDC 1.8 W
Event input and PPS	Optional: 1 PPS output port 2 event input ports	Optional: 1 PPS output port 2 event input ports	
Standard antenna **Built-in groundplane**	SmartTrack+ AX1203+ GNSS Built-in groundplane	SmartTrack AX1201 Built-in groundplane	SmartTrack+ ATX1230+ GNSS Built-in groundplane

The following apply to all receivers except where stated.

Power supply	Two Li-Ion 4.4 Ah/7.4 V plug into receiver. One Li-Ion 2.2 Ah/7.4 V plugs into ATX1230+ GNSS and RX1250.
Plug-in Li-Ion batteries Same for GNSS and TPS	Power receiver + controller + SmartTrack antenna for about 17 hours (for data logging).
	Power receiver + controller + SmartTrack antenna + low power radio modem or phone for about 11 hours (for RTK/DGPS). Power SmartAntenna + RX1250 controller for about 6 hours (for RTK/DGPS)
External power	External power input 10.5 V to 28 V.
Weights	Receiver 1.20 kg. Controller 0.48 kg (RX1210) and 0.75 kg (RX1250). SmartTrack antenna 0.44 kg. SmartAntenna 1.12 kg. Plug-in Li-Ion battery 0.11 kg (2.2 Ah) and 0.2 kg (4.4 Ah)
	Carbon fiber pole with SmartTrack antenna and RX1210 controller: 1.80 kg.
	All on pole: carbon fiber pole with SmartAntenna, RX1250 controller and plug-in batteries: 2.74 kg.

Temperature ISO9022 MIL-STD-810F	Operation:	Receiver	−40° C to +65° C
		Antennas	−40° C to +70° C
		Controllers	−30° C to +65° C
		Controller RX1250c	−30° C to +50° C
	Storage:	Receiver	−40° C to +80° C
		Antennas	−55° C to +85° C
		Controllers	−40° C to +80° C
		Controller RX1250c	−40° C to +80° C
Humidity ISO9022, MIL-STD-810F	Receiver, antennas and controllers Up to 100 % humidity.		
Protection against water, dust and sand IP67, MIL-STD-810F	Receiver, antennas and controllers: Waterpoof to 1 m temporary submersion. Dust tight		
Shock/drop onto hard surface	Receiver: withstands 1 m drop onto hard surface. Antennas: withstand 1.5 m drop onto hard surface.		
Topple over on pole	Receiver, antennas and controllers: withstand fall if pole topples over.		
Vibrations ISO9022 MIL-STD-810F	Receiver, antennas and controllers: withstand vibrations on large construction machines. No loss of lock.		

[1] The Compass signal is not finalized, although, test signals have been tracked with GPS1200+ receivers in a test environment. As changes in the signal structure may still occur, Leica Geosystems cannot guarantee full Compass compatibility.

SmartTrack+ **Advanced GNSS measurement technology**	Time needed to acquire all satellites after switching on: typically about 50 seconds. Re-acquisition of satellites after loss of lock (e.g. passing through tunnel): typically within 1 second.
	Very high sensitivity: acquires more than 99 % of all possible observations above 10 degrees elevation. Very low noise. Robust tracking. Tracks weak signals to low elevations and in adverse conditions. Multipath mitigation. Jamming resistant.
	Measurement precision: Carrier phase on L1: 0.2 mm rms. On L2: 0.2 mm rms. Code (pseudorange) on L1 and L2: 20 mm rms.
SmartCheck+ **Advanced, long range RTK technology**	Initialization typically 8 seconds. Position update rate selectable up to 20 Hz. Latency < 0.03 secs. Range 40 km or more in favorable conditions. Self checking.
Accuracies	Kinematic Horizontal: 10 mm + 1 ppm Vertical: 20 mm + 1 ppm Static (ISO 17123-8) Horizontal: 5 mm + 0.5 ppm Vertical: 10 mm + 0.5 ppm
	Reliability: 99.99 % for baselines up to 40 km.
	Formats supported for transmission and reception: Leica proprietary (Leica, Leica 4G), CMR, CMR+, RTCM V2.1/2.2/2.3/3.0/3.1.
Reference station networks	RTK rover fully compatible with Leica's Spider i-MAX & MAX formats, VRS and Area Correction (FKP) reference station networks.
DGPS GX1230+ (GNSS), ATX1230+ GNSS, GX1220+ (GNSS) – standard GX1210+ – optional	DGPS, includes support of MSAS, WAAS, EGNOS and GAGAN. RTCM V2.1/2.2/2.3/3.0/3.1. formats supported for transmission and reception. Baseline rms: typically 25 cm rms with suitable reference station.
Position update rate and latency	Applies to RTK, DGPS and navigation positions. Update rate selectable from 0.05 sec (20 Hz) to 1 sec. Latency less than 0.03 secs.
NMEA output	NMEA 0183 V3.00 and Leica proprietary.
Post-processing with Leica Geo Office software **All GPS1200+ receivers**	Horizontal: 10 mm + 1 ppm, kinematic Vertical: 20 mm + 1 ppm, kinematic Horizontal: 5 mm + 0.5 ppm, static Vertical: 10 mm + 0.5 ppm, static For long lines with long observations Horizontal: 3 mm + 0.5 ppm, static Vertical: 6 mm + 0.5 ppm, static
Notes on performance and on accuracies	Figures quoted are for normal to favorable conditions. Performance and accuracies can vary depending on number of satellites, satellite geometry, observation time, ephemeris, ionosphere, multipath etc.

Controllers **RX1210/RX1250**	High contrast, 1/4 VGA display with colour option (RX1250) Touch screen, 11 lines x 32 characters. Windows CE 5.0 on RX1250. Full alphanumeric QWERTY keypad. Function keys and user definable keys. Illumination for screen and keys. Can also be used with TPS1200+ for alphanumeric input and extensive coding.
Operation with controller Same for GNSS and TPS	Via keypad and/or via touch screen. Graphical operating concept. Function keys and user definable keys. All information displayed.
Displayed information	All information displayed: status, tracking, data logging, database, RTK, DGPS, navigation, survey, stakeout, quality, timer, power, geographical, cartesian, grid coordinates etc.
Graphical display of survey Same for GNSS and TPS	Graphical display (plan) of survey. Zooming. Can access surveyed points directly via touch screen.
Stakeout display Same for GNSS and TPS	Graphical with zoom. Digital, polar and orthometric. Accuracy: 10 mm + 1 ppm at 20 Hz (0.05 sec) update rate. No degradation with high update rates.
Operation without controller GX1200+ only	Automatic on switching on. LED status indicators. For reference stations and static measurements.
Data logging Same cards used for GNSS and TPS	On CompactFlash cards: 256 MB and 1 GB Optional internal receiver memory: 256 MB.
Capacity	64 MB sufficient for (30 % less for GPS/GLONASS): About 500 hours L1 + L2 data logging at 15 sec rate. About 2 000 hours L1 + L2 data logging at 60 sec rate. About 90 000 RTK points with codes.
Data management Same for GNSS and TPS	User definable job management. Point identifiers, coordinates, codes, attributes etc.
	Search, filter and display routines. Multi point averaging. Five types of coding systems cover all requirements.
Coordinate systems Same for GNSS and TPS	Ellipsoids, projections, geoidal models, coordinate, transformations, transformation parameters, country specific coordinate systems. Fully support of RTCM 3.1 coordinate system transfer.
Application programs Same for GNSS and TPS	Standard: Full range of COGO functions. Hidden point.
	Optional: RoadRunner, Reference Line, DTM Stakeout, Reference Plane, Area Division and X-Section Survey, DXF Export, LandXML Export and Volume Calculations
Programmable Same for GNSS and TPS	User programmable in GeoC++. Users can write and upload programs for their own special requirements and applications.
Communication **Data links**	One or two of the following devices can be connected: Radio modem, GSM, GPRS, CDMA.
	Different frequencies and/or formats can be received and transmitted. Time slicing is supported.

Whether you want to survey a parcel of land or a construction site, a facade or indoors to create as-built plans or carry out high-precision measurements of bridge and tunnel constructions – Leica Geosystems' surveying instruments provide the right solution for all measuring tasks.

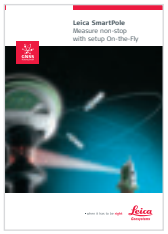
The System 1200 Series instruments as well as the software are designed to meet the daily challenges of modern surveying. They all have outstanding, easy to read and user-friendly interfaces. Their straightforward menu structures, their clearly outlined scope of functions and high technology perfectly mate GNSS and TPS applications in the field. Whether you use the advantages of both technologies combined or each separately – due to the exceptional flexibility of Leica Geosystems instruments, reliable and productive surveying is assured.

When it has to be right.

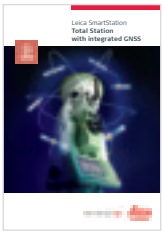
TQM
ISO 9001 / ISO 14001

Total Quality Management – our commitment to total customer satisfaction.

Ask your local Leica Geosystems dealer for more information about our TQM program.



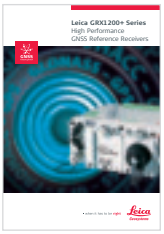
Leica SmartPole
Product brochure



Leica SmartStation
Product brochure

Leica TPS1200+
Product brochure

Leica System 1200 Software
Product brochure



Leica GRX1200+
Product brochure

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- when it has to be **right**

Leica Geosystems