

Leica Viva GNSS Equipment List



- when it has to be **right**

Leica
Geosystems

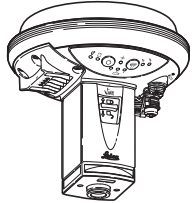
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GS15 GNSS Receiver

1 GS15 GNSS Receiver



771 501	GS15	Leica GS15 Single Frequency SmartAntenna
767 789	GS15	Leica GS15 Basic SmartAntenna
771 502	GS15	Leica GS15 Limited SmartAntenna
771 503	GS15	Leica GS15 Performance SmartAntenna
771 504	GS15	Leica GS15 Professional SmartAntenna

	Leica GS15 Single Frequency	Leica GS15 Basic	Leica GS15 Limited	Leica GS15 Perform- ance	Leica GS15 Profes- sional
Supported GNSS Systems					
GPS L2	○	●	●	●	●
GPS L5	○	○	○	○	●
GLONASS	○	○	○	○	●
Galileo	○	○	○	○	●
RTK performance					
DGPS/RTCM	○	○	●	●	●
RTK up to 5km	○	○	●	●	●
RTK unlimited	○	○	○	●	●
Network RTK	○	○	○	●	●
Leica Lite RTK	○	○	○	○	●
Position update & data recording					
5 Hz positioning	●	○	●	●	●
20 Hz positioning	○	○	○	●	●
Raw data logging	●	○	●	●	●
RINEX logging	○	○	○	○	●
NMEA out	○	○	○	○	●
Additional features					
RTK Reference Station functionality	○	○	○	●	●

● Standard
○ Optional

1.1 Producer Certificates for GS15 Receiver



366 358	GDI33	Producer Certificate O.
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2 Additional GS15 Receiver Options

GNSS software options

771 500	LOP19	GPS L2 option, enables GPS L2 and GPS L2C tracking on a GS10 or GS15 receiver.
767 804	LOP1	GPS L5 option, enables GPS L5 tracking on a GS10 or GS15 receiver.
767 805	LOP2	GLONASS option, enables GLONASS tracking on a GS10 or GS15 receiver.
767 806	LOP3	Galileo option, enables Galileo tracking on GS10 or GS15 receiver.

Position rate and data recording options

767 807	LOP4	5Hz option, enables to compute positions with an update rate up to 5Hz.
767 808	LOP5	20Hz option, enables to compute positions with an update rate up to 20Hz.
767 809	LOP6	Upgrade option from 5Hz to 20Hz. (LOP4 to LOP5)
767 810	LOP7	Raw data option, allows logging of GNSS raw data on GS10 or GS15 receiver or on a CS10/CS15 field controller.
767 811	LOP8	RINEX option, allows logging of RINEX data on GS10 or GS15 receiver.
767 818	LOP15	NMEA out option, enables NMEA to be streamed from GS10 or GS15 receivers.

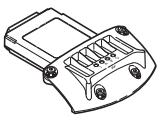
RTK performance options

771 497	LOP16	DGPS/RTCM input/output option for GS10 and GS15 receivers, enables a receiver to receive RTCM 1, 2 and 9 messages.
767 812	LOP9	5km RTK option, enables RTK positions to be computed up to a distance of 5km from a single base station.
767 813	LOP10	Unlimited RTK option, enables RTK positions to be computed from a single base station with no limit of distance.
767 814	LOP11	Upgrade from 5km RTK to unlimited RTK. (LOP9 to LOP10)
767 815	LOP12	Unlimited RTK and Network RTK, enables RTK position to be computed from a single base station and within a RTK network.
767 817	LOP14	Upgrade option for GS10 or GS15 receivers from RTK unlimited only to RTK unlimited including RTK Network. (LOP10 to LOP12)
771 971	LOP20	Leica Lite option, to receive System 900 RTK data on the GS10, GS15 receivers.

Other options

767 816	LOP13	RTK Reference station option, allows a GS10 or GS15 receiver to transmit RTK data.
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3 RTK Modems



Satellite radio modules

767 819	SLR1	Satellite 3AS 403-470 MHz TXO radio. RTK transmitting only UHF radio module to be easily plugged into the GS15 GNSS receiver.
767 820	SLR2	Satellite 3AS 403-470 MHz RXO radio. RTK receive only UHF radio module to be easily plugged into the GS15 GNSS receiver.

Pacific Crest radio modules

767 821	SLR3-1	Pacific Crest ADL RX/TX radio 390-430Mhz. RTK receive and transmit UHF radio module to be easily plugged into the GS15 GNSS receiver.
767 822	SLR3-2	Pacific Crest ADL RX/TX radio 430-470Mhz. RTK receive and transmit UHF radio module to be easily plugged into the GS15 GNSS receiver.

6002544		Configuration tool kit for programming Satellite and Pacific Crest SLR RTK radio modules; includes programming cable GEV231 and configuration software CD ROM.
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SLR radios will be delivered pre-configured according to country-specific radio regulations. In countries where radios need to be configured locally, the configuration tool kit is to be used.



External high power radios such as Satellite Epic Pro (10, 35W), Pacific Crest (2, 35W) or GFU radios can be used for RTK communication instead of the slot-in RTK modems.

Mobile phone modules

767 823	SLG1	5-Band (850/900/1800/1900/2100MHz) Telit GSM/GPRS/UMTS module. Provides full flexibility due to 5-band technology and is globally compatible to all GSM, GPRS, EDGE and UMTS network providers. Can be easily plugged into the GS15 GNSS receiver.
774 689	SLG2	4-Band (850/900/1800/1900MHz) Siemens MC75i GSM/GPRS module. Universal 4-band technology supports GSM, GPRS, and EDGE network providers. Can be easily plugged into the GS15 GNSS receiver.
767 824	SLC1	Dual band Telit CDMA 1xRTT module for US. Supports Sprint (US) network provider and can be easily plugged into the GS15 GNSS receiver.

4 External RTK Antennas

4.1 External RTK Antennas



The GS15 receiver is equipped with internal GSM/GPRS/UMTS antenna and internal UHF antenna as standard. In areas of poor GSM/GPRS/UMTS or UHF reception, the use of an external RTK antenna may improve reception.



RTK antenna arm

767 790	GAD108	Arm to mount external UHF/GSM antenna to GS15 SmartAntenna, useful in areas of poor radio or GSM network reception.
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Gainflex radio antennas

639 964	GAT1	Gainflex radio antenna (frequency range 400-435MHz).
667 243	GAT2	Gainflex radio antenna (frequency range 435-470MHz).

Antennas for mobiles phones

667 237	GAT3	Antenna for 900/1800MHz mobile network.
734 756	GAT5	Antenna for US mobile network (850/1900MHz).

4.2 Accessories for Mounting External RTK Antenna on Second Tripod (Base)



Adapter

767 791	GAD109	Transition adapter from external UHF/GSM antenna connector of a GS15 SmartAntenna to standard TNC connector. Allows to connect an external GSM/UHF antenna via gainflex cable to the GS15 SmartAntenna using the receiver as a Reference Station.
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RTK antenna cables

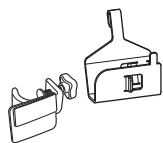
636 959	GEV120	2.8m antenna cable.
667 201	GEV142	1.6m extension antenna cable.



Telescopic rod, antenna arm and base for telescopic rod

667 228	GAD32	Telescopic rod with 5/8" screw. Fits in base 667 236.
667 220	GAD34	Arm 3cm long, screws on telescopic rod. Gainflex antenna fits on arm. Antenna cable connects to arm.
667 236	GHT36	Base with 5/8" screw, for setting up telescopic rod on tripod.

5 Accessories for Using External Radios with GS15 Receiver



Radio cables to GFU radios

767 897	GEV232	Radio cable, 2.8m, connects GS15 receiver to System1200 GFU devices.
767 898	GEV233	Radio cable, 0.8m, connects GS15 receiver to System1200 GFU devices.

Brackets and holders for GFU radios

748 417	GHT58	Bracket to mount a radio built into the Leica GFU radio housing on a tripod.
767 896	GHT64	Holder for GFU radios. Attaches to all GPS poles.

Cables for external radios

762 026	GEV221	Y-cable, connects Satelline 3AS Epic Pro (10W) to GS10/GS15 receiver and 12V car battery.
733 297	GEV171	1.8m Y-cable to program the Satelline 3AS radio modem inside the GFU14 housing.
639 968	GEV125	Cable for Satelline radios without GFU housing to be connected to GS10/GS15 receivers.
748 418	GEV205	Y-cable for RTK reference setup, connects GS15 receiver to a GEB171 external battery and a Leica GFU radio.

6 Additional Accessories for GS15 Pole Setups - GNSS Rover

6.1 Survey Poles



Poles with 5/8" screw

768 226	GLS13	Telescopic aluminium GNSS pole with 5/8" screw. Snap locks at 1.80m and 2.00m. Includes circular bubble.
752 292	GLS30	Telescopic carbon GNSS pole with 5/8" screw. Snap locks at 1.80m and 2.00m. Includes circular bubble.

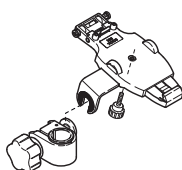
Poles with stub



Requires GAD31 screw to stub adapter for GS15 receiver to be mounted on these poles.

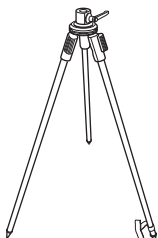
754 391	GLS12	Telescopic aluminium total station reflector pole with stub. Snap locks at 2.00m for GNSS antennas.
766 359	GLS31	Telescopic carbon total station reflector pole with stub. Snap locks at 2.00m for GNSS antennas.
667 217	GAD31	Screw to stub adapter.

6.2 Holder and Clamp for Poles



767 879	GHT62	Pole holder base plate for CS10 and CS15 field controller.
767 880	GHT63	Clamp arrangement for attaching the GHT62 to all poles.

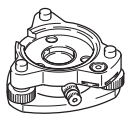
6.3 QuickStand



560 138	GST6	Quickstand with 3 telescopic legs, for aluminium or carbon fibre poles.
667 319	GSR111	Dual-strut support, for all GLS poles.

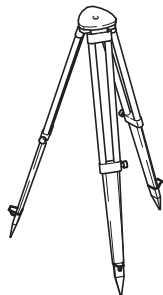
7 Additional Accessories for GS15 Tripod Setups - GNSS Base

7.1 Tribrachs



667 304	GDF121	PRO tribrach, without optical plummet, pale green.
667 307	GDF122	PRO tribrach, with optical plummet, pale green.
667 308	GDF112	BASIC tribrach, with optical plummet, pale green/red.

7.2 Tripods



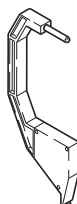
399 244	GST05	Wooden tripod with polymer coating, with accessories.
563 630	GST05L	Aluminium tripod, telescopic, with accessories.
667 301	GST120-9	Tripod, telescopic, selfclosing, with accessories, without pouch.

7.3 Carriers



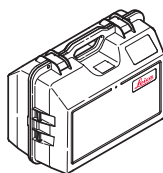
770 715	GRT247	Carrier with 5/8" screw for GS15 SmartAntenna.
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7.4 Height Hook



667 244	GZS4-1	Height hook with integrated tape measure. Supplied with additional tape graduated in feet and inches.
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8 Containers for GS15 Receiver

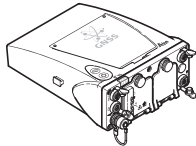


 All GS15 need to be ordered with at least one container.

767 827	GVP641	Hard container for 2x GS15 GNSS SmartAntenna and CS10/CS15 field controller. The container allows a GS15 base station and GS15 rover with all accessories to be transported.
767 828	GVP642	Hard container for GS15 SmartAntenna and CS10/CS15 field controller. The container allows a GS15 rover, and all accessories for a SmartStation and SmartPole to be transported.

GS10 GNSS Receiver

9 GS10 GNSS Receiver

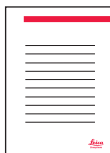


771 508	GS10	Leica GS10 Single Frequency receiver
770 704	GS10	Leica GS10 Basic receiver
771 509	GS10	Leica GS10 Limited receiver
771 510	GS10	Leica GS10 Performance receiver
771 511	GS10	Leica GS10 Professional receiver

	Leica GS10 Single Frequency	Leica GS10 Basic	Leica GS10 Limited	Leica GS10 Perform- ance	Leica GS10 Profes- sional
Supported GNSS Systems					
GPS L2	○	●	●	●	●
GPS L5	○	○	○	○	●
GLONASS	○	○	○	○	●
Galileo	○	○	○	○	●
RTK performance					
DGPS/RTCM	○	○	●	●	●
RTK up to 5km	○	○	●	●	●
RTK unlimited	○	○	○	●	●
Network RTK	○	○	○	●	●
Leica Lite RTK	○	○	○	○	●
Position update & data recording					
5 Hz positioning	●	○	●	●	●
20 Hz positioning	○	○	○	●	●
Raw data logging	●	○	●	●	●
RINEX logging	○	○	○	○	●
NMEA out	○	○	○	○	●
Additional features					
RTK Reference Station functionality	○	○	○	●	●

● Standard
○ Optional

9.1 Producer Certificates for GS10 Receiver



366 358	GDI33	Producer Certificate O.
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10 Additional GS10 Receiver Options

GNSS software options

771 500	LOP19	GPS L2 option, enables GPS L2 and GPS L2C tracking on a GS10 or GS15 receiver.
767 804	LOP1	GPS L5 option, enables GPS L5 tracking on a GS10 or GS15 receiver.
767 805	LOP2	GLONASS option, enables GLONASS tracking on a GS10 or GS15 receiver.
767 806	LOP3	Galileo option, enables Galileo tracking on GS10 or GS15 receiver.

Position rate and data recording options

767 807	LOP4	5Hz option, enables to compute positions with an update rate up to 5Hz.
767 808	LOP5	20Hz option, enables to compute positions with an update rate up to 20Hz.
767 809	LOP6	Upgrade option from 5Hz to 20Hz. (LOP4 to LOP5)
767 810	LOP7	Raw data option, allows logging of GNSS raw data on GS10 or GS15 receiver or on a CS10/CS15 field controller.
767 811	LOP8	RINEX option, allows logging of RINEX data on GS10 or GS15 receiver.
767 818	LOP15	NMEA out option, enables NMEA to be streamed from GS10 or GS15 receivers.

RTK performance options

771 497	LOP16	DGPS/RTCM input/output option for GS10 and GS15 receivers, enables a receiver to receive RTCM 1, 2 and 9 messages.
767 812	LOP9	5km RTK option, enables RTK positions to be computed up to a distance of 5 km from a single base station.
767 813	LOP10	Unlimited RTK option, enables RTK positions to be computed from a single base station with no limit of distance.
767 814	LOP11	Upgrade from 5km RTK to unlimited RTK. (LOP9 to LOP10)
767 815	LOP12	Unlimited RTK and Network RTK, enables RTK position to be computed from a single base station and within a RTK network.
767 817	LOP14	Upgrade option for GS10 or GS15 receivers from RTK unlimited only to RTK unlimited including RTK Network. (LOP10 to LOP12)
771 971	LOP20	Leica Lite option, to receive System 900 RTK data on the GS10, GS15 receivers.

Other options

767 816	LOP13	RTK Reference station option, allows a GS10 or GS15 receiver to transmit RTK data.
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11 GNSS Antennas



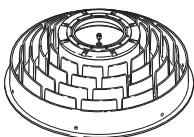
Select the antenna for GS10 receiver.
Choke ring antennas are only required for special applications such as when using a GS10 receiver as a permanent reference station receiver.

11.1 GNSS Single and Triple Frequency Antennas



770 708	AS05	GPS/GLONASS single frequency antenna.
770 701	AS10	GPS/GLONASS/Galileo triple frequency antenna.

11.2 Choke Ring Antennas



755 267	AT504GG	Dual-frequency antenna for GNSS receivers. Dorne-Margolin antenna element, JPL design. Conforms to IGS Typ T specification for GPS antennas.
765 733	AR25	GNSS choke-ring antenna for GNSS receivers. Includes L-Band signals.
667 140	GVP601	Weather protection radome for AT504GG antenna.
765 734	GVP653	Weather protection radome for AR25 antenna.

12 GNSS Antenna Cables for GS10 Receiver

12.1 GNSS Antenna Cables for GS10 using as Rover



667 200	GEV141	1.2m antenna cable.
667 201	GEV142	1.6m extension for antenna cable.
724 969	GEV194	1.8m antenna cable.

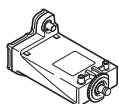
12.2 GNSS Antenna Cables for GS10 Base Setup



Short cables		
667 200	GEV141	1.2m antenna cable.
724 969	GEV194	1.8m antenna cable.
Medium cables		
636 959	GEV120	2.8m antenna cable.
632 372	GEV119	10m antenna cable.
Extra long cables		
632 390	GEV108	30m antenna cable.
664 813	GEV134	50m antenna cable.

13 RTK Modems

13.1 Satellite Radio Modems

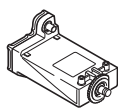


Satellite modems		
733 275	GFU14-0	Satellite 3AS radio modem (433.525MHz, 25.0kHz channel spacing, 0.5W) already intergrated into housing, fits on side of GPS receiver. User manual and CE Declaration of Conformity included.
733 276	GFU14-1	Satellite 3AS radio modem (406.425MHz, 25.0kHz channel spacing, 1.0W) already intergrated into housing, fits on side of GPS receiver. User manual and CE Declaration of Conformity included.
738 272	GFU14-2	Satellite 3AS radio modem (445.000MHz, 12.5kHz channel spacing, 1.0W) already intergrated into housing, fits on side of GPS receiver. User manual and CE Declaration of Conformity included.
738 273	GFU14-3	Satellite 3AS radio modem (443.000MHz, 12.5kHz channel spacing, 1.0W) already intergrated into housing, fits on side of GPS receiver. User manual and CE Declaration of Conformity included.
738 274	GFU14-4	Satellite 3AS radio modem (440.550MHz, 25.0kHz channel spacing, 0.5W) already intergrated into housing, fits on side of GPS receiver. User manual and CE Declaration of Conformity included.
738 275	GFU14-5	Satellite 3AS radio modem (458.150MHz, 12.5kHz channel spacing, 1.0W) already intergrated into housing, fits on side of GPS receiver. User manual and CE Declaration of Conformity included.
738 276	GFU14-6	Satellite 3AS radio modem (439.8625MHz, 12.5kHz channel spacing, 1.0W) already intergrated into housing, fits on side of GPS receiver. User manual and CE Declaration of Conformity included.
753 928	GFU14-7	Satellite 3AS radio modem (464.5000MHz, 25.0kHz channel spacing, 1.0W) already intergrated into housing, fits on side of GPS receiver. User manual and CE Declaration of Conformity included.
756 623	GFU14-8	Satellite 3AS radio modem (458.6000MHz, 25.0kHz channel spacing, 0.5W) already intergrated into housing, fits on side of GPS receiver. User manual and CE Declaration of Conformity included.
Cables for Satellite modems		
733 297	GEV171	1.8m Y-cable to program the Satellite 3AS radio modem inside the GFU14 housing.
762 026	GEV221	Y-cable, connects Satellite 3AS Epic Pro (10W) to GS10/GS15 and 12V car battery.
639 968	GEV125	Cable for Satellite radios without GFU housing to be connected to GS10/GS15.

13.2 Pacific Crest Radio Modems



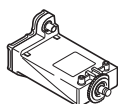
Pacific Crest radio modems must be ordered directly from your local Pacific Crest office or representative.



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

13.3 Mobile Phones



750 242	GFU24	Housing with Siemens MC75 GSM/GPRS module (Quad-Band GSM 850/900/1800/1900MHz), fits on side of GS10 receiver.
750 243	GFU25	CDMA cellular phone for Canada, Multitech MTMMC-C-N12 for Bell mobility network, integrated into housing, fits on side of GS10 receiver.
744 754	GFU19	US CDMA cellular phone Multitech MTMMC-C-N3 for Verizon network, integrated into housing, fits on side of GS10 receiver.

14 RTK Antennas

14.1 External RTK Antennas



Gainflex radio antennas

639 964	GAT1	Gainflex radio antenna (frequency range 400-435MHz).
667 243	GAT2	Gainflex radio antenna (frequency range 435-470MHz).

Antennas for mobile phones

667 237	GAT3	Antenna for 900/1800MHz mobile network.
734 756	GAT5	Antenna for US mobile network (850/1900MHz).

14.2 Accessories for Mounting RTK Antenna on the AS05/AS10 Antenna



Antenna cables

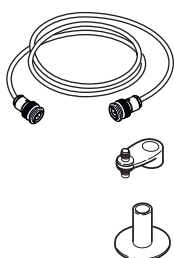
667 200	GEV141	1.2m antenna cable.
667 201	GEV142	1.6m extension for antenna cable.
724 969	GEV194	1.8m antenna cable.
636 959	GEV120	2.8m antenna cable.



RTK antenna arm

667 219	GAD33	15cm, attaches to GNSS antenna. Gainflex antenna fits on arm. Antenna cable connects to arm.
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14.3 Accessories for Mounting RTK Antenna on Second Tripod (Base)



RTK antenna cables

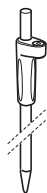
636 959	GEV120	2.8m antenna cable.
667 201	GEV142	1.6m extension for antenna cable.

Telescopic rod, antenna arm and base for telescopic rod

667 228	GAD32	Telescopic rod with 5/8" screw. Fits in base 667 236.
667 220	GAD34	Arm 3cm long, screws on telescopic rod. Gainflex antenna fits on arm. Antenna cable connects to arm.
667 236	GHT36	Base with 5/8" screw, for setting up telescopic rod on tripod.

15 Additional Accessories for GS10 Pole Setups - GNSS Rover

15.1 Survey Poles



Poles with 5/8" screw

768 226	GLS13	Telescopic aluminium GNSS pole with 5/8" screw. Snap locks at 1.80m and 2.00m. Includes circular bubble.
752 292	GLS30	Telescopic carbon GNSS pole with 5/8" screw. Snap locks at 1.80m and 2.00m. Includes circular bubble.

Poles with stub



Requires GAD31 screw to stub adapter for GS15 receiver to be mounted on these poles.

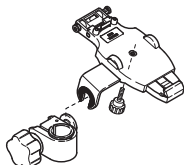
754 391	GLS12	Telescopic aluminium total station reflector pole with stub. Snap locks at 2.00m for GNSS antennas.
766 359	GLS31	Telescopic carbon total station reflector pole with stub. Snap locks at 2.00m for GNSS antennas.
667 217	GAD31	Screw to stub adapter.

15.2 Minipack Setup



Backpack

667 137	GVP603	Minipack, holds GS10 GNSS Receiver.
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Holders

767 879	GHT62	Pole holder base plate for CS10 and CS15 field controller.
767 880	GHT63	Clamp arrangement for attaching the GHT62 to all poles (except mini reflector poles).

Antenna cables

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

Telescopic rod and RTK antenna arm

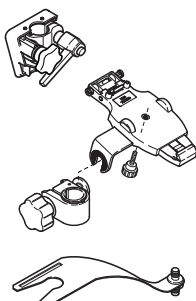
667 228	GAD32	Telescopic rod with 5/8" screw. Fits in Minipack 667 137. Fits in base 667 236.
667 220	GAD34	Arm 3cm long, screws on telescopic rod. Gainflex antenna fits on arm. Antenna cable connects to arm.
734 388	GAD46	Double arm adapter, screws on telescopic rod. Allows to connect up to 2 mobile phone/radio antennas and up to 2 antenna cables on arm.



15.3 All on the Pole Setup



Only possible when using GLS12/GLS13 poles.



Holders

733 265	GHT40	Holder for all variants of GS10 for balanced all-on-the-pole setup.
767 879	GHT62	Pole holder base plate for CS10 and CS15 field controller.
767 880	GHT63	Clamp arrangement for attaching the GHT62 to all poles (except mini reflector poles).

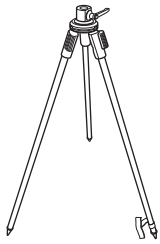
Antenna cable for GNSS antenna and RTK antenna

724 969	GEV194	1.8m antenna cable.
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RTK antenna arm

667 219	GAD33	15cm, attaches to GNSS antenna. Gainflex antenna fits on arm. Antenna cable connects to arm.
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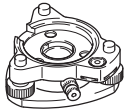
15.4 QuickStand



560 138	GST6	Quickstand with 3 telescopic legs, for aluminium or carbon fibre poles.
667 319	GSR111	Dual-strut support, for all GLS poles.

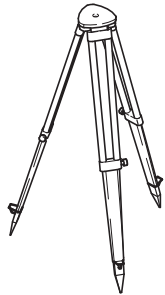
16 Additional Accessories for GS10 Tripod Setups - GNSS Base

16.1 Tribrachs



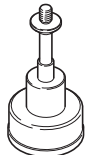
667 304	GDF121	PRO tribrach, without optical plummet, pale green.
667 307	GDF122	PRO tribrach, with optical plummet, pale green.
667 308	GDF112	BASIC tribrach, with optical plummet, pale green/red.

16.2 Tripods



399 244	GST05	Wooden tripod with polymer coating, with accessories.
563 630	GST05L	Aluminium tripod, telescopic, with accessories.
667 301	GST120-9	Tripod, telescopic, selfclosing, with accessories, without pouch.

16.3 Carriers



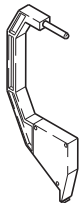
Carriers with 5/8" screw

667 216	GRT146	Carrier with 5/8 inch screw, GNSS antenna screws on directly.
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Carriers with stub

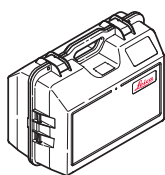
667 313	GRT144	Carrier with stub, pale green.
667 217	GAD31	Screw-to-stub adapter for fitting GPS antenna on carriers with stub and poles with stub.

16.4 Height Hook



667 244	GZS4-1	Height hook with integrated tape measure. Supplied with additional tape graduated in feet and inches.
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17 Container for GS10 Receiver



 All GS10 need to be ordered with at least one container.

770 706	GVP646	Hard container for GS10 receiver, antenna and CS15/CS10 field controller. The container allows a GS10 receiver, and all accessories for a base station to be transported.
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Additional Accessories GS15/GS10

18 Power Supply

18.1 Internal Batteries for GS15 Receiver



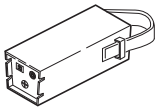
733 269	GEB211	Lithium-Ion battery, 7.4V/2.2Ah, rechargeable. To be used with CS10/CS15 field controller and GS09 or GS15 receiver.
772 806	GEB212	Lithium-Ion battery, 7.4V/2.6Ah, rechargeable. To be used with CS10/CS15 field controller and GS09 or GS15 receiver.

18.2 Internal Batteries for GS10 Receiver



733 270	GEB221	Lithium-Ion battery, 7.4V/4.4Ah, rechargeable. To be used with GS10 receiver.
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18.3 External Power Supply



Battery for GS10/GS15

727 367	GEB171	External universal battery, NiMH, 12V/9Ah, rechargeable.
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Power cables for GS10/GS15

758 469	GEV219	Power cable, 1.8m, connects GS10/GS15 receiver to external GEB171 battery.
439 038	GEV71	4m car battery cable, connects all battery cables to 12V car battery.

Cables for GS10

560 130	GEV97	Power cable, 1.8m, connects GS10 receiver to external GEB171 battery.
733 298	GEV172	Power cable, 2.8m, connects GS10 receiver to 2 external GEB171 batteries.

18.4 Battery Chargers



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 GEB241, GEB221, GEB211 or GEB212.
734 389	GDC221	Car adapter for the GKL221 charger. Allows the use of the GKL221 with a cigarette lighter; 12V/24V DC/DC converter. Can also be used to power CS10/CS15 field controller directly from a cigarette lighter.
734 752	GKL211	Charger BASIC, for Li-Ion batteries GEB221, GEB211 and GEB212, car adapter cable and net adapter included.

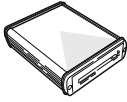
19 Data Storage and Data Transfer

19.1 Memory Devices



767 856	MSD1000	SD memory card 1GB for GS10 and GS15 receiver and CS10 and CS15 field controller.
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19.2 Card Reader



767 895	MCR7	Card reader for SD/CF cards.
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19.3 Data Transfer Cables



Serial cables

733 280	GEV160	Serial data transfer cable, 2.8m, connects GS10/GS15 receiver (port 2) to PC. (Lemo to 9pin RS232)
733 282	GEV162	Serial data transfer cable, 2.8m, connects GS10/GS15 receiver (port 1) or CS10/CS15 controller to PC. (Lemo to 9pin RS232)
723 755	GEV195	Serial data transfer cable, converter cable USB to serial (Lemo to USB connector), 2.0m, connects GS10/GS15 receiver (port 2) to PC. PC driver included on CD.
758 468	GEV218	Serial data transfer cable, converter cable USB to serial (Lemo to USB connector), 2.0m, connects GS10/GS15 receiver (port 1) or CS10/CS15 controller to PC. PC driver included on CD.



USB cable

767 899	GEV234	USB cable, 1.65m, connects GS10/GS15 receiver or CS10/CS15 controller to USB port of a PC or connects GS10/GS15 receiver to CS10/CS15 controller. (Lemo to USB)
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20 Cables to connect GS10/GS15 to CS Controller



In cases where high data speed communication is required between GS10/GS15 and CS controller, cables should be used instead of a Bluetooth connection.





USB cables

767 899	GEV234	USB cable, 1.65m, connects GS10/GS15 receiver or CS10/CS15 controller to USB port of a PC or connects GS10/GS15 receiver to CS10/CS15 controller. (Lemo to USB)
772 807	GEV237	USB cable, 1.65m, connects GS10/GS15 receiver to CS10/CS15 controller. (Lemo to Lemo)

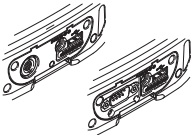
Field Controller

21 Field Controller

21.1 CS10/CS15 Field Controller


Field Controller		
	767 866	CS10 Radio Field Controller CS10 Radio Field Controller. Ruggedized WinCE field controller with full VGA touch display, 1GB NAND flash memory, 512MB SDRAM, CF/SD card slot and 2MP camera. Includes Bluetooth, internal WLAN module, internal TPS radio module, numeric keypad, stylus. Available with either Lemo connector (CBC01) or DSUB connector module (CBC02).
	767 863	CS10 Field Controller CS10 Field Controller. Ruggedized WinCE field controller with full VGA touch display, 1GB NAND flash memory, 512MB SDRAM, CF/SD card slot and 2MP camera. Includes Bluetooth, numeric keypad, stylus. Available with either Lemo connector (CBC01) or DSUB connector module (CBC02).
	767 871	CS15 Radio Field Controller CS15 Radio Field Controller. Ruggedized WinCE field controller with full VGA touch display, 1GB NAND flash memory, 512MB SDRAM, CF/SD card slot and 2MP camera. Includes Bluetooth, internal WLAN module, internal TPS radio module, QWERTY keypad, stylus. Available with either Lemo connector (CBC01) or DSUB connector module (CBC02).
	767 869	CS15 Field Controller CS15 Field Controller. Ruggedized WinCE field controller with full VGA touch display, 1GB NAND flash memory, 512MB SDRAM, CF/SD card slot and 2MP camera. Includes Bluetooth, QWERTY keypad, stylus. Available with either Lemo connector (CBC01) or DSUB connector module (CBC02).
Extra pen		
	767 876	GDZ68 Extra pen with screw driver for CS10 and CS15 field controller.
Anti-glare display foils		
	767 907	SPF01 Anti-glare display foils for CS10 and CS15 field controller.

22 Connector Modules for CS10/CS15 Field Controller

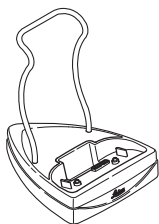
	767 874	CBC01 Lemo connector module with power jack, Lemo (USB and Serial) and USB A host for CS10 and CS15 field controller. ☞ Can only be ordered with CS10/CS15 field controller.
	767 875	CBC02 DSUB connector module with power jack, DSUB 9-pin, USB A host and USB mini AB for CS10 and CS15 field controller. ☞ Can only be ordered with CS10/CS15 field controller.

23 Accessories for Field Controller

23.1 Internal Batteries

	733 269	GEB211 Lithium-Ion battery, 7.4V/2.2Ah, rechargeable. To be used with CS10/CS15 field controller or GS15 receiver.
	772 806	GEB212 Lithium-Ion battery, 7.4V/2.6Ah, rechargeable. To be used with CS10/CS15 field controller or GS15 receiver.

23.2 Docking Station



767 906	CCS01	Docking station for CS10 and CS15 field controller for charging and data transfer to PC, includes: GEV223 (USB A to USB mini data transfer cable).
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23.3 Additional Power Accessories

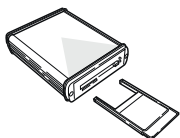
767 900	GEV235	1.5m power cable. Allows CS10/CS15 controller to be externally powered via the power jack. Usable in the EU.
773 753	GEV235-1	1.5m power cable. Allows CS10/CS15 controller to be externally powered via the power jack. Usable in the US.
773 754	GEV235-2	1.5m power cable. Allows CS10/CS15 controller to be externally powered via the power jack. Usable in Japan.
773 755	GEV235-3	1.5m power cable. Allows CS10/CS15 controller to be externally powered via the power jack. Usable in the UK.
773 756	GEV235-4	1.5m power cable. Allows CS10/CS15 controller to be externally powered via the power jack. Usable in Australia.
734 389	GDC221	Car adapter for the GKL221 charger. Allows the use of the GKL221 with a cigarette lighter; 12V/24V DC/DC converter. Can also be used to power CS10/CS15 field controller directly from a cigarette lighter.

23.4 Memory Devices



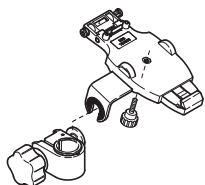
767 856	MSD1000	SD memory card 1GB for GS10/GS15 receiver and CS10/CS15 field controller.
733 257	MCF256	CompactFlash card 256MB for TPS instruments and CS10/CS15 field controller.
745 995	MCF1000	CompactFlash card 1GB for TPS instruments and CS10/CS15 field controller.
765 199	MS1	USB memory stick, 1GB, industrial grade.

23.5 Card Reader & Adapter



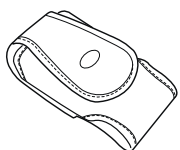
767 895	MCR7	Card reader for SD/CF cards.
733 258	MCFAD1	CompactFlash PC card adapter.

23.6 Pole Accessories for CS10/CS15 Field Controller



767 879	GHT62	Pole holder base plate for CS10 and CS15 field controller.
767 880	GHT63	Clamp arrangement for attaching the GHT62 to all poles.

23.7 Softbags and Hand Strap for CS10/CS15 Field Controller





Soft bags		
767 904	GVP643	Soft bag for CS10 field controller for transportation and protection against dirt. Including belt loop.
767 905	GVP644	Soft bag for CS15 field controller for transportation and protection against dirt. Including belt loop.
Hand strap		
767 877	GHT61	Hand strap for CS10 and CS15 field controller with utility hook for attaching to belt or tripod.

SmartWorx Viva

24 SmartWorx Viva Software and Application Programs

24.1 SmartWorx Viva Software for CS10/CS15 Field Controller

767 908	SmartWorx Viva software and DVD.
767 910	SmartWorx Viva LT licence key.  Requires 767 908 SmartWorx Viva software.
767 909	SmartWorx Viva licence key.  Requires 767 908 SmartWorx Viva software.
767 911	SmartWorx Viva LT to SmartWorx Viva upgrade option.



24.2 Applications Included with SmartWorx Viva

	SmartWorx Viva	SmartWorx Viva LT
Survey includes: <ul style="list-style-type: none"> • Survey • Code Points • Auto points recording • Hidden Points 	● ● ● ●	● ● ○ -
RTK Base Setup includes: <ul style="list-style-type: none"> • Over known point • Over last setup • Over any point  Requires RTK Reference option 767 816 LOP13 on GS10 or GS15.	● ● ●	● ● ●
Stakeout includes: <ul style="list-style-type: none"> • Navigate to point using various methods: North, sun, point and line • Quality control - checking of coordinate differences before storing • Automatic selection of next closest point to stake • Graphical selection of point from map • Edit heights and offset heights of points • Acoustic "reversing beep" when getting closer to point 	● ● ● ● ● ●	○ - - ● - -
COGO includes: <ul style="list-style-type: none"> • Inverse • Traverse • Intersections • Line calculations • Arc calculations • Shift, Rotate & Scale (manual) • Shift, Rotate & Scale (match Points) 	● ● ● ● ● ● ●	● ● ● ● ● ● ●
Determine coordinate system: <ul style="list-style-type: none"> • 1 step, 2 step, 3D Transformation • All common projections 	● ●	● ●
Alignment Tool Kit: <ul style="list-style-type: none"> • Horizontal alignments • Vertical alignments • Cross sections • Chainage equations 	● ● ● ●	● ● ● ●
Data import: ASCII, DXF	●	●
Data export: Custom ASCII, DXF, LandXML, FBK, RW5, RAW	●	●
● All options and functionality available ○ Limited options and functionality - Not available		

24.3 Additional SmartWorx Viva Software Packages

		SmartWorx Viva	SmartWorx Viva LT
767 913	Worksite+ includes: <ul style="list-style-type: none"> • DTM Stakeout application (767 919) • Reference Line application (767 915) • Survey Surface & Volumes application (767 920) <ul style="list-style-type: none"> ● All options and functionality available ○ Limited options and functionality - Not available 	<ul style="list-style-type: none"> ● ● ● 	<ul style="list-style-type: none"> ● ○ ●

24.4 Optional Applications for SmartWorx Viva

		SmartWorx Viva	SmartWorx Viva LT
767 917	COGO Area Division  Requires COGO application.	●	●
767 919	DTM Stakeout  Requires Stakeout application.	●	●
767 915	Reference Line	●	○
767 916	Reference Plane and Face Scan	●	-
767 921	RoadRunner	●	○
767 923	RoadRunner Rail	●	-
770 640	Seismic Stakeout	●	-
767 918	Survey Cross Section	●	-
767 920	Surface and Volumes	●	●
	<ul style="list-style-type: none"> ● All options and functionality available ○ Limited options and functionality - Not available 		

Care Packages

25 Customer Care Packages

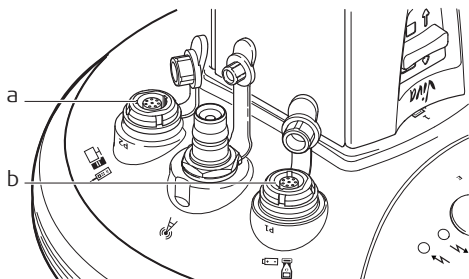


A wide selection of comprehensive Customer Care Packages (CCPs) is available bundling Hardware Maintenance, Software Maintenance, Customer Support and Extended Warranty.

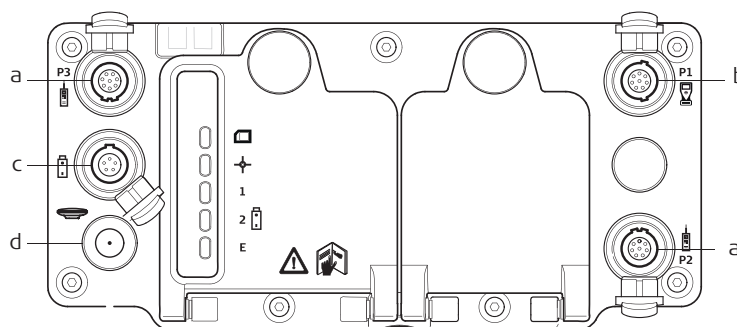
For more information about the CCP offering in your country please contact your local Leica Geosystems organization or distribution partner.

System Viva GNSS Cables Overview

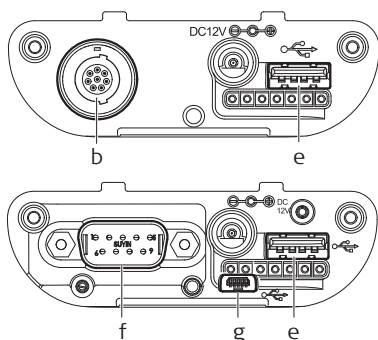
GS15 receiver



GS10 receiver



CS10/CS15 controller



- a) Lemo1, 8pin, 30°
- b) Lemo1, 8pin, 135°
- c) Lemo1, 5pin, 30°
- d) TNC connector
- e) USB type A
- f) RS232 serial, 9pin
- g) Mini USB AB

Power cables

Art. no	Name	Connector 1	Connector 2	Description
560 130	GEV97	Lemo1, 5pin, 30°	Lemo1, 5pin, 30°	Length 1.8 m Allows GS10 (power port) to be externally powered.
758 469	GEV219	Lemo1, 8pin, 135°	Lemo1, 5pin, 30°	Length 1.8 m 1. Allows CS10/CS15 (with Lemo CBC01 connector module) to be externally powered via the Lemo port. 2. Allows GS10/GS15 (port 1) to be externally powered.
767 900	GEV235	Wall adapter	3mm barrel connector	Length 1.5 m Allows CS10/CS15 (with either connector modules) to be externally powered via the power jack. AC/DC wall adapter type is country specific.
439 038	GEV71	Crocodile clips	Lemo1, 5pin, 30° (female)	Length 4.0 m Allows powering of any device from car battery.

Y - power cables

Art. no	Name	Connector 1	Connector 2	Connector 3	Description
733 298	GEV172	Lemo1, 5pin	Lemo1, 5pin, 30°	Lemo1, 5pin, 30°	Length 2.8 m Allows GS10 (power port) to be externally powered by 2 external batteries.
756 365	GEV215	Lemo1, 8pin, 135°	Lemo1, 8pin, 135°	Lemo1, 5pin, 30°	Length 2.0 m Allows connection between CS10/CS15 (with Lemo CBC01 connector module) and GS10/GS15 (port 1) while being powered from the GEB171.
748 418	GEV205	Lemo1, 8pin, 135°	Lemo1, 8pin, 135° (female)	Lemo1, 5pin	Length 1.8 m Allows connection between GS10/GS15 (port 1), external radio in GFU1200 housing and GEB171 with GS and radio being externally powered.

Radio programming cables

Art. no	Name	Connector 1	Connector 2	Connector 3	Description
767 803	GEV231	15pin (GS15 slot-in port) (female)	RS232 serial, 9pin	Lemo1, 5pin	Length 1.8 m Allows an SLR radio device to be externally powered and programmed by a PC.
733 297	GEV171	Lemo1, 8pin, 135° (female)	RS232 serial, 9pin	Lemo1, 5pin	Length 1.8 m Allows a radio within a GFU1200 device to be externally powered and programmed by a PC.

Radio cables

Art. no	Name	Connector 1	Connector 2	Description
767 897	GEV232	Lemo1, 8pin, 30°	Lemo1, 8pin, 30° (female)	Length 2.8 m Allows Sytem1200 GFU housings to be connected to a GS10 (port 2 and 3), or GS15 (port 2).
767 898	GEV233	Lemo1, 8pin, 30°	Lemo1, 8pin, 30° (female)	Length 0.8 m Allows Sytem1200 GFU housings to be connected to a GS10 (port 2 and 3), or GS15 (port 2).
639 968	GEV125	Lemo1, 8pin, 30°	15 pin, RS232 serial	Length 1.8 m Allows a Satelline modem (not inside housing) to be connected to a GS10 (port 2 and 3), or GS15 (port 2).

Serial data transfer cables

Art. no	Name	Connector 1	Connector 2	Description
733 280	GEV160	Lemo1, 8pin, 30°	RS232 serial, 9pin	Length 2.8 m Allows serial connection between GS10 (port 2 and 3), or GS15 (port 2) to PC to stream NMEA or RTK data.
733 282	GEV162	Lemo1, 8pin, 135°	RS232 serial, 9pin	Length 2.8 m 1. Allows serial connection between GS10/GS15 (port 1) to PC to stream NMEA or RTK data. 2. Allows serial connection between CS10/CS15 (with Lemo CBC01 connector module) and hidden point device, ASCII input device, PC etc.
733 283	GEV163	Lemo1, 8pin, 135°	Lemo1, 8pin, 135°	Length 1.8 m Allows serial connection between CS10/CS15 (with Lemo CBC01 connector module) and GS10/GS15 port 1.

USB to serial converter cables

Art. no	Name	Connector 1	Connector 2	Description
723 755	GEV195	Lemo1, 8pin, 30°	USB type A	Length 2.0 m Allows GS10 (port 2 and 3) or GS15 (port 2) to be connected to a PC where a serial connection is required, but no 9pin RS232 port physically exists on the PC. This cable allows a serial connection through the USB port of the PC to the CS or GS hardware.
758 468	GEV218	Lemo1, 8pin, 135°	USB type A	Length 2.0 m Allows CS10/CS15 (with Lemo CBC01 connector module) and GS10/GS15 port 1 to be connected to a PC where a serial connection is required, but no 9pin RS232 port physically exists on the PC. This cable allows a serial connection through the USB port of the PC to the GS hardware.

USB data transfer cables

Art. no	Name	Connector 1	Connector 2	Description
767 899	GEV234	Lemo1, 8pin, 135°	USB type A	Length 1.65 m This cable replaces the older GEV161 cable. 1. Allows a CS10/CS15 (with 9pin serial CBC02 connector module) to connect to a GS10/GS15 (port 1). This is the cable needed for a cable connection needed between CS and GS when the CS is using the CBC02 connector module. 2. Allows a USB connection between the USB port of a PC to a GS10/GS15 (port 1). 3. Allows a USB connection between the USB port of a PC to a CS10/CS15 (with Lemo CBC01 connector module).
764 700	GEV223	USB type A	Mini USB type B	Length 1.8 m Allows USB data transfer between CS10/CS15 (both connector modules) and a PC.
772 807	GEV237	Lemo1, 8pin, 135°	Lemo1, 8pin, 135°	Length 1.65 m This cable replaces the older GEV173 cable. Allows a CS10/CS15 (with Lemo CBC01 connector module) to connect to a GS10/GS15 (port 1). This is the cable needed for a cable connection between CS and GS when the CS is using the CBC01 connector module.

Antenna cables for connecting GNSS antennas or RTK antennas

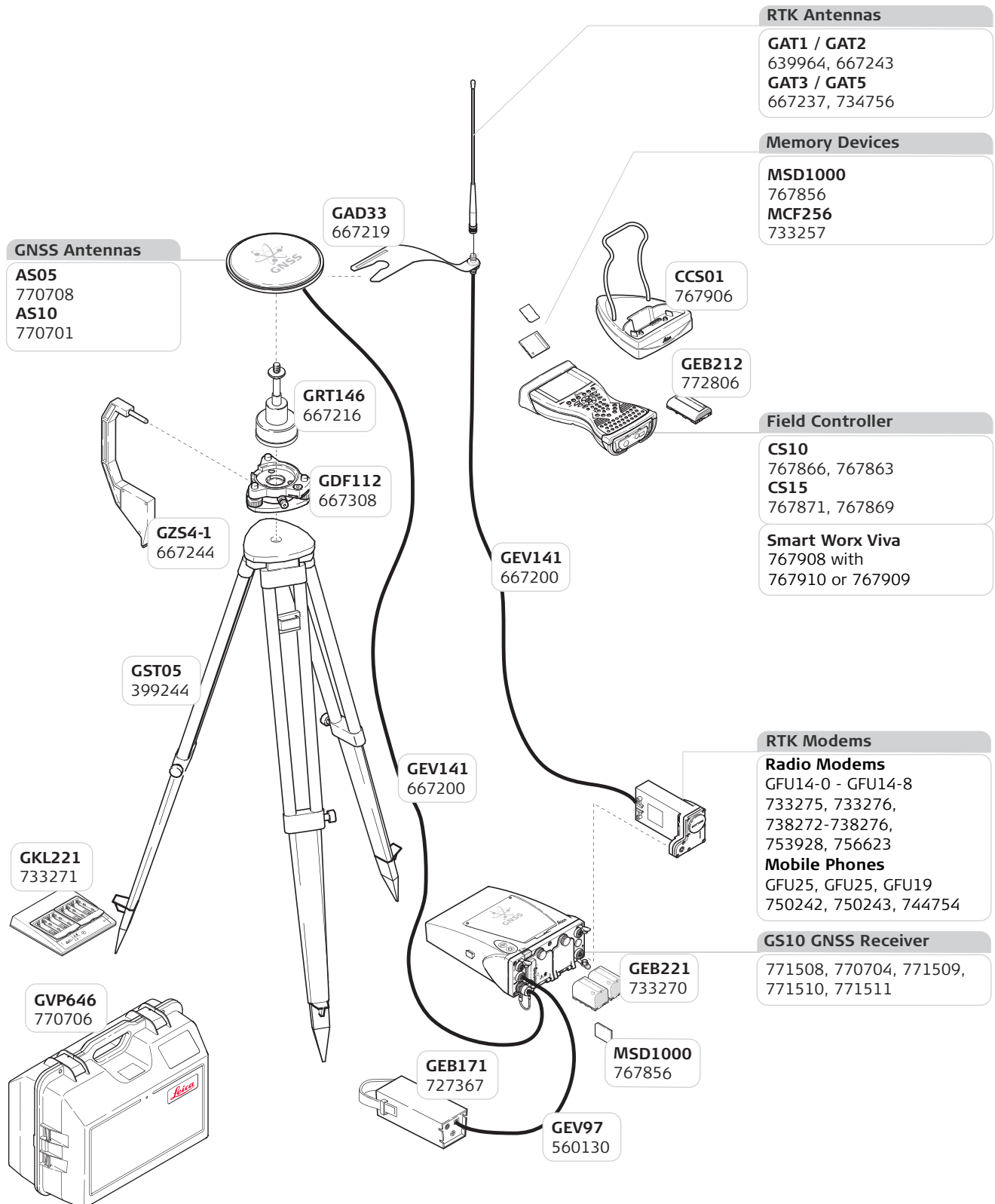
Art. no	Name	Connector 1	Connector 2	Description
667 200	GEV141	TNC connector	TNC connector	Length 1.2 m
667 201	GEV142	TNC connector	TNC connector (male)	Length 1.6 m Extension cable.
636 959	GEV120	TNC connector	TNC connector	Length 2.8 m
632 372	GEV119	TNC connector	TNC connector	Length 10 m
632 390	GEV108	TNC connector	TNC connector	Length 30 m
664 813	GEV134	TNC connector	TNC connector	Length 50 m

26 GS10 Real Time Rover- Pole plus Minipack

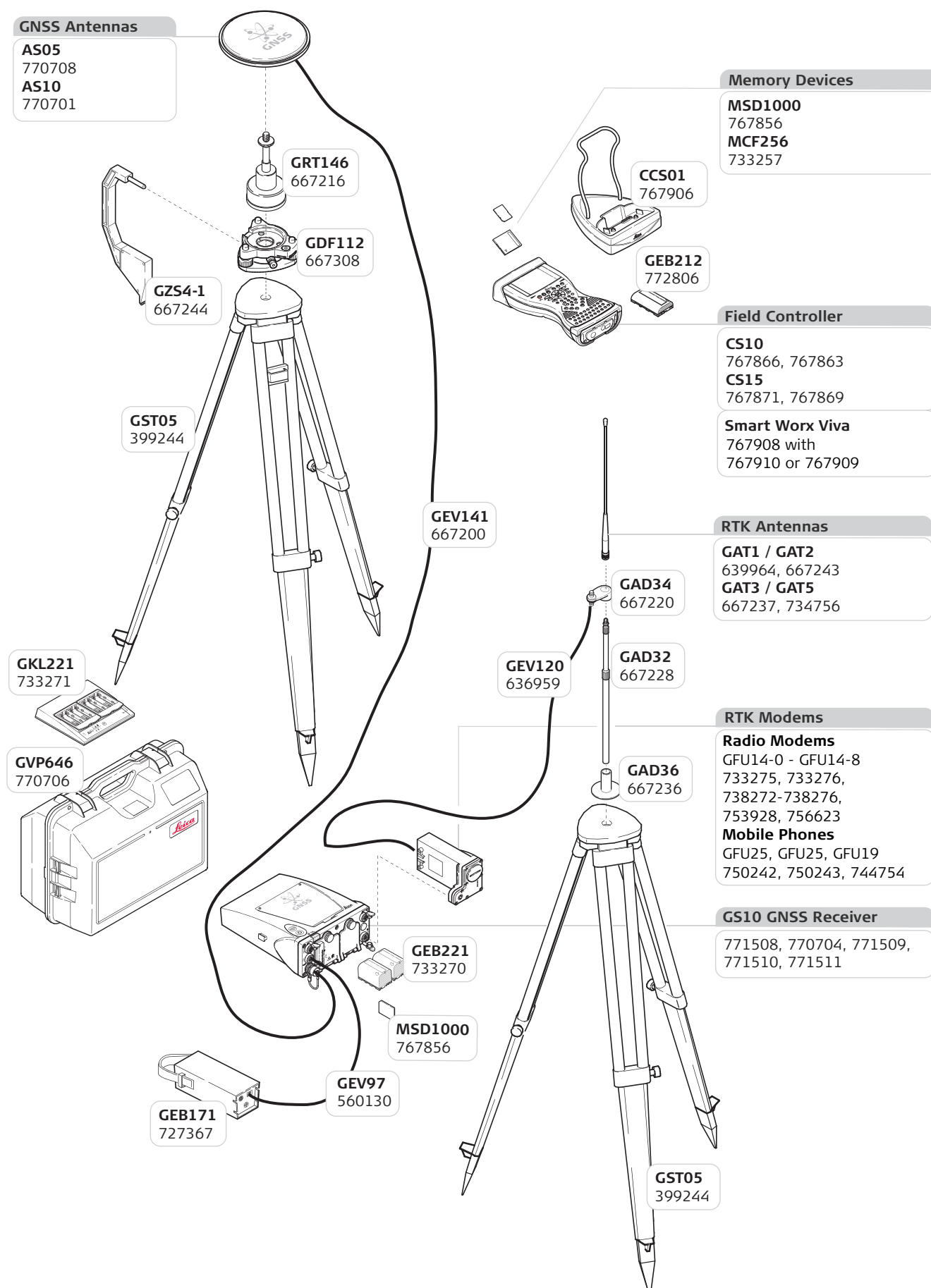


27 GS10 Real Time Reference - Tripod Setup

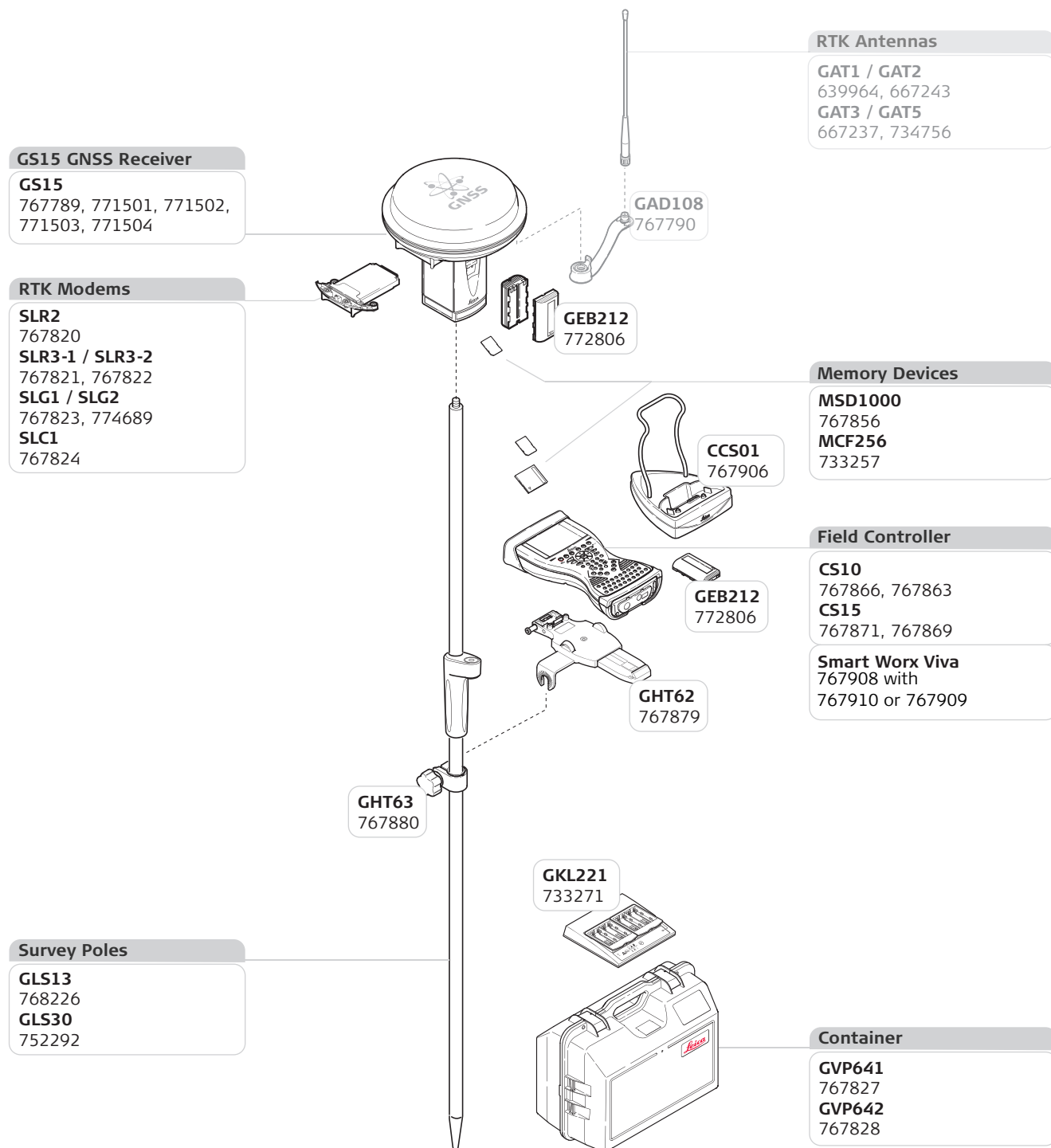
27.1 Using One Tripod



27.2 Using Two Tripods

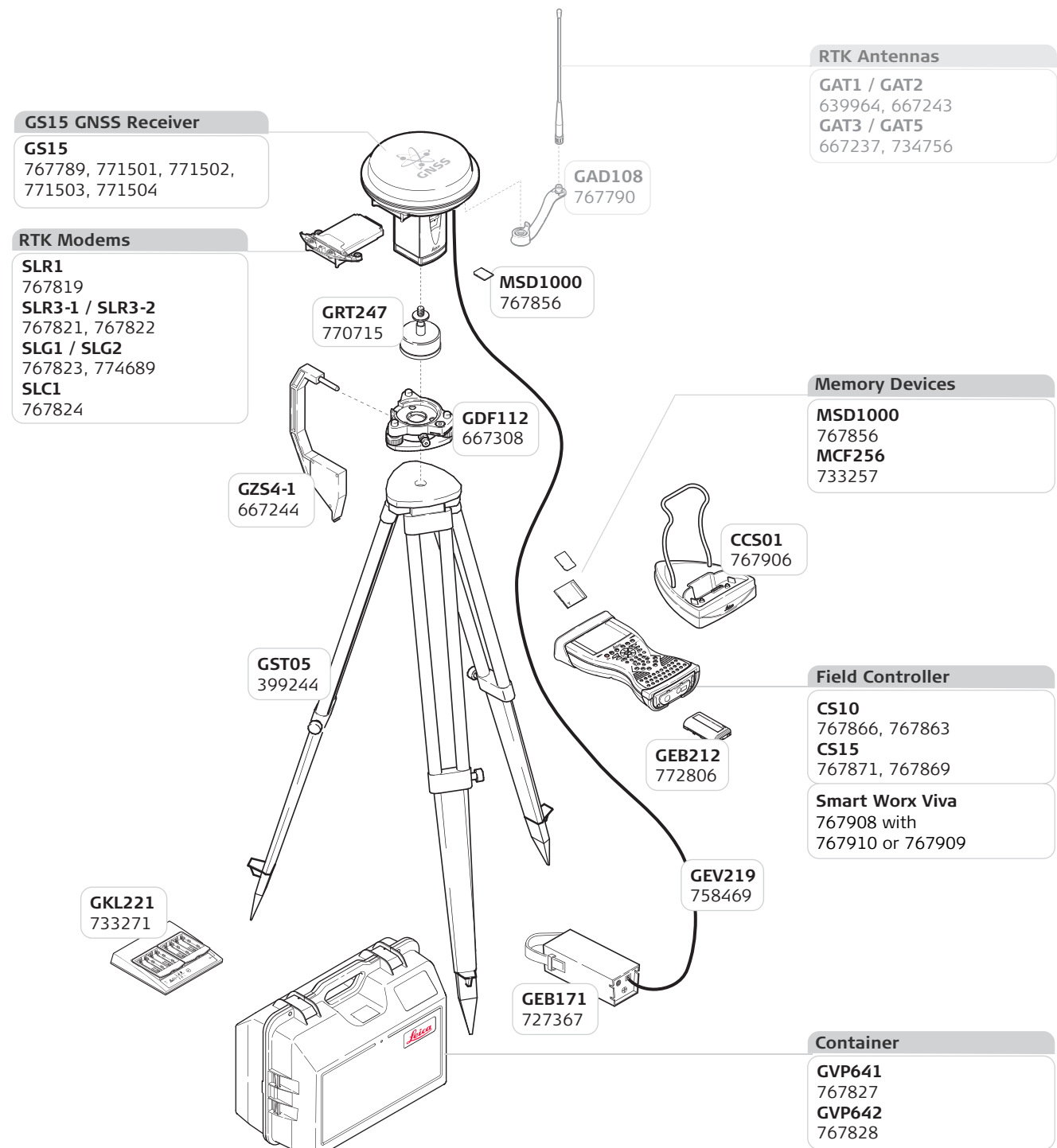


28 GS15 Real Time Rover

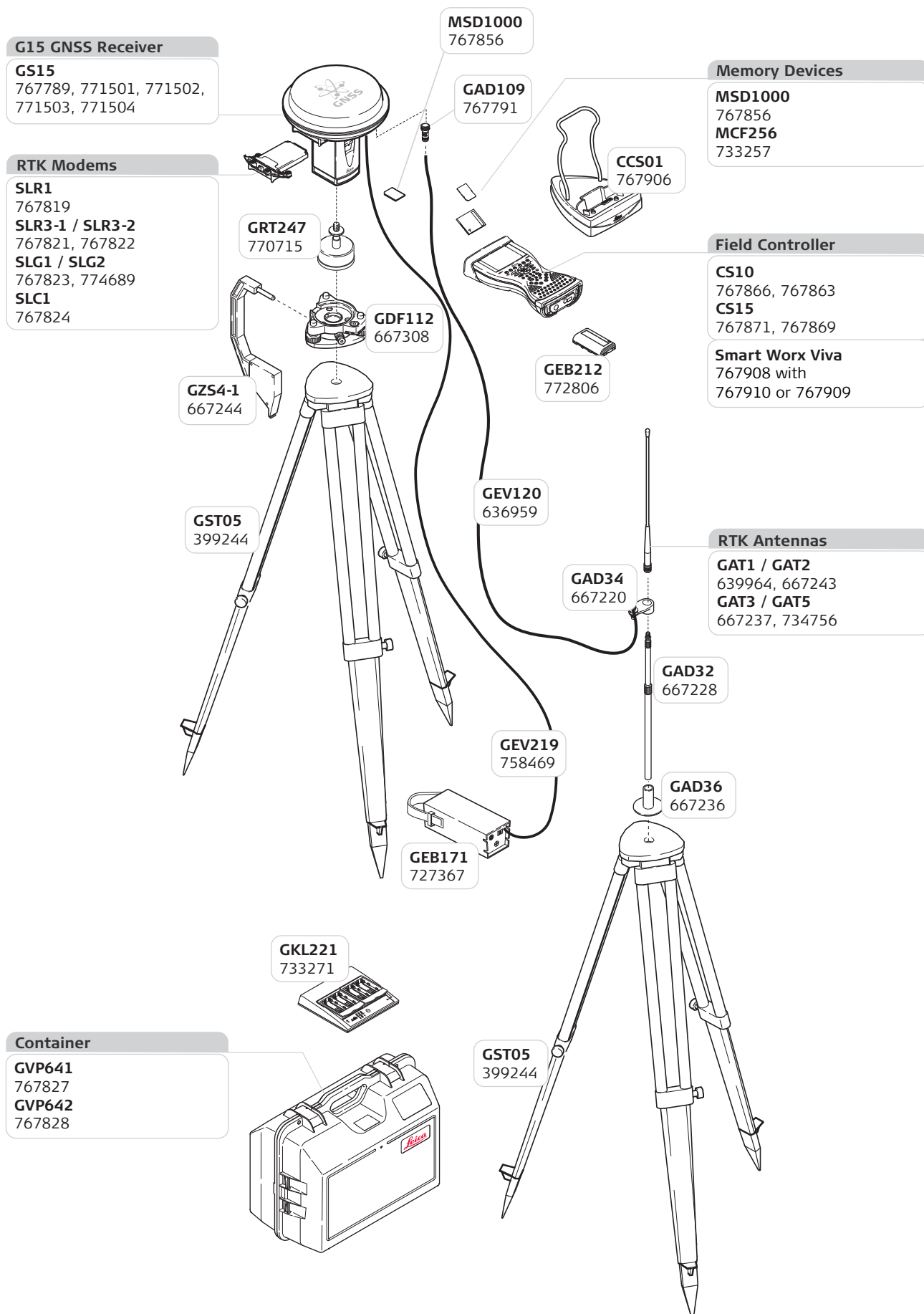


29 GS15 GNSS Real Time Reference - Tripod Setup

29.1 Using One Tripod



29.2 Using Two Tripods



Whether you want to stake-out an object on a construction site or you need accurate measurements of a tunnel or a bridge; whether you want to determine the area of a parcel of land or need the position of a power pole or to capture objects for as-built maps - you need reliable and precise data.

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