Leica GPS1200+ Series
Equipment List

GNSS
future proof

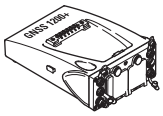
- when it has to be **right**

Leica Geosystems

GPS & GNSS Receivers and Antenna

1. GPS & GNSS Receivers

Select GPS Receiver



766 709 GX1210+, Single Frequency Survey GPS Receiver.
766 710 GX1220+, Geodetic GPS Dual Frequency Receiver. Sensor can be upgraded to GNSS receiver.
766 711 GX1230+, Geodetic GPS Dual Frequency RTK Receiver. Sensor can be upgraded to GNSS receiver.

Select GNSS receiver

766 713 GX1220+ GNSS, Geodetic GPS/GLONASS/Galileo Triple Frequency Receiver.
Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.
766 712 GX1230+ GNSS, Geodetic GPS/GLONASS/Galileo Triple Frequency RTK Receiver.
Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.

2. GPS & GNSS Antennas

Select the antenna for the receiver. Standard antennas are suitable for most applications. Choke ring antennas are for special applications.

All GPS & GNSS antennas have a 5/8" thread and screw directly onto the GRT146 carrier and onto the poles with 5/8" screw.

Carriers and poles with a stub are also available. For set ups on these carriers and poles, a screw-to-stub adapter is needed for the GPS & GNSS antenna.

2.1 Standard Antenna for GX1210+ Receiver

733 251 AX1201, single frequency antenna for GX1210+ Receiver.

2.2 Standard Antenna for GX1220+, GX1230+, GX1220+ GNSS, GX1230+ GNSS Receivers

766 714 AX1203+ GNSS, GPS/GLONASS/Galileo Triple Frequency antenna with 5/8" thread for GX1200+ (GNSS) receivers.

2.3 Choke Ring Antenna for GX1200+ (GNSS) and GRX1200+ (GNSS) Receivers

755 267 AT504 GG, GPS/GLONASS dual-frequency choke-ring antenna for GPS/GLONASS receivers. Dorne-Margolin antenna element, JPL design. Conforms to IGS Typ T specification for GPS antennas.
765 733 AR25, GNSS choke- ring antenna for GPS/GLONASS/Galileo receivers. Includes L-Band signals.
667 140 GVP601, Weather-protection radome for AT504 choke ring antenna.

2.4 SmartAntenna for RX1250

766 715 ATX1230+ GNSS, GPS/GLONASS/Galileo Triple Frequency Antenna for RX1250. Can be used with TPS1200+ instruments for SmartStation and SmartPole setup. Bluetooth capable.
Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.

2.5 Screw-to-Stub Adapter for GPS & GNSS Antennas

667 217 GAD31, Screw-to-stub adapter for fitting GPS antenna on carriers with stub and poles with stub.

3. Antenna Cables

3.1 Short Antenna Cables

667 200 GEV141, 1.2m antenna cable.
667 201 GEV142, 1.6m extension for antenna cable.
724 969 GEV194, 1.8m antenna cable. To be used for balanced all-on-the-pole setup.

3.2 Medium Length Antenna Cables

636 959 GEV120, 2.8m antenna cable.
632 372 GEV119, 10m antenna cable.

3.3 Extra Long Antenna Cables

632 390 GEV108, 30m antenna cable.
664 813 GEV134, 50m antenna cable.
713 483 70m antenna cable.

3.4 SmartRover Cables

733 299 GEV173, 1.2m cable, to connect ATX1230+ GNSS SmartAntenna with RX1250 Controller.

Controller and Power Supply

4. Controller

Display and keyboard for GPS & GNSS Receivers

4.1 GX1200+ Receivers

At least one controller is needed for each set of GPS Receivers. A controller is needed for each receiver that is used as a rover for stop & go, kinematic, real time. The best is to have one controller for each receiver. The controller can connect directly to the GPS Receiver or can be connected using a cable.

733 260 RX1210T, System 1200 Controller with touch screen, alpha keyboard, 2 x GDZ56 pens for touch screen, user manual. Can be used as GX1200+ Controller or TPS1200+ remote control (with ext. battery and ext. radio).
733 266 GHT41, Hand strap for RX1200 Series Controller with utility hook for attaching to belt or tripod.
733 283 GEV163, 1.8m Controller cable connects RX1200 Controller series to GX1200+ GPS Receiver.
733 284 GEV164, 1.1m Cable, connecting RX1200 Controller series to GPS Receiver. To be used for balanced all-on-the-pole setup.

4.2 SmartAntenna

One controller is needed for each SmartAntenna (ATX1230+ GNSS). The controller can be connected to the SmartAntenna with a Bluetooth connection or can be connected using a cable.

745 501	RX1250X, Windows CE System 1200 GPS Controller with monochrome touch screen, alpha keyboard, 2 x GDZ56 pens for touch screen, user manual.
752 847	RX1250Xc, Windows CE System 1200 GPS Controller with colour display, touch screen, alpha keyboard, 2 x GDZ56 pens for touch screen, user manual.
747 322	RX1250 GPS Survey functionality, provides data logging and real-time functionality.
733 266	GHT41, Hand strap for RX1200 Series Controller with utility hook for attaching to belt or tripod.
733 299	GEV173, 1.2m cable, to connect ATX1230+ GNSS SmartAntenna with RX1250 Controller.

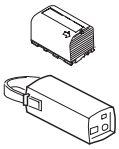
5. Power Supply Equipment

Select batteries and charger. A cable is needed to connect an external battery or car battery.

5.1 Batteries

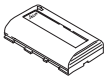
5.1.1 For the GX1200+ GPS Receivers

The standard choice is normally 2 plug-in GEB221 batteries for each GX1200+ Receiver.
The GEB171 external battery is intended for measurements of long duration.



733 270	GEB221, Lithium-Ion battery, 7.4V/4.4Ah, rechargeable. To be used with TPS1200+ and GPS1200+ series.
727 367	GEB171, External universal battery, NiMH, 12V/9Ah, rechargeable.

5.1.2 For the SmartRover plus RX1250



733 269	GEB211, Lithium-Ion battery, 7.4V/2.2Ah, rechargeable. To be used with TPS1200+ and GPS1200+ series.

5.2 Battery Chargers

5.2.1 Professional Charger

Recommended model for all Leica batteries. Will charge 4 GEB211 or 4 GEB221 plug-in batteries and 2 GEB171 external batteries. Intelligent charging - will not overcharge.

733 271	GKL221, Charger PRO. To be used with up to two charging adapters GDI221 or GDI222, Charger cable and net adapter included.
733 323	GDI221, Adapter for GKL221 for charging 2 Li-Ion batteries GEB221, GEB211.
734 389	GDC221, Car adapter cable for the GKL221 charger. Allows the use of the GKL221 with a cigarette lighter; 12V24V DC/DC Converter.

5.2.2 Basic Charger

734 752	GKL211, Charger BASIC, for Li-Ion batteries GEB221 and GEB211, car adapter cable and net adapter included.

5.3 Power Cables

Connect external battery to GPS & GNSS Receiver

560 130	GEV97, 1.8m power cable, connects external battery GEB171 to GPS1200+ receiver.
439 038	GEV71, 4m car battery cable connects GX1200+ receivers to 12V car battery.
756 365	GEV215, Y-cable to power RX1250/RX1250c and ATX1230+ GNSS with external battery.

Data Recording and Transfer, Transport Case, Tripods and Accessories

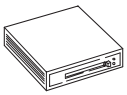
6. Data Recording and Data Transfer

Select the data recording medium. The normal medium is a CompactFlash card. Internal memory is optional for GX1200+ Receivers.

For data transfer from CompactFlash cards, use the card slot available on many PCs. If no card slot is fitted, a card reader will be needed.

6.1 CompactFlash Cards and Card Reader

733 257 MCF256, CompactFlash card 256MB
745 995 MCF1000, CompactFlash card 1GB
733 258 MCFAD1, CompactFlash PC Card adapter



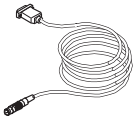
733 259 MCR5, Card reader for CompactFlash card

6.2 Internal Memory Option for GX1200+ and GRX1200+ GNSS Receivers

733 320 SRIM256, Internal memory 256 MB for GPS Receiver. Fitted at factory if ordered together with Receiver.

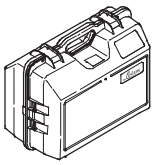
6.3 Data Transfer Cable

Essential cable, at least one should be ordered for each set of GPS Receivers.



733 280 GEV160, 2.8m Data transfer cable, connects GX1200+ Receiver Ports 1,2 or 3 to PC for data transfer, firmware upload etc. Lemo to 9 pin RS232 serial connector.
733 281 GEV161, 2.8m Data transfer cable. Connects RX1250 Controller Lemo Port to PC for data transfer, firmware upload etc.. Lemo to USB connector.
734 755 GEV195,2.8m Data transfer cable, Lemo to USB connector (incl. USB electron ic). Connects GPS receiver to PC for data transfer, firmware upload etc. PC driver included on CD.
733 282 GEV162, 2.8m Data transfer cable. Connects GPS1200+ Receiver RX Controller port, RX1250 Controller or ATX SmartAntenna to PC for data transfer, firmware upload etc. Lemo to 9 pinRS232 serial connector.
758 468 GEV218, 2.0m serial data transfer cable, Lemo to USB connector (Incl. USB electronic). Connects RX1250 Controller Series to PC for serial data transfer. PC driver included on CD.

7. Transport Container



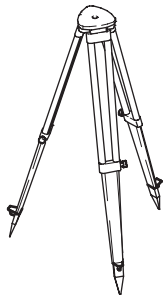
733 267 GVP623, Hard container for GX1200+ and GRX1200+ Receivers, AX1201/AX1203+ GNSS Antenna, RX1200 Controller series, cables and accessories.
754 598 GVP640, Hard container for System 1200 SmartRover, SmartPole (ATX1230+ GNSS, RX1250, GRZ122) and Smart Station.
748 994 GVP637, Hard container for GNSS SmartRover (ATX1230+ GNSS and RX1250 Controller) with accessories for pole and tripod setup.

8. Set-up on Tripod

For static, rapid static, reference station

Select 1 tripod, 1 tribrach, 1 carrier, 1 height hook

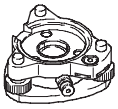
8.1 Tripods



399 244 Tripod GST05, telescopic, with polymer coating, with accessories.
563 630 Aluminium-Tripod GST05L, telescopic, with accessories.

8.2 Tribrachs

Tribrach with optical plummet is needed for GRT144 and GRT146 carriers. Tribrach without optical plummet is needed for SNLL laser plummet carrier.

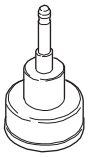


667 307 GDF122 Tribrach, with optical plummet, pale green.
667 308 Tribrach GDF112 BASIC, with optical plummet, pale green/red.

8.3 Carriers

The GRT146 carrier has a 5/8" screw. The GPS antenna screws on directly.

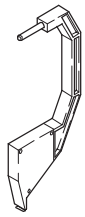
The GRT144 and SNLL carriers have a stub fitting. The GPS antenna must be fitted with a screw-to-stub adapter for setting-up on these carriers.



667 216 GRT146, Carrier with 5/8 inch screw, GPS antenna screws on directly.
667 313 Carrier GRT144 for GPS antenna, EDM reflectors and target plates, pale green.
667 217 GAD31, Screw-to-stub adapter for fitting GPS antenna on carriers with stub and poles with stub.

8.4 Height Hook

Fits into carrier. For measuring antenna heights



667 244 GZS 4-1 Height hook with integrated tape measure. Supplied with additional tape graduated in feet and inches.

8.5 Bracket

Bracket allows GHT56 to be attached to a tripod

747 817 GHT57, Bracket to mount GHT56 and RX1250 to a tripod

Pole, Accessories and Minipack

9. Set-up on Pole

For stop & go, kinematic, real-time rover
Select the pole: aluminium or carbon fibre.

9.1 Aluminium Pole

This pole uses grip 667 223 and must comprise of 1 bottom section and 1 top section. There is a choice of top sections:

667 223 GHT25, Grip with circular bubble and fixing element.
667 221 GLS17, Bottom section aluminium pole with steel tip.
667 222 GLS18, Top section aluminium pole with 5/8" screw.
Or
667 224 GLS19, Top section aluminium pole with stub.

9.2 Carbon Fibre Pole (Screw Together)

This pole uses grip 667 223 and must comprise of 1 bottom section and 1 top section. There is a choice of top sections:

667 223 GHT25, Grip with circular bubble and fixing element.
667 225 GLS20, Bottom section carbon-fibre pole with steel tip.
667 226 GLS21, Top section carbon-fibre pole with 5/8" screw.
or
667 227 GLS22, Top section carbon-fibre pole with stub.

9.3 Carbon Fibre Telescopic Pole

This pole uses clamp arrangement 742 007

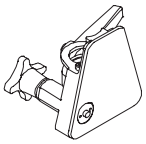
752 292 GLS30, GPS telescopic carbon-fibre pole with circular bubble and 5/8" screw, snap-locks at 2,00m.

742 007 GHT52, Clamp arrangement for attaching the GHT39 or GHT56 to all GLS poles.

9.4 GX1200+ Minipack set-up: Controller and GPS Antenna on Pole and GX1200+ Receiver in Minipack

733 264 GHT39, Holder for attaching RX1200 Controller Series to all poles (except mini poles).
667 137 Minipack, holds GPS Receiver (and modems).

9.5 GX1200+ All-on-Pole set-up



733 264 GHT39, Holder for attaching RX1200 Series Controller to all poles (except mini poles).
733 265 GHT40, Holder for all variants of GX1200+ Receivers for balanced all-on-the-pole setup.
738 169 GHT50, Holder for for all variants of GX1200+ Receiver with controller on pole, for all-on-the-pole setup with minimum weight.

9.6 SmartRover All-on-Pole set-up without using radio/GSM in GFU housing

733 264 GHT39, Holder for attaching RX1200 Controller Series to all poles (except mini poles).

9.7 SmartRover All-on-Pole set-up using radio/GSM in GFU housing

747 096 GHT56, Holder for attaching RX1250 Controller and GFU modem housing to all poles (except mini poles).

9.8 Quickstand

For supporting pole during rapid static measurements. Not suitable for long duration measurements.

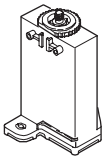
560 138 Quickstand with 3 telescopic legs, for aluminium or carbon fibre pole.
667 319 GSR111 Dual-strut support, for all GLS poles.

Radio Modems, Radio Antennas and Accessories

10. Radio Modem, Radio Antennas and Accessories

For use with the GX1230+, GX1230+ GNSS Receiver and SmartRover for real-time or DGPS
For use with the GX1210+ and GX1220+, GX1220+ GNSS Receivers for DGPS

10.1 Satelline Radio Modems and Accessories



733 275	GFU14-0, Satelline 3AS radio modem (433.525 MHz, 25.0 kHz channel spacing, 0.5 W) already intergrated into housing, fits on side of GPS Receiver.
733 276	GFU14-1, Satelline 3AS radio modem (406.425 MHz, 25.0 kHz channel spacing, 1.0 W) already intergrated into housing, fits on side of GPS Receiver.
738 272	GFU14-2, Satelline 3AS radio modem (445.000 MHz, 12.5 kHz channel spacing, 1.0 W) already intergrated into housing, fits on side of GPS Receiver.
738 273	GFU14-3, Satelline 3AS radio modem (443.000 MHz, 12.5 kHz channel spacing, 1.0 W) already intergrated into housing, fits on side of GPS Receiver.
738 274	GFU14-4, Satelline 3AS radio modem (440.550 MHz, 25.0 kHz channel spacing, 0.5 W) already intergrated into housing, fits on side of GPS Receiver.
738 275	GFU14-5, Satelline 3AS radio modem (458.150 MHz, 12.5 kHz channel spacing, 1.0 W) already intergrated into housing, fits on side of GPS Receiver.
738 276	GFU14-6, Satelline 3AS radio modem (439.8625 MHz, 12.5 kHz channel spacing, 1.0 W) already intergrated into housing, fits on side of GPS Receiver.
753 928	GFU14-7, Satelline 3AS radio modem (464.5000 MHz, 25.0 kHz channel spacing, 1.0 W) already intergrated into housing, fits on side of GPS Receiver
756 623	GFU14-8, Satelline 3AS radio modem (458.6000 MHz, 25.0 kHz channel spacing, 0.5 W) already intergrated into housing, fits on side of GPS Receiver.
639 968	GEV125 1.8m Cable, 15 pin RS232 to 8 pin LEMO. Connects Satelline radio modem to GPS receiver. Only required if housing not used.

10.1.1 Programming Cable for Satelline Radio Modem

733 297	GEV171, 1.8m cable to program the Satelline 3AS radio modem inside the GFU14 housing.
762 026	GEV221, Y-cable, connects Satelline 3AS Epic Pro radio to GPS1200+ receiver and 12V car battery.

10.2 Pacific Crest Radio Modems

Pacific Crest Radio Modems must be ordered directly from your local Pacific Crest Office or Representative. PDL receive only modems built into the Leica GFU radio housing with 12.5 or 25kHz channel spacing within the following frequency bands are available:

410 - 430MHz
430 - 450MHz
450 - 470MHz
223 - 235MHz

10.3 Gainflex Radio Antennas

Select according to frequency of radio modem

639 964	GAT1, Gainflex radio antenna, frequency range 400 – 435MHz.
667 243	GAT2, Gainflex radio antenna, frequency range 435 – 470MHz.

10.4 Antenna Cables Connecting Radio Modem to Gainflex Radio Antenna

Note that the cables are the same as for GPS antennas.

– Use 1.2 m cable for real-time rover, for GIS, and for real-time reference with one tripod with radio modem on tripod.
– Use 2.8 m cable with 1.6 m extension for real-time reference with two tripods with radio modem in container.

667 200	GEV141, 1.2m antenna cable.
636 959	GEV120, 2.8m antenna cable.
667 201	GEV142, 1.6m extension for antenna cable.

10.5 GFU Connection Cable

733 288 GEV167, 0.5m cable, connects System 500 GFU housings to all GX1200+ receivers.

10.6 Accessories Needed to Set-up Gainflex Radio Antenna

10.6.1 Gainflex Radio Antenna Attached to AX1201/AX1203+ GNSS Antenna

For real-time rover with all-on-pole
For GIS set-up
For real-time reference using one tripod only

667 219 Arm 15cm long, attaches to GPS antenna. Gainflex antenna fits on arm. Antenna cable connects to arm.

10.6.2 Gainflex Radio Antenna on Telescopic Rod

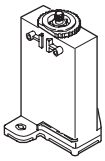
For real-time rover with terminal and GPS antenna on pole and receiver with radio modem in minipack.
For real-time reference with two tripods.

667 228 Telescopic rod with 5/8 inch screw. Fits in minipack 667137. Fits in base 667236.
667 220 Arm 3cm long, screws on telescopic rod. Gainflex antenna fits on arm. Antenna cable connects to arm.
734 388 GAD46, Double arm adapter, screws on telescopic rod. Allows to connect up to 2 mobile phone/radio antennas and up to 2 antenna cables on arm.
667 236 Base with 5/8 inch screw, for setting up telescopic rod on tripod.

11. Mobile Phones and Accessories

For use with the GX1230+/GX1230+ GNSS Receiver and SmartRover for real-time or DGPS. For use with the GX1210+/GX1220+/GX1220+ GNSS Receiver for DGPS.

11.1 Mobile Phones



750 242 GFU24, Housing with Siemens MC75 GSM/GPRS Module (Quad-Band GSM 850/900/1800/1900 MHz), fits on side of GX1200+ Receiver or GHT56 for the SmartRover.
744 754 GFU19, US CDMA cellular phone Multitech MTMMC-C-N3 for Verizon network, integrated into housing, fits on side of GX1200+ receiver or GHT56 for the SmartRover.
750 243 GFU25, CDMA cellular phone for Canada, Multitech MTMMC-C-N12 for Bell Mobility network, integrated into housing, fits on side of GX1200+ Receiver or GHT56 for the SmartRover.
760 557 GFU26, US CDMA cellular phone Multitech MTMMC-C-N14 for Alltel network, integrated into housing, fits on side of GX1200+ receiver or GHT56 for the SmartRover.

11.2 Antennas for Mobile Phones

667 237 GAT3, Antenna for 900/1800 MHz mobile network.
734 756 GAT5, Antenna for US mobile network (800/1900MHz).

Receiver Options, Application Programs and Receiver Conversions

12. Options for GNSS Receivers

12.1 GNSS Software options (For GNSS receivers only)

12.1.1 GLONASS related options

751 186	GSW565, GLONASS option for GX1230GG, GX1220GG, GX1230+ GNSS, GX1220+ GNSS and RX1250 Controllers. Without GLONASS option, GLONASS is only enabled each Wednesday.
752 873	GSW583, GLONASS option for TPS1200 series total stations. Without this option, GLONASS is only enabled each Wednesday.
6002647	Pre-Signal Bundle for GX1220+ GNSS, GX1230+ GNSS and RX1250 Controllers, consists of GLONASS option, GPS L5 option and Galileo option.

12.1.2 Galileo related options

766 716	GSW678 Galileo option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers.
766 717	GSW679 Galileo option for TPS1200 series total stations (SmartStation).
6002647	Pre-Signal Bundle for GX1220+ GNSS, GX1230+ GNSS and RX1250 Controllers, consists of GLONASS option, GPS L5 option and Galileo option.

12.1.3 GPS L5 related options

768 423	GSW705 GPS L5 option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers.
768 424	GSW706 GPS L5 for TPS1200 series total stations (SmartStation).
6002647	Pre-Signal Bundle for GX1220+ GNSS, GX1230+ GNSS and RX1250 Controllers, consists of GLONASS option, GPS L5 option and Galileo option.

12.2 PPS/Event Related Options (only for GX1200+ Receivers)

733 321	EI3, PPS Output, 2 Events Input Option for GX1200+ Receivers. Fitted at factory if ordered together with Receiver.
403 448	GEV42, 2m cable, connects GPS sensor event input to another device.
667 744	GEV150, PPS output cable for GPS Receiver, 2m long, conects GPS Receiver time mark output to another device.

13. Upgrades for GPS & GNSS Receivers

734 385	GSW415, Sensor upgrade from GX1210 to GX1220.
734 386	GSW416, Sensor upgrade from GX1210 to GX1230.
734 387	GSW417, Sensor upgrade from GX1220 to GX1230.
758 457	GSW620, Sensor Upgrade from GX1220 GG to GX1230 GG.
767 555	GSW687 Sensor upgrade from GX1210+ to GX1220+.
767 556	GSW688 Sensor upgrade from GX1210+ to GX1230+.
767 557	GSW689 Sensor upgrade from GX1220+ to GX1230+.
766 718	GSW680 Sensor upgrade from GX1220+ GNSS to GX1230+ GNSS.

13.1 Upgrades to GNSS (GPS incl L5, GLONASS, Galileo) sensors

Upgrading from a GX1220(GG), a GX1230(GG) sensor or from a ATX1230 (GG) Antenna to a GX1230+ GNSS or ATX1230+ GNSS receiver is easily possible, due to System1200 upgrade path. Contact local Leica service department for all details.

14. Application Programs for GPS & GNSS Receivers

14.1 GX1200+ Receivers

Standard Applications

Survey
Determine Coordinate System
Stakeout
COGO
Onboard DXF Importer

Optional Applications

734 391	GSW378, GPS1200 Application Program “Road Runner”
753 662	SWDC30, GPS1200 Application Programm “Road Runner Rail”
734 392	GSW379, GX1200 Application Program "Reference Line"
742 590	GSW468, GX1200 Application "Reference Plane"
738 166	GSW426, GX1200 Application Program "DTM Stakeout"
748 203	GSW528, GX1200 Application Program "Cross Section"
748 205	GSW530, GX1200 Application Program "Area Division"
748 204	GSW529, GX1200 Application Program, “Volume Calculation”
737 643	GSW421, GX1200 extended OWI/LB2 remote control. Allows full sensor steering and communication via OWI/LB2 commands.
734 390	GSW377, DGPS/RTCM input/output option for GX1210+ and GX1220+/ GX1220+ GNSS Receivers.
756 641	GSW610, GX1200/RX1250 option to allow receiving RTK data from GPS900 or GRX1200 Lite Reference station.
760 363	SWDC39, GX1200 Application "Onboard DXF Exporter".
763 404	SWDC43, GX1200 Application "Onboard LandXML Exporter".

14.2 SmartRovers

General Survey Functionality – must be ordered with each RX1250

747 322	RX1250 GPS Survey functionality, provides data logging and real-time functionality.

Standard Applications

Survey
Determine Coordinate System
Stakeout
COGO
Onboard DXF Importer

Optional Applications

745 598	GSW502, RX1250 Application "RoadRunner"
753 663	SWDC31, RX1250 Application "RoadRunner Rail"
745 592	GSW499, RX1250 Application Program "Reference Line"
745 597	GSW501, RX1250 Application "Reference Plane"
745 596	GSW500, RX1250 Application Program "DTM Stakeout"
748 836	GSW533, RX1250 Application Program "Cross Section"
748 838	GSW535, RX1250 Application Program "Area Division"
748 837	GSW534, RX1250 Application Program “Volume Calculation”
756 625	GSW608, RX1250 extended OWI/LB2 remote control. Allows full sensor steering and communication via OWI/LB2 commands.
756 641	GSW610, GX1200/RX1250 option to allow receiving RTK data from GPS900 or GRX1200 Lite Reference station.
760 366	SWDC40, RX1250 Application "Onboard DXF Exporter". SWDC44, RX1250 Application "Onboard LandXML Exporter"

Office software – Suggested Configurations

15. LEICA Geo Office

15.1 LEICA Geo Office Software

734 711	LEICA Geo Office Software on CD-ROM, not protected.

15.2 Software Protection Keys for additional options

734 712	Software protection key (parallel) for single user licence.
734 713	Software protection key (USB) for single user licence.
734 714	Software protection key for network licence for 5 users.
734 715	Software protection key for network licence for 10 users.
734 716	Software protection key for network licence for 25 users.
734 717	Software protection key for network licence for 50 users.

15.3 LEICA Geo Office Protected Options

GPS Options

734 718	GPS L1 data-processing, for code and phase, protected option.
734 719	L1/L2 data-processing for GPS, for code and phase, protected option.
752 697	GLONASS data-processing for LGO, protected option. Can only be ordered in addition to L1/L2 data-processing for GPS (734719)
734 720	RINEX Import for GPS, protected option.
734 721	Upgrade from GPS L1 to GPS L1/L2 data-processing.

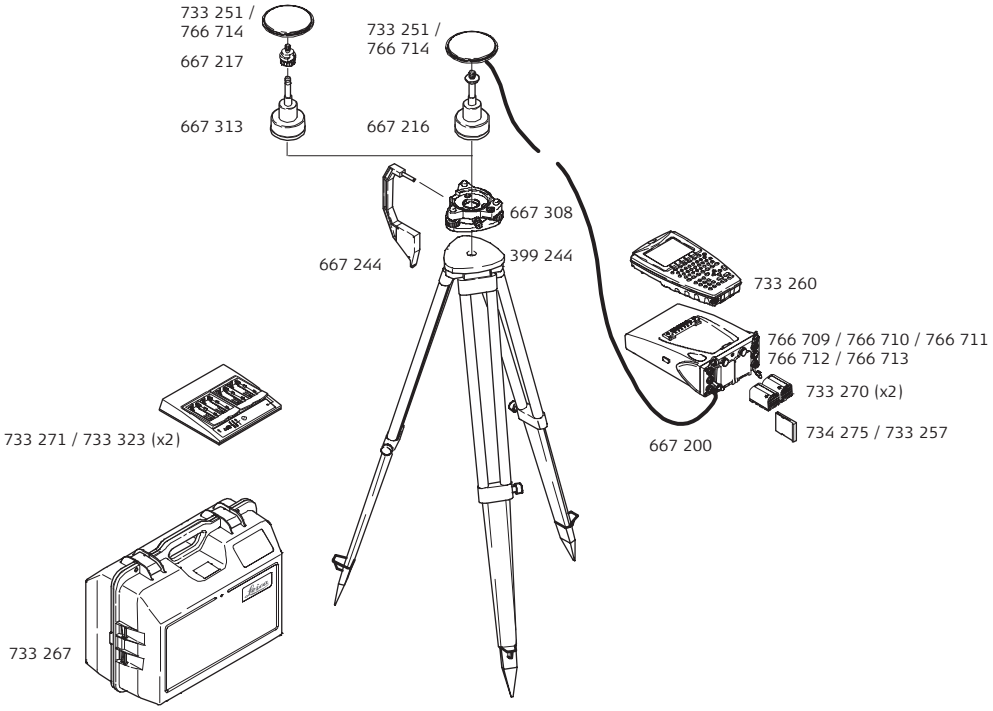
General Options

734 724	Datum & Map transformation, protected option.
734 725	Design & Adjustment 3D, protected option.
734 726	GIS/CAD Export, protected option.
734 727	Upgrade from Design & Adjustment 1D to 3D.
756 941	Surfaces & Volumes, protected option.

15.4 LEICA Geo Office Upgrade

734 729	Upgrade from SKI-Pro to LEICA Geo Office.

GX1200+ Tripod Set-up
Suggested Equipment for Post-Processing



Select Receiver

766 709	GX1210+, Single Frequency Survey GPS Receiver.
766 710	GX1220+, Geodetic GPS Dual Frequency Receiver. Sensor can be upgraded to GNSS receiver.
766 711	GX1230+, Geodetic GPS Dual Frequency RTK Receiver. Sensor can be upgraded to GNSS receiver.

Select GNSS receiver

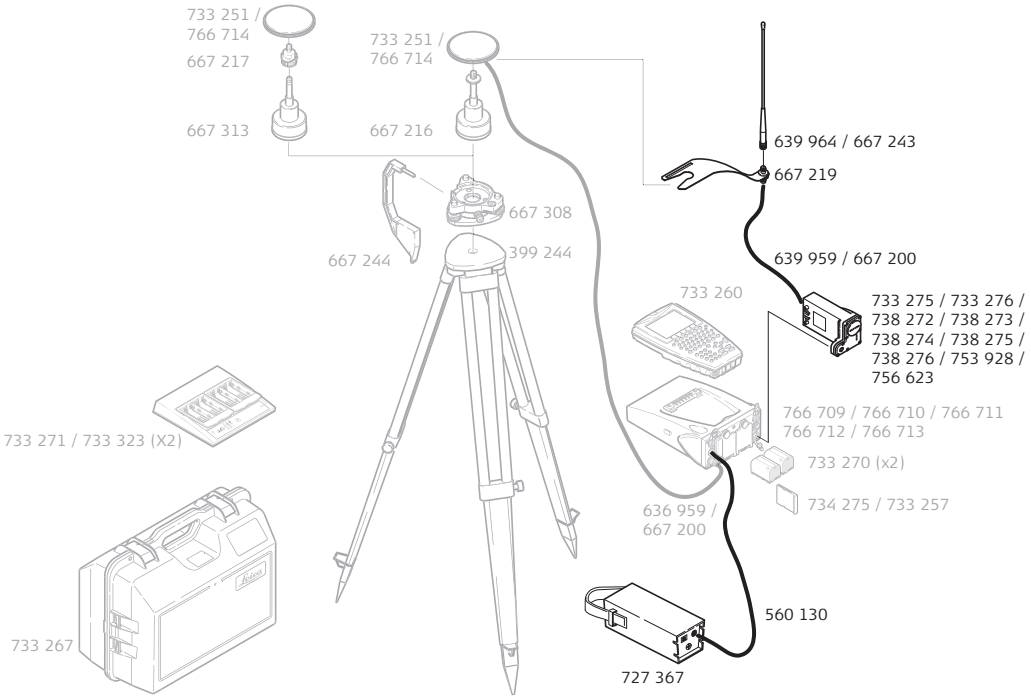
766 713	GX1220+ GNSS, Geodetic GPS/GLONASS/Galileo Triple Frequency Receiver. Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.
766 712	GX1230+ GNSS, Geodetic GPS/GLONASS/Galileo Triple Frequency RTK Receiver. Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.
751 186	GSW565, GLONASS option for GX1230GG, GX1230+ GNSS, GX1220GG, GX1220+ GNSS and RX1250 Controllers. Without GLONASS option, GLONASS is only enabled each Wednesday.
768 423	GSW705 GPS L5 option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers.
766 716	GSW678 Galileo option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers.
6002647	Pre-Signal Bundle for GX1220+ GNSS, GX1230+ GNSS and RX1250 Controllers, consists of GLONASS option, GPS L5 option and Galileo option.

Select Antenna

733 251	AX1201, single frequency antenna with 5/8" thread for GX1210+ receiver.
766 714	AX1203+ GNSS, GPS/GLONASS/Galileo Triple Frequency antenna with 5/8" thread for GX1200+ (GNSS) receivers.
636 959	GEV120, 2.8m antenna cable.
733 260	RX1210T, System 1200 Controller with touch screen.
733 270	GEB221, Lithium-Ion battery, 7.4V/4.4Ah, rechargeable. To be used with TPS1200+ and GPS1200+ series.
733 271	GKL221, Charger PRO. To be used with up to two charging adapters GDI221 or GDI222. Charger cable and net adapter included.
733 323	GDI221, Adapter for GKL221 for charging 2 Li-Ion batteries GEB221, GEB211.
733 257	MCF256, CompactFlash card 256MB.
733 258	MCFAD1, CompactFlash PC card adapter.
733 267	GVP623, Hard container for GX1200+ and GRX1200+ Receivers, AX1201/AX1203+ GNSS Antenna, RX1200 Controller series, cables and accessories.
399 244	GST05 tripod, wood, plastic coated, lightweight.
667 308	GDF112 tribrach with optical plummet.
667 216	GRT146, Carrier with 5/8 inch screw, GPS antenna screws on directly.
667 244	GZS 4-1 Height hook with integrated tape measure. Supplied with additional tape graduated in feet and inches.

Note: GPS antenna must be fitted with 667 217 screw-to-stub adapter if 667 313 GRT144 carrier with stub is preferred.

GX1200+ Tripod Set-up – Suggested Additional Equipment for Real-Time Reference (or DGPS) – Using One Tripod



Radio Modem

Satelline 3AS radio modem, integrated into housing, fits on side of GPS1200+ Receiver.

733 275	GFU14-0, Satelline 3AS radio modem (433.525 MHz, 25.0 kHz channel spacing, 0.5 W)
733 276	GFU14-1, Satelline 3AS radio modem (406.425 MHz, 25.0 kHz channel spacing, 1.0 W)
738 272	GFU14-2, Satelline 3AS radio modem (445.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 273	GFU14-3, Satelline 3AS radio modem (443.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 274	GFU14-4, Satelline 3AS radio modem (440.550 MHz, 25.0 kHz channel spacing, 0.5 W)
738 275	GFU14-5, Satelline 3AS radio modem (458.150 MHz, 12.5 kHz channel spacing, 1.0 W)
738 276	GFU14-6, Satelline 3AS radio modem (439.8625 MHz, 12.5 kHz channel spacing, 1.0 W)
753 928	GFU14-7, Satelline 3AS radio modem (464.5000 MHz, 25.0 kHz channel spacing, 1.0 W)
756 623	GFU14-8, Satelline 3AS radio modem (458.6000 MHz, 25.0 kHz channel spacing, 0.5 W)

Note: The equipment is based on Satelline radio modems. Changes have to be made for Pacific Crest or other radio modems or GSM/CMDA modems in GFU housings.

Select Radio Antenna

639 964	GAT1, Gainflex radio antenna, frequency range 400 – 435MHz.
	or
667 243	GAT2, Gainflex radio antenna, frequency range 435 – 470MHz.
636 959	GEV120, 2.8m antenna cable.
667 219	Arm 15 cm long, attaches to GPS antenna

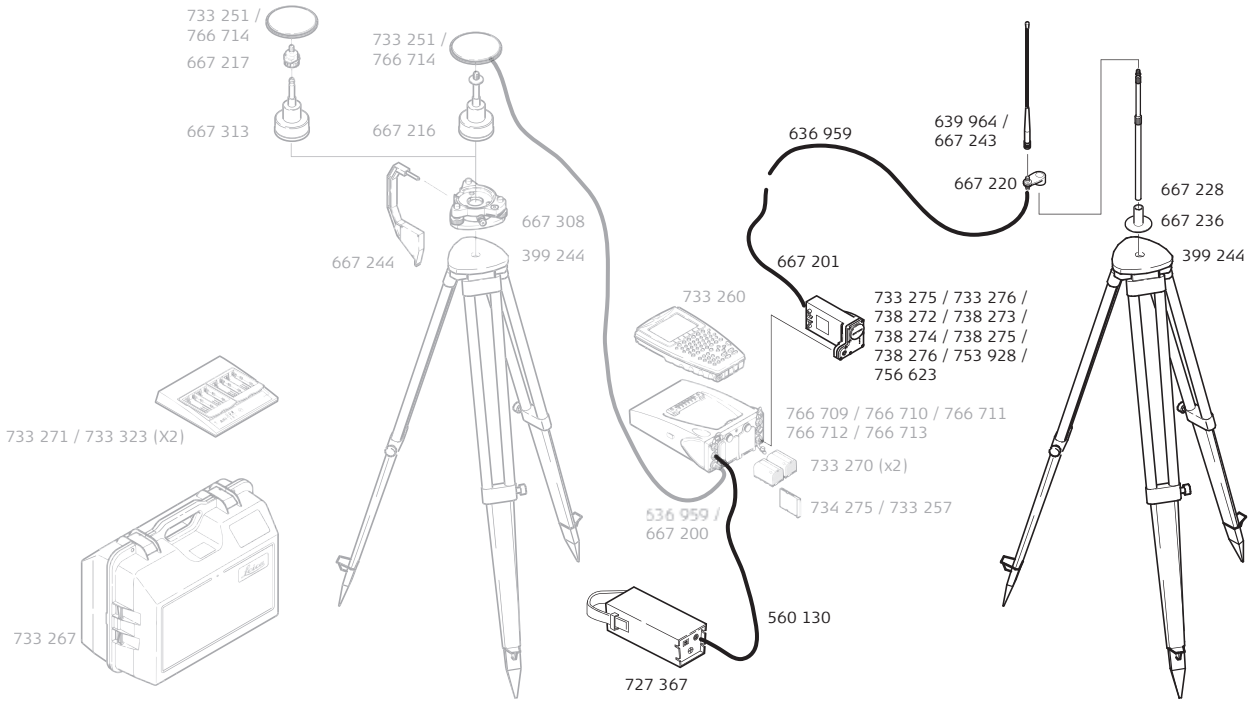
For extended Operating Times

727 367	GEB171, External universal battery, NiMH, 12V/9Ah, rechargeable.
560 130	GEV97, 1.8m power cable, connects external battery GEB171 to GPS1200+ receiver.

Note: The GX1230+/GX1230+ GNSS has RTCM and real-time built in. The GX1210+, GX1220+ and GX1220+ GNSS need the following option to be able to perform DGPS.

734 390	GSW377, DGPS/RTCM input/output option for GX1210+ and GX1220+/GX1220+ GNSS Receivers.

GX1200+ Tripod Set-up – Suggested Additional Equipment for Real-Time Reference (or DGPS) – Using Two Tripods



Radio Modem

Satelline 3AS radio modem, integrated into housing, fits on side of GPS1200+ Receiver.

733 275	GFU14-0, Satelline 3AS radio modem (433.525 MHz, 25.0 kHz channel spacing, 0.5 W)
733 276	GFU14-1, Satelline 3AS radio modem (406.425 MHz, 25.0 kHz channel spacing, 1.0 W)
738 272	GFU14-2, Satelline 3AS radio modem (445.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 273	GFU14-3, Satelline 3AS radio modem (443.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 274	GFU14-4, Satelline 3AS radio modem (440.550 MHz, 25.0 kHz channel spacing, 0.5 W)
738 275	GFU14-5, Satelline 3AS radio modem (458.150 MHz, 12.5 kHz channel spacing, 1.0 W)
738 276	GFU14-6, Satelline 3AS radio modem (439.8625 MHz, 12.5 kHz channel spacing, 1.0 W)
753 928	GFU14-7, Satelline 3AS radio modem (464.5000 MHz, 25.0 kHz channel spacing, 1.0 W)
756 623	GFU14-8, Satelline 3AS radio modem (458.6000 MHz, 25.0 kHz channel spacing, 0.5 W)

Note: The equipment is based on Satelline radio modems. Changes have to be made for Pacific Crest or other radio modems or GSM/CMDA modems in GFU housings.

Select Radio Antenna

639 964	GAT1, Gainflex radio antenna, frequency range 400 – 435MHz.
	or
667 243	GAT2, Gainflex radio antenna, frequency range 435 – 470MHz.
636 959	GEV120, 2.8m antenna cable.
667 201	GEV142 1.6m extension for antenna cable.
667 228	Telescopic rod with 5/8" screw. Fits in minipack 667 137. Fits in base 667 236.
667 236	Base with 5/8" screw.
399 244	GST05 tripod, wood, plastic coated, lightweight.
667 220	Arm 3 cm long, screws on telescopic rod.

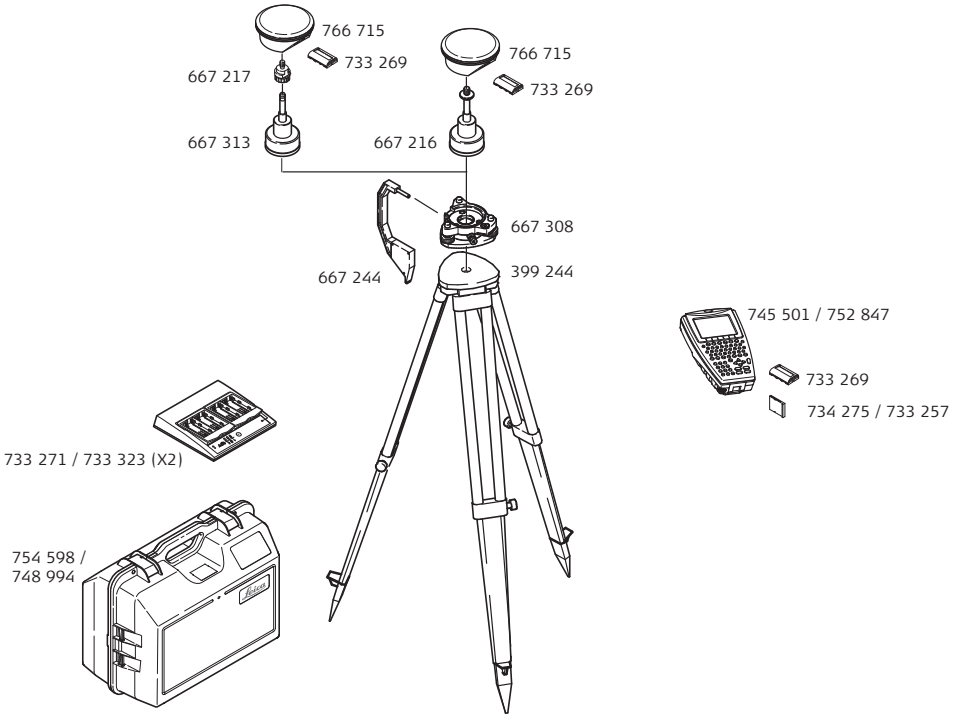
For extended Operating Times

727 367	GEB171, External universal battery, NiMH, 12V/9Ah, rechargeable.
560 130	GEV97, 1.8m power cable, connects external battery GEB171 to GPS1200+ receiver.

Note: The GX1230+/GX1230+ GNSS has RTCM and real-time built in. The GX1210+ and GX1220+/ GX1220+ GNSS need the following option to be able to perform DGPS.

734 390	GSW377, DGPS/RTCM input/output option for GX1210+ and GX1220+/GX1220+ GNSS Receivers.

ATX1230+ GNSS Tripod Set-up
Suggested Equipment for Post-Processing

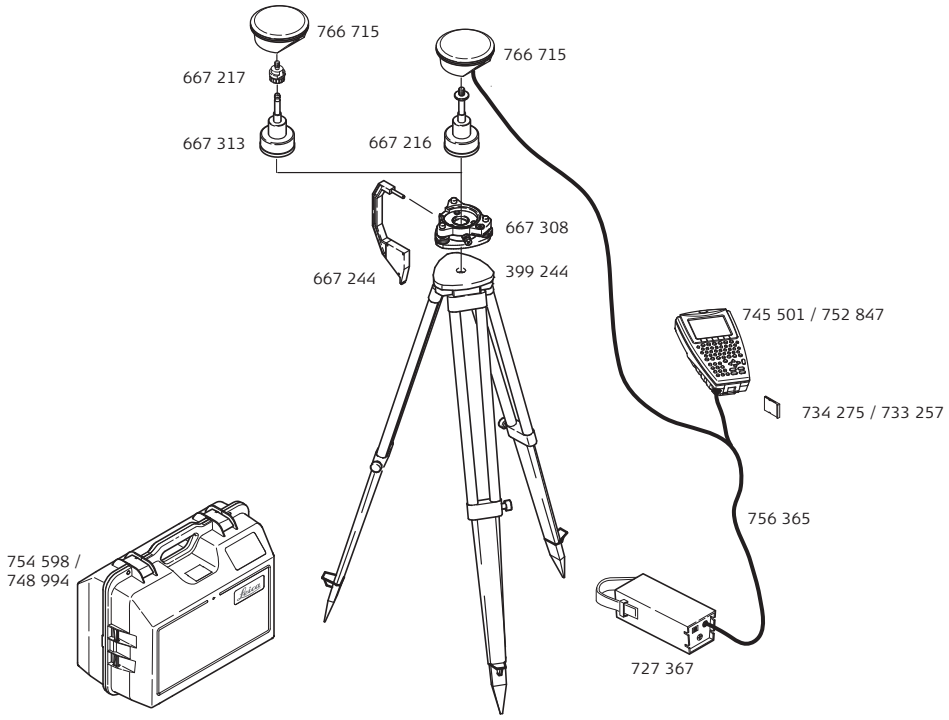


Select SmartAntenna

766 715	ATX1230+ GNSS, GPS/GLONASS/Galileo Triple Frequency Antenna for RX1250. Can be used with TPS1200+ instruments for SmartStation and SmartPole setup. Bluetooth capable. Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.
751 186	GSW565, GLONASS option for GX1230GG, GX1230+ GNSS, GX1220GG, GX1220+ GNSS and RX1250 Controllers. Without GLONASS option, GLONASS is only enabled each Wednesday.
768 423	GSW705 GPS L5 option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers.
766 716	GSW678 Galileo option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers
6002647	Pre-Signal Bundle for GX1220+ GNSS, GX1230+ GNSS and RX1250 Controllers, consists of GLONASS option, GPS L5 option and Galileo option.
733 269	GEB211, Lithium-Ion battery, 7.4V/2.2Ah, rechargeable. To be used with TPS1200+ and GPS1200+ series.
733 271	GKL221, Charger PRO. To be used with up to two charging adapters GDI221 or GDI222. Charger cable and net adapter included.
733 323	GDI221, Adapter for GKL221 for charging 2 Li-Ion batteries GEB221, GEB211.
745 501	RX1250X, Windows CE System 1200 GPS Controller with monochrome touch screen, alpha keyboard, 2 x GDZ56 pens for touch screen, user manual.
752 847	RX1250Xc, Windows CE System 1200 GPS Controller with colour display, touch screen, alpha keyboard, 2 x GDZ56 pens for touch screen, user manual.
747 322	RX1250 GPS Survey functionality, provides data logging and real-time functionality.
733 299	GEV173, 1.2m cable, to connect ATX1230+ GNSS SmartAntenna with RX1250 Controller.
733 269	GEB211, Lithium-Ion battery, 7.4V/2.2Ah, rechargeable. To be used with TPS1200+ and GPS1200+ series.
733 257	MCF256, CompactFlash card 256MB.
733 258	MCFAD1, CompactFlash PC card adapter.
754 598	GVP640, Hard container for System 1200 SmartRover, SmartPole (ATX1230+ GNSS, RX1250, GRZ122) and Smart Station.
399 244	GST05 tripod, wood, plastic coated, lightweight.
667 308	GDF112 tribrach with optical plummet.
667 216	GRT146 carrier with 5/8" screw.
667 244	GZS 4-1 Height hook with integrated tape measure. Supplied with additional tape graduated in feet and inches.

Note: GPS antenna must be fitted with 667 217 screw-to-stub adapter if 667 313 GRT144 carrier with stub is preferred.

ATX1230+ GNSS Tripod Set-up with external power
Suggested Equipment for Post-Processing

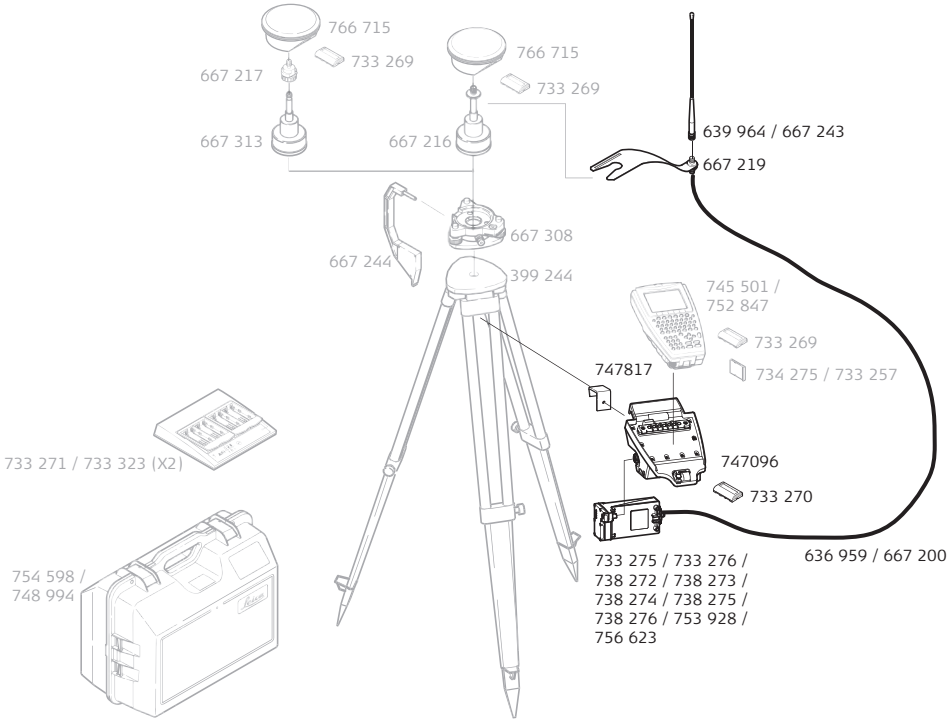


Select SmartAntenna

766 715	ATX1230+ GNSS, GPS/GLONASS/Galileo Triple Frequency Antenna for RX1250. Can be used with TPS1200+ instruments for SmartStation and SmartPole setup. Bluetooth capable. Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.
751 186	GSW565, GLONASS option for GX1230GG, GX1230+ GNSS, GX1220GG, GX1220+ GNSS and RX1250 Controllers. Without GLONASS option, GLONASS is only enabled each Wednesday.
768 423	GSW705 GPS L5 option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers.
766 716	GSW678 Galileo option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers
6002647	Pre-Signal Bundle for GX1220+ GNSS, GX1230+ GNSS and RX1250 Controllers, consists of GLONASS option, GPS L5 option and Galileo option.
733 271	GKL221, Charger PRO. To be used with up to two charging adapters GDI221 or GDI222. Charger cable and net adapter included.
733 323	GDI221, Adapter for GKL221 for charging 2 Li-Ion batteries GEB221, GEB211.
745 501	RX1250X, Windows CE System 1200 GPS Controller with monochrome touch screen, alpha keyboard, 2 x GDZ56 pens for touch screen, user manual.
752 847	RX1250Xc, Windows CE System 1200 GPS Controller with colour display, touch screen, alpha keyboard, 2 x GDZ56 pens for touch screen, user manual.
747 322	RX1250 GPS Survey functionality, provides data logging and real-time functionality.
733 299	GEV173, 1.2m cable, to connect ATX1230+ GNSS SmartAntenna with RX1250 Controller.
727 367	GEB171, External universal battery, NiMH, 12V/9Ah, rechargeable.
756 365	GEV215, Y-cable to power RX1250/RX1250c and ATX1230+ GNSS with external battery.
733 257	MCF256, CompactFlash card 256MB.
733 258	MCFAD1, CompactFlash PC card adapter.
754 598	GVP640, Hard container for System 1200 SmartRover, SmartPole (ATX1230+ GNSS, RX1250, GRZ122) and Smart Station.
399 244	GST05 tripod, wood, plastic coated, lightweight.
748 994	GVP637, Hardcontainer for GNSS SmartRover (ATX1230+ GNSS and RX1250 Controller) with accessories for pole and tripod setup.
667 308	GDF112 tribrach with optical plummet.
667 216	GRT146 carrier with 5/8" screw.
667 244	GZS 4-1 Height hook with integrated tape measure. Supplied with additional tape graduated in feet and inches.

Note: GPS antenna must be fitted with 667 217 screw-to-stub adapter if 667 313 GRT144 carrier with stub is preferred.

ATX1230+ GNSS Tripod Set-up – Suggested Additional Equipment for Real-Time Reference (or DGPS) – Using One Tripod



Radio Modem

Satelline 3AS radio modem, integrated into housing, fits on side of GPS1200+ Receiver.

733 275	GFU14-0, Satelline 3AS radio modem (433.525 MHz, 25.0 kHz channel spacing, 0.5 W)
733 276	GFU14-1, Satelline 3AS radio modem (406.425 MHz, 25.0 kHz channel spacing, 1.0 W)
738 272	GFU14-2, Satelline 3AS radio modem (445.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 273	GFU14-3, Satelline 3AS radio modem (443.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 274	GFU14-4, Satelline 3AS radio modem (440.550 MHz, 25.0 kHz channel spacing, 0.5 W)
738 275	GFU14-5, Satelline 3AS radio modem (458.150 MHz, 12.5 kHz channel spacing, 1.0 W)
738 276	GFU14-6, Satelline 3AS radio modem (439.8625 MHz, 12.5 kHz channel spacing, 1.0 W)
753 928	GFU14-7, Satelline 3AS radio modem (464.5000 MHz, 25.0 kHz channel spacing, 1.0 W)
756 623	GFU14-8, Satelline 3AS radio modem (458.6000 MHz, 25.0 kHz channel spacing, 0.5 W)

Note: The equipment is based on Satelline radio modems. Changes have to be made for Pacific Crest or other radio modems or GSM/CMDA modems in GFU housings.

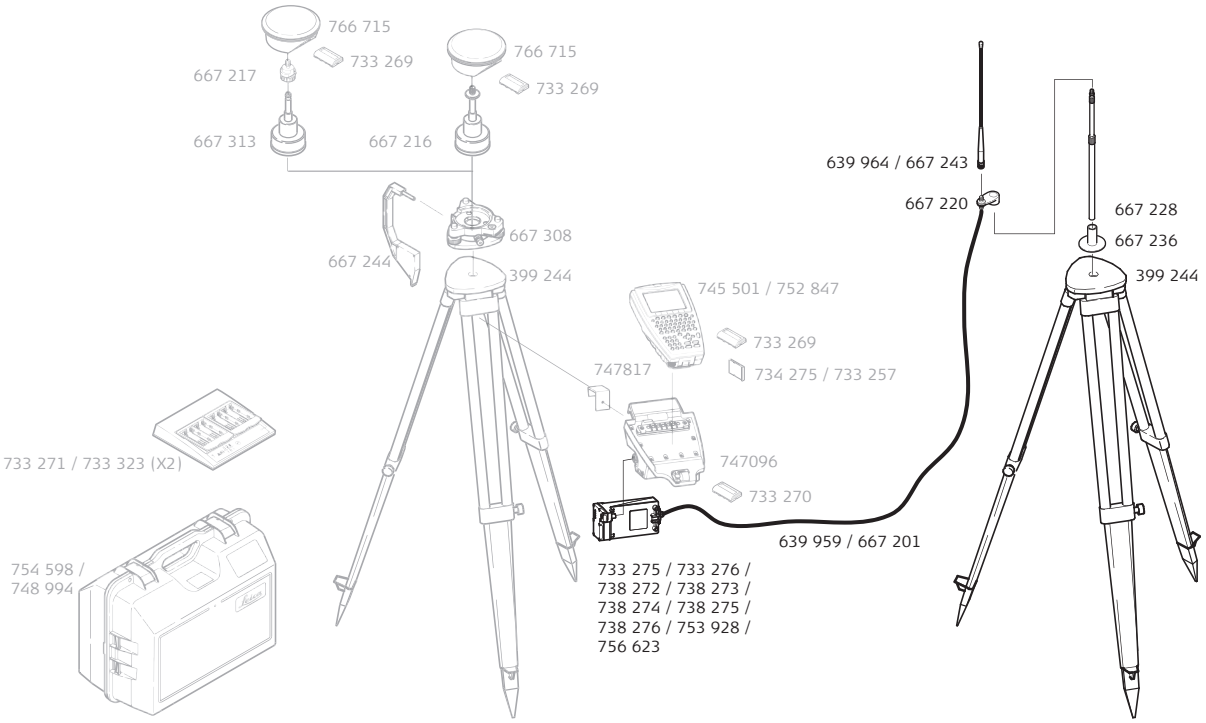
Select Radio Antenna

639 964	GAT1, Gainflex radio antenna, frequency range 400 – 435MHz. or
667 243	GAT2, Gainflex radio antenna, frequency range 435 – 470MHz.
747 096	GHT56, Holder for attaching RX1250 Controller and GFU modem housing to all poles (exept mini poles).
733 270	GEB221, Lithium-Ion battery, 7.4V/4.4Ah, rechargeable. To be used with TPS1200+ and GPS1200+ series.
747 817	GHT57 Bracket to mount GHT56 to a tripod.
636 959	GEV120, 2.8m antenna cable.
667 219	Arm 15 cm long, attaches to GPS antenna.

For extended Operating Times

727 367	GEB171, External universal battery, NiMH, 12V/9Ah, rechargeable.
756 365	GEV215, Y-cable to power RX1250/RX1250c and ATX1230+ GNSS with external battery.

ATX1230+ GNSS Tripod Set-up – Suggested Additional Equipment for Real-Time Reference (or DGPS) – Using Two Tripods



Radio Modem

Satelline 3AS radio modem, integrated into housing, fits on side of GPS1200+ Receiver.

733 275	GFU14-0, Satelline 3AS radio modem (433.525 MHz, 25.0 kHz channel spacing, 0.5 W)
733 276	GFU14-1, Satelline 3AS radio modem (406.425 MHz, 25.0 kHz channel spacing, 1.0 W)
738 272	GFU14-2, Satelline 3AS radio modem (445.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 273	GFU14-3, Satelline 3AS radio modem (443.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 274	GFU14-4, Satelline 3AS radio modem (440.550 MHz, 25.0 kHz channel spacing, 0.5 W)
738 275	GFU14-5, Satelline 3AS radio modem (458.150 MHz, 12.5 kHz channel spacing, 1.0 W)
738 276	GFU14-6, Satelline 3AS radio modem (439.8625 MHz, 12.5 kHz channel spacing, 1.0 W)
753 928	GFU14-7, Satelline 3AS radio modem (464.5000 MHz, 25.0 kHz channel spacing, 1.0 W)
756 623	GFU14-8, Satelline 3AS radio modem (458.6000 MHz, 25.0 kHz channel spacing, 0.5 W)

Note: The equipment is based on Satelline radio modems. Changes have to be made for Pacific Crest or other radio modems or GSM/CMDA modems in GFU housings.

Select Radio Antenna

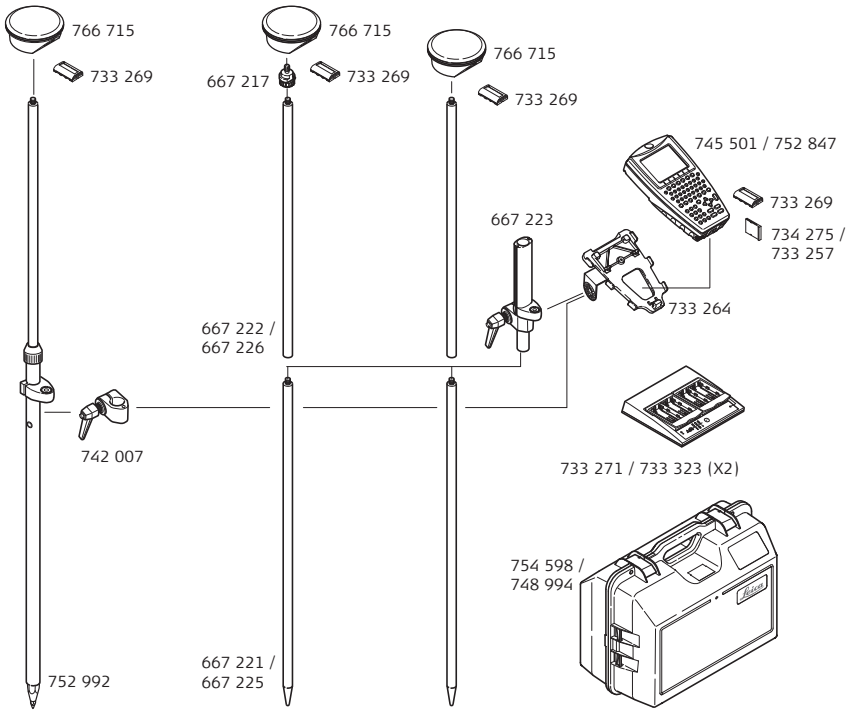
639 964	GAT1, Gainflex radio antenna, frequency range 400 – 435MHz.
	or
667 243	GAT2, Gainflex radio antenna, frequency range 435 – 470MHz.
636 959	GEV120, 2.8m antenna cable.
667 201	GEV142 1.6m extension for antenna cable.
667 228	Telescopic rod with 5/8" screw. Fits in minipack 667 137. Fits in base 667 236.
667 236	Base with 5/8" screw.
399 244	GST05 tripod, wood, plastic coated, lightweight.
667 220	Arm 3 cm long, screws on telescopic rod.

For extended Operating Times

727 367	GEB171, External universal battery, NiMH, 12V/9Ah, rechargeable.
756 365	GEV215, Y-cable to power RX1250/RX1250c and ATX1230+ GNSS with external battery.

SmartRover
Suggested Equipment for Real-Time (Bluetooth to Mobile Phone)

Note: This set up can also be used if a Post-Processing only SmartRover set up is required



Select SmartAntenna

766 715	ATX1230+ GNSS, GPS/GLONASS/Galileo Triple Frequency Antenna for RX1250. Can be used with TPS1200+ instruments for SmartStation and SmartPole setup. Bluetooth capable. Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.
751 186	GSW565, GLONASS option for GX1230GG, GX1230+ GNSS, GX1220GG, GX1220+ GNSS and RX1250 Controllers. Without GLONASS option, GLONASS is only enabled each Wednesday.
768 423	GSW705 GPS L5 option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers.
766 716	GSW678 Galileo option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers
6002647	Pre-Signal Bundle for GX1220+ GNSS, GX1230+ GNSS and RX1250 Controllers, consists of GLONASS option, GPS L5 option and Galileo option.
733 269	GEB211, Lithium-Ion battery, 7.4V/2.2Ah, rechargeable. To be used with TPS1200+ and GPS1200+ series.
733 271	GKL221, Charger PRO. To be used with up to two charging adapters GDI221 or GDI222. Charger cable and net adapter included.
733 323	GDI221, Adapter for GKL221 for charging 2 Li-Ion batteries GEB221, GEB211.
745 501	RX1250X, Windows CE System 1200 GPS Controller with monochrome touch screen, alpha keyboard, 2 x GDZ56 pens for touch screen, user manual.
752 847	RX1250Xc, Windows CE System 1200 GPS Controller with colour display, touch screen, alpha keyboard, 2 x GDZ56 pens for touch screen, user manual.
747 322	RX1250 GPS Survey functionality, provides data logging and real-time functionality.
733 299	GEV173, 1.2m cable, to connect ATX1230+ GNSS SmartAntenna with RX1250 Controller.
733 269	GEB211, Lithium-Ion battery, 7.4V/2.2Ah, rechargeable. To be used with TPS1200+ and GPS1200+ series.
733 257	MCF256, CompactFlash card 256MB.
733 258	MCFAD1, CompactFlash PC card adapter.
754 598	GVP640, Hard container for System 1200 SmartRover, SmartPole (ATX1230+ GNSS, RX1250, GRZ122) and Smart Station.
748 994	GVP637, Hard container for GNSS SmartRover (ATX1230+ GNSS and RX1250 Controller) with accessories for pole and tripod setup

Select Pole

Aluminium pole

667 221	GLS17, Bottom section aluminium pole with steel tip.
667 222	GLS18, Top section aluminium pole with 5/8" screw.
667 223	GHT25, Grip with circular bubble and fixing element.
733 264	Holder for attaching RX1200 Controller Series to all poles (except mini poles).

Carbon fibre pole (Screw Together)

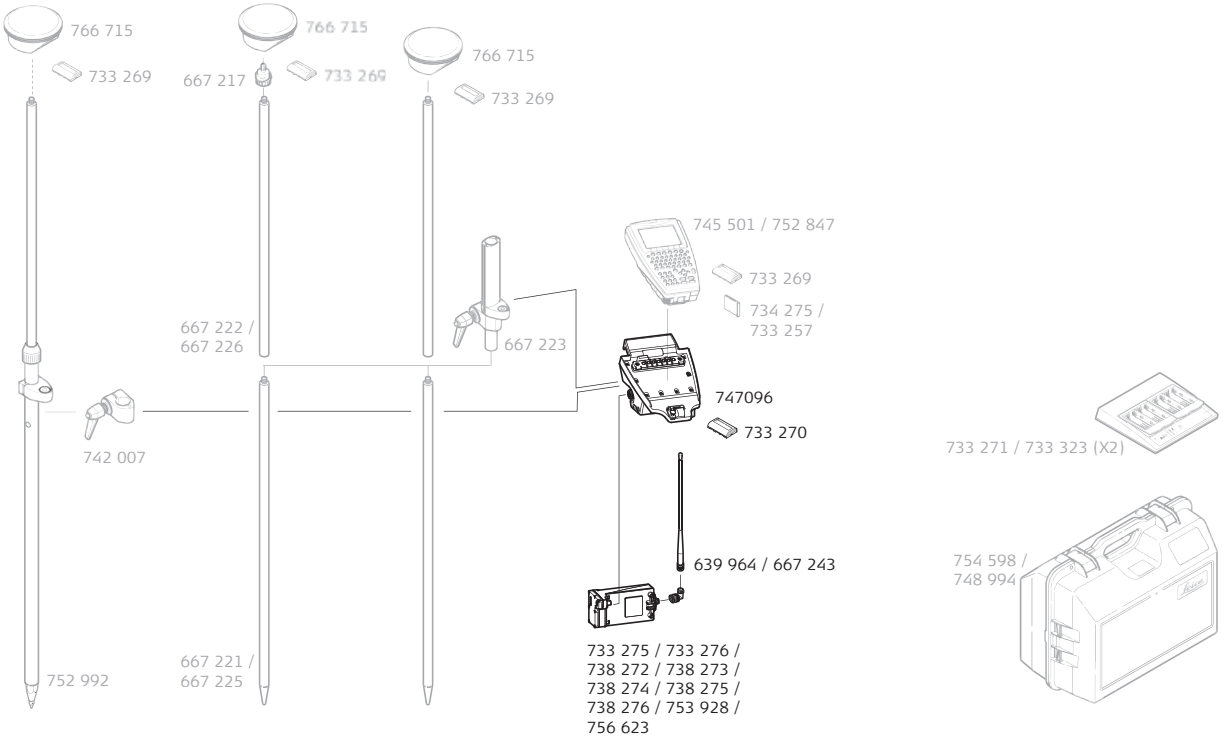
667 225	GLS20, Bottom section carbon-fibre pole with steel tip.
667 226	GLS21, Top section carbon-fibre pole with 5/8" screw.
667 223	GHT25, Grip with circular bubble and fixing element.
733 264	Holder for attaching RX1200 Controller Series to all poles (except mini poles).

Note: GPS antenna must be fitted with 667 217 screw-to-stub adapter if 667 224 or 667 227 top section pole with stub is preferred.

Carbon fibre telescopic pole

752 292	GLS30, GPS telescopic carbon-fibre pole with circular bubble and 5/8" screw, snap-locks at 2,00m.
742 007	GHT52, Clamp arrangement for attaching the GHT39 or GHT56 to all GLS poles.
733 264	Holder for attaching RX1200 Controller Series to all poles (except mini poles).

SmartRover
Suggested Equipment for Real-Time (External Radio)



Radio Modem

Satelline 3AS radio modem, integrated into housing, fits on side of GPS1200+ Receiver.

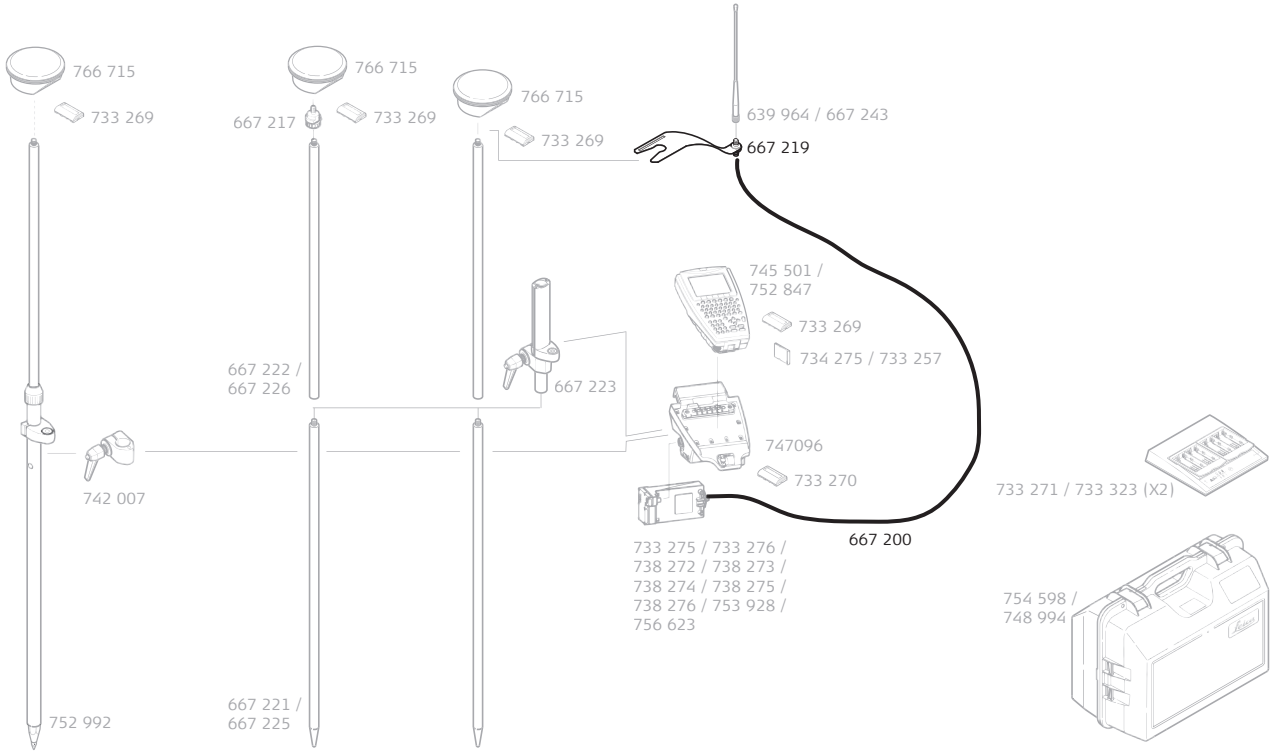
733 275	GFU14-0, Satelline 3AS radio modem (433.525 MHz, 25.0 kHz channel spacing, 0.5 W)
733 276	GFU14-1, Satelline 3AS radio modem (406.425 MHz, 25.0 kHz channel spacing, 1.0 W)
738 272	GFU14-2, Satelline 3AS radio modem (445.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 273	GFU14-3, Satelline 3AS radio modem (443.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 274	GFU14-4, Satelline 3AS radio modem (440.550 MHz, 25.0 kHz channel spacing, 0.5 W)
738 275	GFU14-5, Satelline 3AS radio modem (458.150 MHz, 12.5 kHz channel spacing, 1.0 W)
738 276	GFU14-6, Satelline 3AS radio modem (439.8625 MHz, 12.5 kHz channel spacing, 1.0 W)
753 928	GFU14-7, Satelline 3AS radio modem (464.5000 MHz, 25.0 kHz channel spacing, 1.0 W)
756 623	GFU14-8, Satelline 3AS radio modem (458.6000 MHz, 25.0 kHz channel spacing, 0.5 W)

Note: The equipment is based on Satelline radio modems. Changes have to be made when using Pacific Crest or other radio modems or GSM/CMDA modems in GFU housings.

Select Radio Antenna

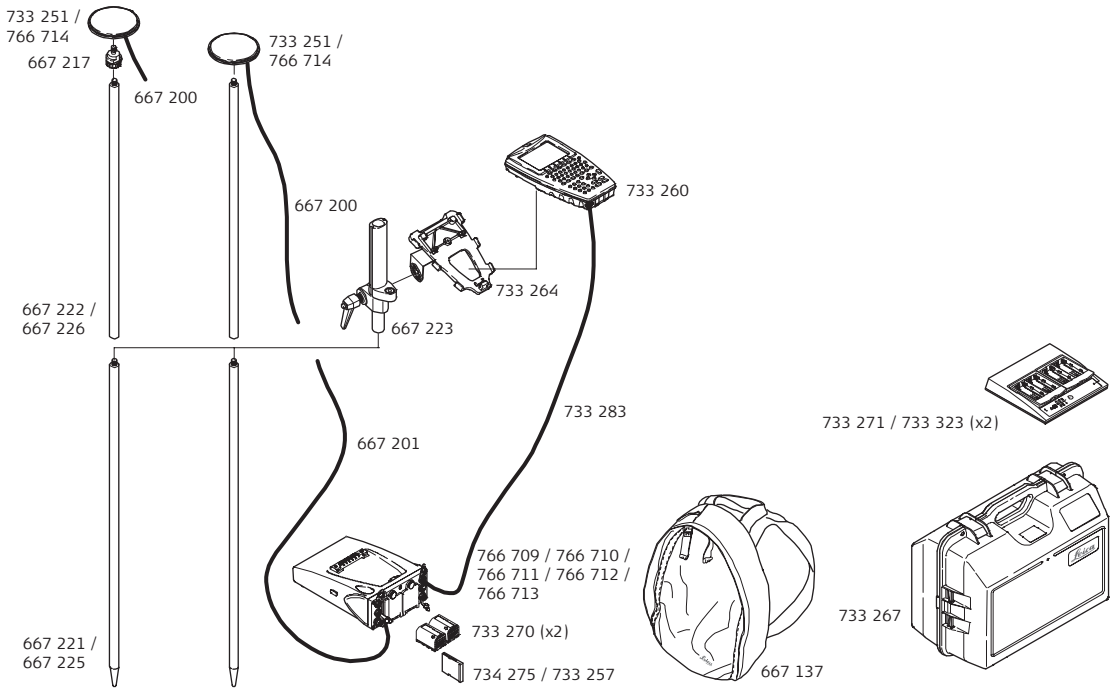
639 964	GAT1, Gainflex radio antenna, frequency range 400 – 435MHz. or
667 243	GAT2, Gainflex radio antenna, frequency range 435 – 470MHz.
747 096	GHT56, Holder for attaching RX1250 Controller and GFU modem housing to all poles (exept mini poles).
733 269	GEB211, Lithium-Ion battery, 7.4V/2.2Ah, rechargeable. To be used with TPS1200+ and GPS1200+ series.

SmartRover
Suggested Equipment for Real-Time (External Radio) – Additional Equipment



667 200 GEV141, 1.2m antenna cable.
667 219 Arm 15 cm long, attaches to GPS antenna.

GX1200+ Rover – Pole plus Minipack
Suggested Equipment for Post-Processing



Select Receiver

766 709	GX1210+, Single Frequency Survey GPS Receiver.
766 710	GX1220+, Geodetic GPS Dual Frequency Receiver. Sensor can be upgraded to GNSS receiver.
766 711	GX1230+, Geodetic GPS Dual Frequency RTK Receiver. Sensor can be upgraded to GNSS receiver.

Select GNSS receiver

766 713	GX1220+ GNSS, Geodetic GPS/GLONASS/Galileo Triple Frequency Receiver. Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.
766 712	GX1230+ GNSS, Geodetic GPS/GLONASS/Galileo Triple Frequency RTK Receiver. Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.
751 186	GSW565, GLONASS option for GX1230GG, GX1230+ GNSS, GX1220GG, GX1220+ GNSS and RX1250 Controllers. Without GLONASS option, GLONASS is only enabled each Wednesday.
768 423	GSW705 GPS L5 option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers.
766 716	GSW678 Galileo option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers.
6002647	Pre-Signal Bundle for GX1220+ GNSS, GX1230+ GNSS and RX1250 Controllers, consists of GLONASS option, GPS L5 option and Galileo option.

Select Antenna

733 251	AX1201, single frequency antenna with 5/8" thread for GX1210+ receiver
766 714	AX1203+ GNSS, GPS/GLONASS/Galileo Triple Frequency antenna with 5/8" thread for GX1200+ (GNSS) receivers.
667 200	GEV141, 1.2m antenna cable.
667 201	GEV142 1.6m extension for antenna cable.
733 260	RX1210T, System 1200 Controller with touch screen.
733 283	GEV163, 1.8m Controller cable connects RX1200 Controller series to GX1200+ Receiver.
733 270	GEB221, Lithium-Ion battery, 7.4V/4.4Ah, rechargeable. To be used with TPS1200+ and GPS1200+ series.
733 271	GKL221, Charger PRO. To be used with up to two charging adapters GDI221 or GDI222. Charger cable and net adapter included.
733 323	GDI221, Adapter for GKL221 for charging 2 Li-Ion batteries GEB221, GEB211.

733 257	MCF256, CompactFlash card 256MB.
733 258	MCFAD1, CompactFlash PC card adapter.
733 267	GVP623, Hard container for GX1200+ and GRX1200+ Receivers, AX1201/AX1203+ GNSS Antenna, RX1200 Controller series, cables and accessories.
399 244	GST05 tripod, wood, plastic coated, lightweight.
667 308	GDF112 tribrach with optical plummet.
667 216	GRT146 carrier with 5/8″ screw.
667 244	GZS 4-1 Height hook with integrated tape measure. Supplied with additional tape graduated in feet and inches.

Select Pole

Aluminium pole

667 223	GHT25, Grip with circular bubble and fixing element.
667 221	GLS17, Bottom section aluminium pole with steel tip.
667 222	GLS18, Top section aluminium pole with 5/8" screw.

Carbon fibre pole

667 223	GHT25, Grip with circular bubble and fixing element.
667 225	GLS20, Bottom section carbon-fibre pole with steel tip.
667 226	GLS21, Top section carbon-fibre pole with 5/8" screw.

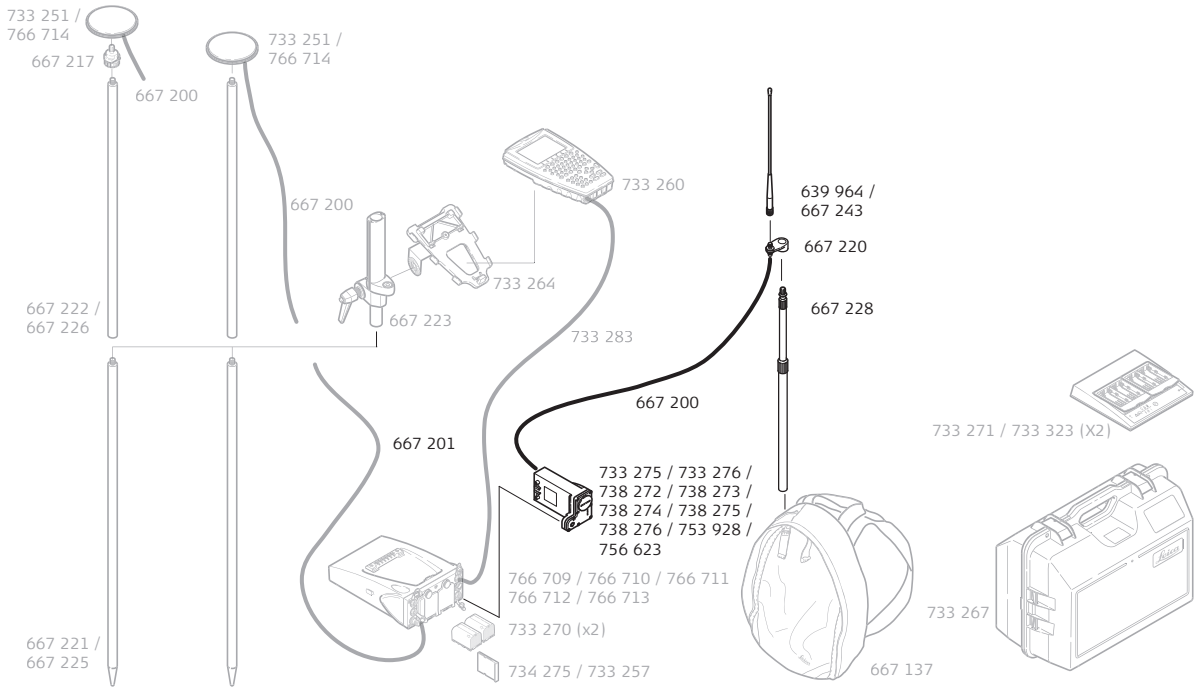
733 264	Holder for RX1210 Controller on pole.
667 137	Minipack, holds GPS receiver.

Note: GPS antenna must be fitted with 667 217 screw-to-stub adapter if 667 224 or 667 227 top section pole with stub is preferred.

Note: The carbon fibre telescopic pole 752 292 can be used as an option instead of the above poles. In this case, clamp arrangement 742 007 should be ordered instead of grip 667 223.

752 292	GLS30, GPS telescopic carbon-fibre pole with circular bubble and 5/8" screw, snap-locks at 2,00m
742 007	GHT52, Clamp arrangement for attaching the GHT39 or GHT56 to all GLS poles.

GX1200+ Rover – Pole plus Minipack Suggested Additional Equipment for Real-Time



Radio Modem

Satelline 3AS radio modem, integrated into housing, fits on side of GPS1200+ Receiver.

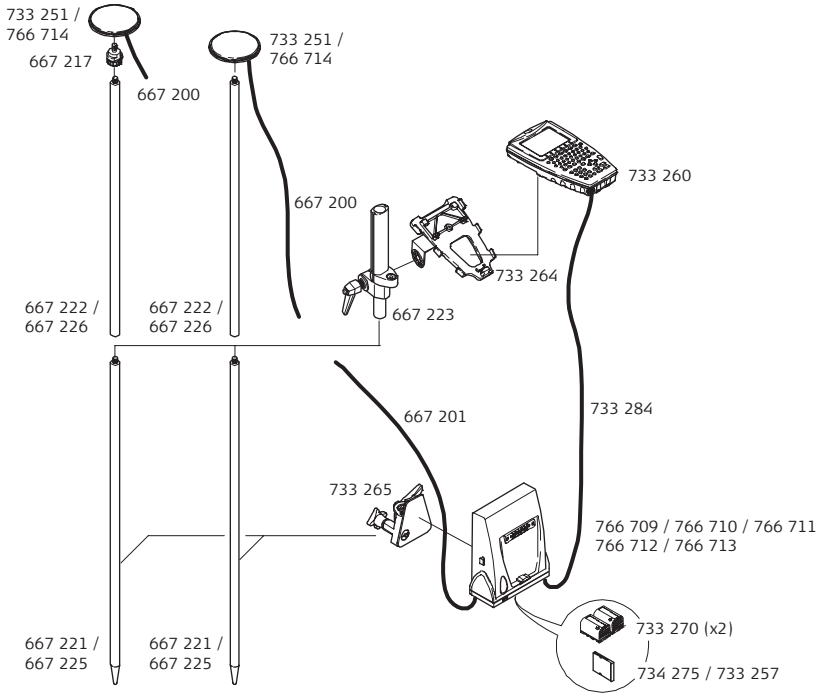
733 275	GFU14-0, Satelline 3AS radio modem (433.525 MHz, 25.0 kHz channel spacing, 0.5 W)
733 276	GFU14-1, Satelline 3AS radio modem (406.425 MHz, 25.0 kHz channel spacing, 1.0 W)
738 272	GFU14-2, Satelline 3AS radio modem (445.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 273	GFU14-3, Satelline 3AS radio modem (443.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 274	GFU14-4, Satelline 3AS radio modem (440.550 MHz, 25.0 kHz channel spacing, 0.5 W)
738 275	GFU14-5, Satelline 3AS radio modem (458.150 MHz, 12.5 kHz channel spacing, 1.0 W)
738 276	GFU14-6, Satelline 3AS radio modem (439.8625 MHz, 12.5 kHz channel spacing, 1.0 W)
753 928	GFU14-7, Satelline 3AS radio modem (464.5000 MHz, 25.0 kHz channel spacing, 1.0 W)
756 623	GFU14-8, Satelline 3AS radio modem (458.6000 MHz, 25.0 kHz channel spacing, 0.5 W)

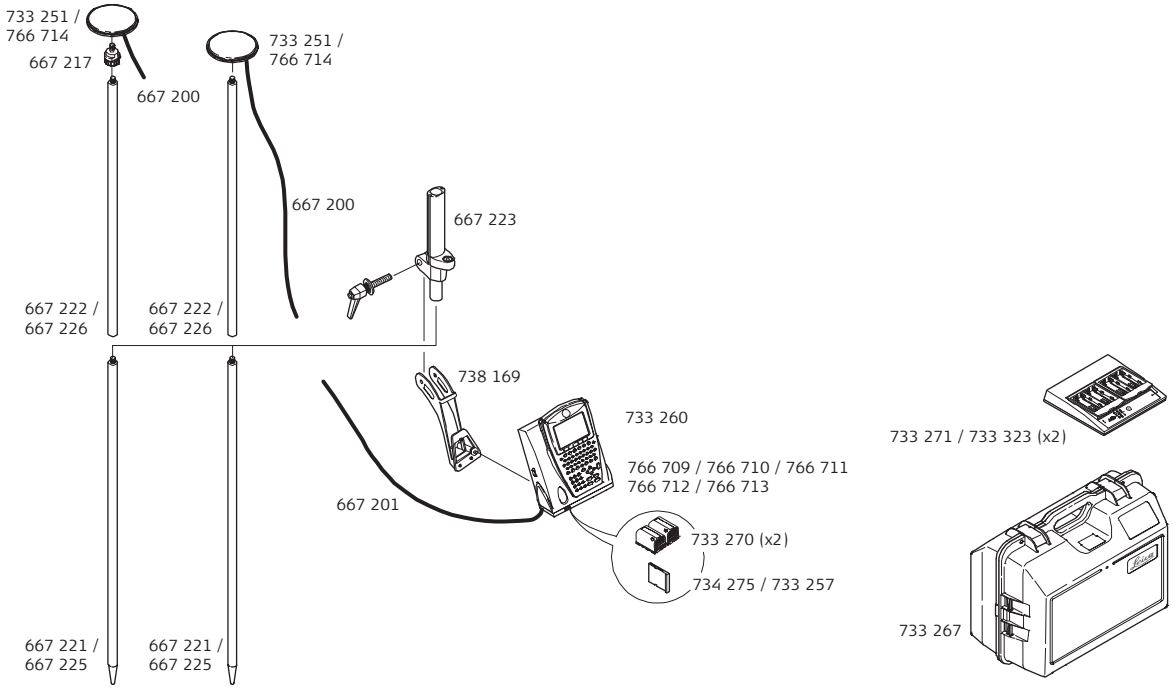
Note: The equipment is based on Satelline radio modems. Changes have to be made when using Pacific Crest or other radio modems or GSM/CMDA modems in GFU housings.

Select Radio Antenna

639 964	GAT1, Gainflex radio antenna, frequency range 400 – 435MHz.
	or
667 243	GAT2, Gainflex radio antenna, frequency range 435 – 470MHz.
667 200	GEV141, 1.2m antenna cable.
667 228	Telescopic rod with 5/8" screw. Fits in minipack 667 137. Fits in base 667 236.
667 220	Arm 3 cm long, screws on telescopic rod

GX1200+ Rover – All-on-Pole
Suggested Equipment for Post-Processing





Select Receiver

766 709	GX1210+, Single Frequency Survey GPS Receiver.
766 710	GX1220+, Geodetic GPS Dual Frequency Receiver. Sensor can be upgraded to GNSS receiver.
766 711	GX1230+, Geodetic GPS Dual Frequency RTK Receiver. Sensor can be upgraded to GNSS receiver.

Select GNSS receiver

766 713	GX1220+ GNSS, Geodetic GPS/GLONASS/Galileo Triple Frequency Receiver. Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.
766 712	GX1230+ GNSS, Geodetic GPS/GLONASS/Galileo Triple Frequency RTK Receiver. Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.
751 186	GSW565, GLONASS option for GX1230GG, GX1230+ GNSS, GX1220GG, GX1220+ GNSS and RX1250 Controllers. Without GLONASS option, GLONASS is only enabled each Wednesday.
768 423	GSW705 GPS L5 option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers.
766 716	GSW678 Galileo option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers
6002647	Pre-Signal Bundle for GX1220+ GNSS, GX1230+ GNSS and RX1250 Controllers, consists of GLONASS option, GPS L5 option and Galileo option.

Select Antenna

733 251	AX1201, single frequency antenna with 5/8" thread for GX1210+ receiver.
766 714	AX1203+ GNSS, GPS/GLONASS/Galileo Triple Frequency antenna with 5/8" thread for GX1200+ (GNSS) receivers.
724 969	GEV194, 1.8m antenna cable. To be used for balanced all-on-the-pole setup.
733 260	RX1210T, System 1200 Controller with touch screen.
733 284	GEV164, 1.1m Cable, connecting RX1200 Controller series to GPS Receiver. To be used for balanced all-on-the-pole setup.
733 270	GEB221, Lithium-Ion battery, 7.4V/4.4Ah, rechargeable. To be used with TPS1200+ and GPS1200+ series.
733 271	GKL221, Charger PRO. To be used with up to two charging adapters GDI221 or GDI222. Charger cable and net adapter included.
733 323	GDI221, Adapter for GKL221 for charging 2 Li-Ion batteries GEB221, GEB211.
733 257	MCF256, CompactFlash card 256MB.
733 258	MCFAD1, CompactFlash PC card adapter.
733 267	GVP623, Hard container for GX1200+ and GRX1200+ Receivers, AX1201/AX1203+ GNSS Antenna, RX1200 Controller series, cables and accessories.
399 244	GST05 tripod, wood, plastic coated, lightweight.
667 308	GDF112 tribrach with optical plummet.
667 216	GRT146 carrier with 5/8" screw.
667 244	GZS 4-1 Height hook with integrated tape measure. Supplied with additional tape graduated in feet and inches.

Select Pole

Aluminium pole

667 223	GHT25, Grip with circular bubble and fixing element.
667 221	GLS17, Bottom section aluminium pole with steel tip.
667 222	GLS18, Top section aluminium pole with 5/8" screw.

Carbon fibre pole

667 223	GHT25, Grip with circular bubble and fixing element.
667 225	GLS20, Bottom section carbon-fibre pole with steel tip.
667 226	GLS21, Top section carbon-fibre pole with 5/8" screw.

Controller and Sensor separated

733 264	Holder for RX1210 Controller on pole
733 265	GHT40, Holder for all variants of GX1200+ Receivers for balanced all-on-the-pole setup.

Controller and Sensor together

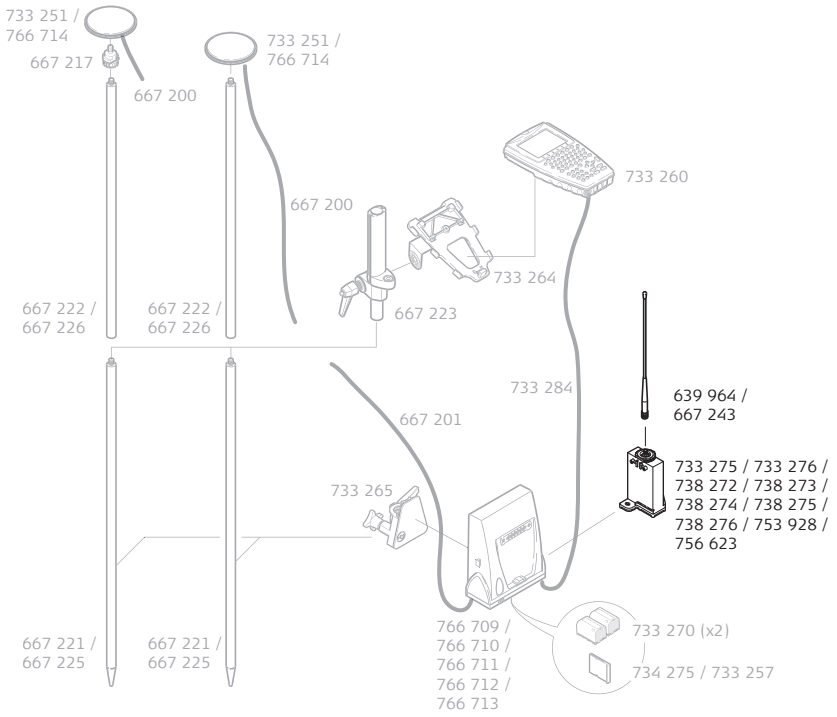
738 169	GHT50, Holder for all variants of GX1200+ Receiver with controller on pole, for all-on-the-pole setup with minimum weight.

Note: GPS antenna must be fitted with 667 217 screw-to-stub adapter if 667 224 or 667 227 top section pole with stub is preferred.

Note: The carbon fibre telescopic pole 752 292 can be used as an option instead of the above poles. In this case, clamp arrangement 742 007 should be ordered instead of grip 667 223.

752 292	GLS30, GPS telescopic carbon-fibre pole with circular bubble and 5/8" screw, snap-locks at 2,00m
742 007	GHT52, Clamp arrangement for attaching the GHT39 or GHT56 to all GLS poles.

GX1200+ Rover – All-on-Pole Suggested Additional Equipment for Real-Time



Radio Modem

Satelline 3AS radio modem, integrated into housing, fits on side of GPS1200+ Receiver.

733 275	GFU14-0, Satelline 3AS radio modem (433.525 MHz, 25.0 kHz channel spacing, 0.5 W)
733 276	GFU14-1, Satelline 3AS radio modem (406.425 MHz, 25.0 kHz channel spacing, 1.0 W)
738 272	GFU14-2, Satelline 3AS radio modem (445.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 273	GFU14-3, Satelline 3AS radio modem (443.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 274	GFU14-4, Satelline 3AS radio modem (440.550 MHz, 25.0 kHz channel spacing, 0.5 W)
738 275	GFU14-5, Satelline 3AS radio modem (458.150 MHz, 12.5 kHz channel spacing, 1.0 W)
738 276	GFU14-6, Satelline 3AS radio modem (439.8625 MHz, 12.5 kHz channel spacing, 1.0 W)
753 928	GFU14-7, Satelline 3AS radio modem (464.5000 MHz, 25.0 kHz channel spacing, 1.0 W)
756 623	GFU14-8, Satelline 3AS radio modem (458.6000 MHz, 25.0 kHz channel spacing, 0.5 W)

Note: The equipment is based on Satelline radio modems. Changes have to be made for Pacific Crest or other radio modems or GSM/CMDA modems in GFU housings.

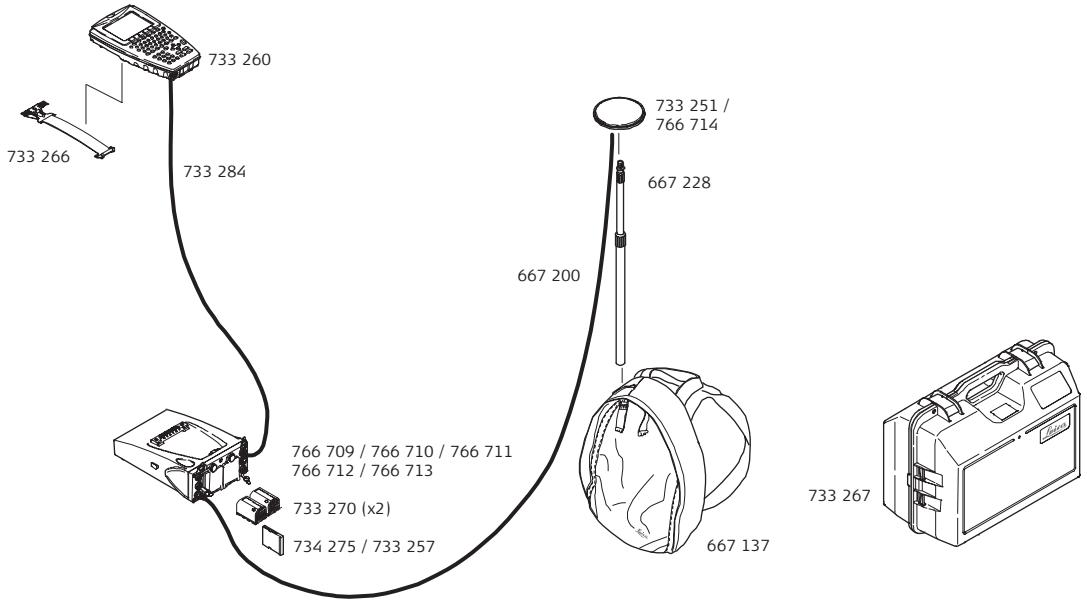
Select Radio Antenna

639 964	GAT1, Gainflex radio antenna, frequency range 400 – 435MHz.
	or
667 243	GAT2, Gainflex radio antenna, frequency range 435 – 470MHz.

Note: The GX1230+/GX1230+ GNSS has RTCM and real-time built in. The GX1210+ and GX1220+/GX1220+ GNSS need the following option to be able to perform DGPS.

734 390	GSW377, DGPS/RTCM input/output option for GX1210+ and GX1220+/GX1220+ GNSS Receivers.

GIS GX1200+ Rover Set-Up with Minipack
Suggested Equipment for Post-Processing



Select Receiver

766 709	GX1210+, Single Frequency Survey GPS Receiver.
766 710	GX1220+, Geodetic GPS Dual Frequency Receiver. Sensor can be upgraded to GNSS receiver.
766 711	GX1230+, Geodetic GPS Dual Frequency RTK Receiver. Sensor can be upgraded to GNSS receiver.

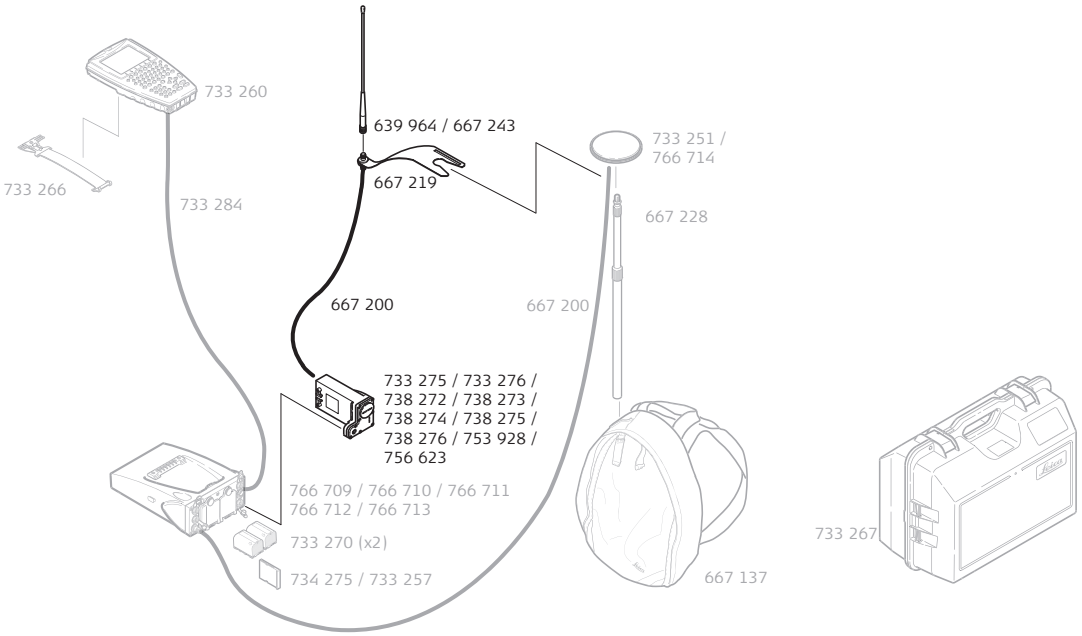
Select GNSS receiver

766 713	GX1220+ GNSS, Geodetic GPS/GLONASS/Galileo Triple Frequency Receiver. Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.
766 712	GX1230+ GNSS, Geodetic GPS/GLONASS/Galileo Triple Frequency RTK Receiver. Note, for full GLONASS use, GPS L5 functionality or Galileo functionality, the respective software options need to be ordered accordingly.
751 186	GSW565, GLONASS option for GX1230GG, GX1230+ GNSS, GX1220GG, GX1220+ GNSS and RX1250 Controllers. Without GLONASS option, GLONASS is only enabled each Wednesday.
768 423	GSW705 GPS L5 option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers.
766 716	GSW678 Galileo option for GX1220+ GNSS, GX1230+ GNSS sensors and RX1250 controllers
6002647	Pre-Signal Bundle for GX1220+ GNSS, GX1230+ GNSS and RX1250 Controllers, consists of GLONASS option, GPS L5 option and Galileo option.

Select Antenna

733 251	AX1201, single frequency antenna with 5/8" thread for GX1210+ receiver.
766 714	AX1203+ GNSS, GPS/GLONASS/Galileo Triple Frequency antenna with 5/8" thread for GX1200+ (GNSS) receivers.
667 228	Telescopic rod with 5/8 inch screw. Fits in minipack 667137. Fits in base 667236.
667 200	GEV141, 1.2m antenna cable.
733 260	RX1210T, System 1200 Controller with touch screen.
733 283	GEV163, 1.8m Controller cable connects RX1200 Controller series to GX1200+ Receiver.
733 270	GEB221, Lithium-Ion battery, 7.4V/4.4Ah, rechargeable. To be used with TPS1200+ and GPS1200+ series.
733 271	GKL221, Charger PRO. To be used with up to two charging adapters GDI221 or GDI222. Charger cable and net adapter included.
733 323	GDI221, Adapter for GKL221 for charging 2 Li-Ion batteries GEB221, GEB211.
733 257	MCF256, CompactFlash card 256MB.
733 258	MCFAD1, CompactFlash PC card adapter.
733 267	GVP623, Hard container for GX1200+ and GRX1200+ Receivers, AX1201/AX1203+ GNSS Antenna, RX1200 Controller series, cables and accessories.
667 137	Minipack, holds GPS receiver (and modems).

GIS GX1200+ Rover Set-Up with Minipack Suggested Additional Equipment for Real-Time or DGPS



Radio Modem

Satelline 3AS radio modem, integrated into housing, fits on side of GPS1200+ Receiver

733 275	GFU14-0, Satelline 3AS radio modem (433.525 MHz, 25.0 kHz channel spacing, 0.5 W)
733 276	GFU14-1, Satelline 3AS radio modem (406.425 MHz, 25.0 kHz channel spacing, 1.0 W)
738 272	GFU14-2, Satelline 3AS radio modem (445.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 273	GFU14-3, Satelline 3AS radio modem (443.000 MHz, 12.5 kHz channel spacing, 1.0 W)
738 274	GFU14-4, Satelline 3AS radio modem (440.550 MHz, 25.0 kHz channel spacing, 0.5 W)
738 275	GFU14-5, Satelline 3AS radio modem (458.150 MHz, 12.5 kHz channel spacing, 1.0 W)
738 276	GFU14-6, Satelline 3AS radio modem (439.8625 MHz, 12.5 kHz channel spacing, 1.0 W)
753 928	GFU14-7, Satelline 3AS radio modem (464.5000 MHz, 25.0 kHz channel spacing, 1.0 W)
756 623	GFU14-8, Satelline 3AS radio modem (458.6000 MHz, 25.0 kHz channel spacing, 0.5 W)

Note: The equipment is based on Satelline radio modems. Changes have to be made for Pacific Crest or other radio modems or GSM/CMDA modems in GFU housings.

Select Radio Antenna

639 964	GAT1, Gainflex radio antenna, frequency range 400 – 435MHz.
667 243	GAT2, Gainflex radio antenna, frequency range 435 – 470MHz.
667 200	GEV141, 1.2m antenna cable.
667 219	Arm 15 cm long, attaches to GPS antenna

Note: The GX1230+/GX1230+ GNSS has RTCM and real-time built in. The GX1210+ and GX1220+/GX1220+ GNSS need the following option to be able to perform DGPS.

734 390	GSW377, DGPS/RTCM input/output option for GX1210+ and GX1220+/GX1220+ GNSS Receivers.

Customer Care Packages

A wide selection of comprehensive Customer Care Packages (CCPs) is available bundling Hardware Maintenance, Software Maintenance, Customer Support and Extended Warranty.
For more information about the CCP offering in your country please contact your local Leica Geosystems organization or distribution partner.

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.

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Heerbrugg, Switzerland
www.leica-geosystems.com

- when it has to be **right**

Leica Geosystems