

Leica Captivate GNSS Equipment List



- when it has to be **right**

Leica
Geosystems

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GS15 GNSS Receiver

1 GS15 GNSS Receiver



838 040	GS15	Leica GS15 Basic SmartAntenna
838 041	GS15	Leica GS15 Performance SmartAntenna
838 042	GS15	Leica GS15 Unlimited SmartAntenna

	Leica GS15 Basic	Leica GS15 Performance	Leica GS15 Unlimited
Supported GNSS Systems			
Multi-frequency (L2, L5, L-band)	○	●	●
GLONASS	○	○	●
Galileo	○	○	●
BeiDou	○	○	●
RTK performance			
DGPS	○	●	●
RTK unlimited	○	●	●
Network RTK	○	●	●
SmartLink fill	○	○	●
SmartLink	○	○	○
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

2 Additional GS15 Receiver Options

GNSS software options		
843 510	LOP53	Multi-frequency option, enables L2, L5 and L-band tracking on a GS10, GS15, GS16 or GS25 receiver.
843 513	LOP54	GLONASS option, enables GLONASS tracking on a GS10, GS15, GS16 or GS25 receiver.
843 514	LOP55	Galileo option, enables Galileo tracking on GS10, GS15, GS16 or GS25 receiver.
843 515	LOP56	BeiDou option, enables BeiDou tracking on GS10, GS15, GS16 or GS25 receiver.
Position rate and data recording options		
767 808	LOP5	20Hz option, enables to compute positions with an update rate up to 20Hz on GS10, GS15, GS16 or GS25 receiver.
767 809	LOP6	Upgrade option from 5Hz to 20Hz. (LOP4 to LOP5)
767 811	LOP8	RINEX option, allows logging of RINEX data on GS10, GS15, GS16 or GS25 receiver.
767 818	LOP15	NMEA out option, enables NMEA to be streamed from GS10, GS15, GS16 or GS25 receivers.

RTK related options

771 497	LOP16	DGPS option for GS10, GS15, GS16 or GS25 receivers, enables the receiver to compute a DGPS position.
767 813	LOP10	Unlimited RTK option, enables RTK positions to be computed from a single base station with no limit of distance.
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, GS15, GS16 or GS25 receivers from RTK unlimited only to RTK unlimited including RTK Network. (LOP10 to LOP12)
5307068		SmartLink fill option, enables SmartLink fill on GS10, GS15, GS16 or GS25 receivers for 1 year.
5306241		SmartLink fill option, enables SmartLink fill on GS10, GS15, GS16 or GS25 receivers for 2 years.
5307067		SmartLink option, enables SmartLink (including SmartLink fill) on GS10, GS15, GS16 or GS25 receivers for 1 year.
5307118		SmartLink option, enables SmartLink (including SmartLink fill) on GS10, GS15, GS16 or GS25 receivers for 2 years.
Other options		
767 816	LOP13	RTK Reference station option, allows a GS10, GS15, GS16 or GS25 receiver to transmit RTK data.

3 RTK Modems




Satellite radio modules

828 006	SLR6	Satellite M3-TR4 403-470 MHz RX/TX radio. RTK receive and transmit UHF radio module to be easily plugged into the GS15 GNSS receiver.
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Radio programming tool kit

6002544		Configuration tool kit for programming Sateline 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 Sateline HPR3 (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 (850/900/1800/1900/2100 MHz) Telit 3.5G 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.
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Satellite High Power radios

789 636	HPR2	Satellite Easy Pro 35W high power radio, 403-473 MHz RX/TX radio. Includes power cable for connecting to 12V battery and programming cable.
844 965	HPR3	Satellite-4Pro 35W high power radio, 403-473 MHz RX/TX radio. Includes power cable for connecting to 12V battery and programming cable.
817 713	GEV275	Data cable to connect Satel HPR radio to GS GNSS receiver.
806 097	GVP712	Container for Satel HPR High Power Radio.

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

Antennas for mobiles phones

782 500	GAT18	Multiband GSM/UMTS Antenna for 850/1900 MHz, for 900/1800 MHz and for 2100 MHz mobile networks.
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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 Smart-Antenna 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 GFU devices.
767 898	GEV233	Radio cable, 0.8m, connects GS15 receiver to 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

733 297	GEV171	1.8m Y-cable to program the Sateline radio modem inside the GFU housing.
639 968	GEV125	Cable for Sateline 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 GEB371 external battery and a Leica GFU radio.
811 818	GEV274	Y-cable for RTK reference setup, connects GS receiver to a power source (SAE plug) and a Satel HPR 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.

Pole with stub

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

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




767 880	GHT63	Clamp arrangement for attaching the GHT62 or GHT66 to all poles (except mini reflector poles).
807 157	GHT66	Pole holder base plate for CS20 field controller.

6.3 QuickStand



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

7 Additional Accessories using the GS15 Receiver in a SmartPole Setup

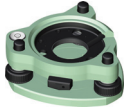
 Please refer to the Leica Viva TPS and Leica Nova TPS Equipment lists for additional accessories using the GS15 receiver in a SmartPole setup.

8 Additional Accessories using the GS15 Receiver in a SmartStation Setup

 Please refer to the Leica Viva TPS and Leica Nova TPS Equipment lists for additional accessories using the GS15 receiver in a SmartStation setup.

9 Additional Accessories for GS15 Tripod Setups - GNSS Base

9.1 Tribrachs



777 508	GDF321	Tribrachs Series 5000, without optical plummet.
777 509	GDF322	Tribrachs Series 5000, with optical plummet.
798 181	GDF112-1	Tribrachs Series 3000, with optical plummet.

9.2 Tripods



399 244	GST05	Wooden tripod with polymer coating, with accessories.
563 630	GST05L	Aluminium tripod, telescopic, with accessories.
667 301	GST120-9	Heavy duty tripod, self-closing, with side clamp screws and carrying strap.

9.3 Carriers



770 715	GRT247	Carrier with 5/8" screw for GS15 SmartAntenna.
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9.4 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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10 Containers for GS15 Receiver



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

833 516	GVP716	Backpack carrying systems for all large TPS and GNSS containers.
833 517	GVP717	Sidebag for container GVP721/722/723/725.
833 518	GVP718	Basic backstrap for container GVP721/722/723/725.
833 519	GVP719	Shoulderstrap for container GVP721/722/723/725.
817 053	GVP721	Hard container for 2 SmartAntennas, CS field controller and accessories for a Base and Rover setup.
817 055	GVP722	Hard container for SmartAntenna, CS field controller and accessories for a SmartPole and SmartStation setup.

GS16 GNSS Receiver

11 GS16 GNSS Receiver



843 496	GS16	3.75G Basic SmartAntenna
838 033	GS16	3.75G Performance SmartAntenna
838 037	GS16	3.75G Unlimited SmartAntenna
843 497	GS16	3.75G & UHF Basic SmartAntenna
838 034	GS16	3.75G & UHF Performance SmartAntenna
838 035	GS16	3.75G & UHF Performance SmartAntenna (NAFTA)
838 036	GS16	3.75G & UHF Performance SmartAntenna (JP)
838 039	GS16	3.75G & UHF Unlimited SmartAntenna

	Leica GS16 Basic	Leica GS16 Performance	Leica GS16 Unlimited
Supported GNSS Systems			
Multi-frequency (L2, L5, L-band)	○	●	●
GLONASS	○	○	●
Galileo	○	○	●
BeiDou	○	○	●
RTK performance			
DGPS	○	●	●
RTK unlimited	○	●	●
Network RTK	○	●	●
SmartLink fill	○	○	●
SmartLink	○	○	○
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

12 Additional GS16 Receiver Options

GNSS software options		
843 510	LOP53	Multi-frequency option, enables L2, L5 and L-band tracking on a GS10, GS15, GS16 or GS25 receiver.
843 513	LOP54	GLONASS option, enables GLONASS tracking on a GS10, GS15, GS16 or GS25 receiver.
843 514	LOP55	Galileo option, enables Galileo tracking on GS10, GS15, GS16 or GS25 receiver.
843 515	LOP56	BeiDou option, enables BeiDou tracking on GS10, GS15, GS16 or GS25 receiver.
Position rate and data recording options		
767 808	LOP5	20Hz option, enables to compute positions with an update rate up to 20Hz on GS10, GS15, GS16 or GS25 receiver.
767 811	LOP8	RINEX option, allows logging of RINEX data on GS10, GS15, GS16 or GS25 receiver.
767 818	LOP15	NMEA out option, enables NMEA to be streamed from GS10, GS15, GS16 or GS25 receivers.
RTK related options		
771 497	LOP16	DGPS option for GS10, GS15, GS16 or GS25 receivers, enables the receiver to compute a DGPS position.
767 813	LOP10	Unlimited RTK option, enables RTK positions to be computed from a single base station with no limit of distance.
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, GS15, GS16 or GS25 receivers from RTK unlimited only to RTK unlimited including RTK Network. (LOP10 to LOP12)
5307068		SmartLink fill option, enables SmartLink fill on GS10, GS15, GS16 or GS25 receivers for 1 year.
5306241		SmartLink fill option, enables SmartLink fill on GS10, GS15, GS16 or GS25 receivers for 2 years.
5307067		SmartLink option, enables SmartLink (including SmartLink fill) on GS10, GS15, GS16 or GS25 receivers for 1 year.
5307118		SmartLink option, enables SmartLink (including SmartLink fill) on GS10, GS15, GS16 or GS25 receivers for 2 years.
Other options		
767 816	LOP13	RTK Reference station option, allows a GS10, GS15, GS16 or GS25 receiver to transmit RTK data.

13 RTK Modems

The GS16 3.75G models are equipped with an internal modem and integrated antenna for RTK Rover and RTK Base usage. For UHF RTK Rover or Base usage external radio modems can be connected.

The GS16 UHF models are equipped with internal modem and internal UHF radio for RTK Rover and RTK Base usage. The UHF modem requires an external RTK antenna.

13.1 Satellite Radio Modem



Satellite modem		
828 005	GFU30	Satellite M3-TR4 403-470 MHz RX/TX radio in GFU housing. Transceiver UHF radio module. User manual and CE Declaration of Conformity included.
Cables for Satellite modem		
733 297	GEV171	1.8m Y-cable to program the Satellite radio modem inside the GFU housing.

13.2 Sateline High Power Radio



789 636	HPR2	Sateline Easy Pro 35W high power radio, 403-473 MHz RX/TX radio. Includes power cable for connecting to 12V battery and programming cable.
844 965	HPR3	Sateline-4Pro 35W high power radio, 403-473 MHz RX/TX radio. Includes power cable for connecting to 12V battery and programming cable.
799 776	GEV266	Data cable to connect Satel HPR radio to GS14/GS16 GNSS receiver.
806 097	GVP712	Container for Satel HPR High Power Radio.

14 External RTK Antennas

14.1 External RTK Antennas



RTK antenna arm

767 790	GAD108	Arm to mount external UHF antenna to GS14/GS16 SmartAntenna.
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Gainflex radio antennas

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

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



Adapter

767 791	GAD109	Transition adapter from external UHF antenna connector of a GS14/GS16 SmartAntenna to standard TNC connector. Allows to connect an external UHF antenna directly or via gainflex cable.
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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.

15 Accessories for Using External Radios with GS16 Receiver



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

733 297	GEV171	1.8m Y-cable to program the Sateline radio modem inside the GFU housing.
796 492	GEV264	1.8m Y-cable for RTK reference setup, connects GS14/GS16 receiver to a GEB371 external battery and a Leica GFU radio.
811 818	GEV274	Y-cable for RTK reference setup, connects GS receiver to a power source (SAE plug) and a Satel HPR radio.

16 Additional Accessories for GS16 Pole Setups - GNSS Rover


16.1 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.

Pole with stub

 Requires GAD31 screw to stub adapter for GS16 receiver to be mounted on these poles.

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.

16.2 Holder and Clamp for Poles




767 880	GHT63	Clamp arrangement for attaching the GHT62 or GHT66 to all poles (except mini reflector poles).
807 157	GHT66	Pole holder base plate for CS20 field controller.

16.3 QuickStand




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

17 Additional Accessories using the GS16 Receiver in a SmartPole Setup

 Please refer to the Leica Viva TPS and Leica Nova TPS Equipment lists for additional accessories using the GS16 receiver in a SmartPole setup.

18 Additional Accessories using the GS16 Receiver in a SmartStation Setup

 Please refer to the Leica Viva TPS and Leica Nova TPS Equipment lists for additional accessories using the GS16 receiver in a SmartStation setup.

19 Additional Accessories for GS16 Tripod Setups - GNSS Base

19.1 Tribachs



777 508	GDF321	Tribachs Series 5000, without optical plummet.
777 509	GDF322	Tribachs Series 5000, with optical plummet.
798 181	GDF112-1	Tribachs Series 3000, with optical plummet.

19.2 Tripods



399 244	GST05	Wooden tripod with polymer coating, with accessories.
563 630	GST05L	Aluminium tripod, telescopic, with accessories.
667 301	GST120-9	Heavy duty tripod, self-closing, with side clamp screws and carrying strap.

19.3 Carriers



Carrier with 5/8" screw		
667 216	GRT146	Carrier with 5/8" screw, GNSS antenna screws on directly.
Carriers with stub		
667 313	GRT144	Carrier with stub.
667 217	GAD31	Screw-to-stub adapter for fitting GPS antenna on carriers with stub and poles with stub.

19.4 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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20 Containers for GS16 Receiver



833 516	GVP716	Backpack carrying systems for all large TPS and GNSS containers.
833 517	GVP717	Sidebag for container GVP721/722/723/725.
833 518	GVP718	Basic backstrap for container GVP721/722/723/725.
833 519	GVP719	Shoulderstrap for container GVP721/722/723/725.
817 052	GVP720	Hard container for SmartAntenna, CS field controller and accessories for a Rover setup.
817 053	GVP721	Hard container for 2 SmartAntennas, CS field controller and accessories for a Base and Rover setup.
817 055	GVP722	Hard container for SmartAntenna, CS field controller and accessories for a SmartPole and SmartStation setup.

GS10 GNSS Receiver

21 GS10 GNSS Receiver



838 029	GS10	Leica GS10 Basic receiver
838 030	GS10	Leica GS10 Performance receiver
838 032	GS10	Leica GS10 Unlimited receiver

	Leica GS10 Basic	Leica GS10 Performance	Leica GS10 Unlimited
Supported GNSS Systems			
Multi-frequency (L2, L5, L-band)	○	●	●
GLONASS	○	○	●
Galileo	○	○	●
BeiDou	○	○	●
RTK performance			
DGPS	○	●	●
RTK unlimited	○	●	●
Network RTK	○	●	●
SmartLink fill	○	○	●
SmartLink	○	○	○
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

GS25 GNSS Receiver

22 GS25 GNSS Receiver



843 494	GS25	Leica GS25 Basic receiver
843 495	GS25	Leica GS25 Performance receiver
838 043	GS25	Leica GS25 Unlimited receiver

	Leica GS25 Basic	Leica GS25 Performance	Leica GS25 Unlimited
Supported GNSS Systems			
Multi-frequency (L2, L5, L-band)	○	●	●
GLONASS	○	○	●
Galileo	○	○	●
BeiDou	○	○	●
RTK performance			
DGPS	○	●	●
RTK unlimited	○	●	●
Network RTK	○	●	●
SmartLink fill	○	○	●
SmartLink	○	○	○
Position update & data recording			
5 Hz positioning	●	●	●
20 Hz positioning	○	●	●
Raw data logging	●	●	●
RINEX logging	○	○	●
NMEA out	○	○	●
Additional features			
RTK Reference Station functionality	○	●	●
Event & PPS Output ports	●	●	●


● Standard
 ○ Optional

23 Additional GS10/GS25 Receiver Options

GNSS software options		
843 510	LOP53	Multi-frequency option, enables L2, L5 and L-band tracking on a GS10, GS15, GS16 or GS25 receiver.
843 513	LOP54	GLONASS option, enables GLONASS tracking on a GS10, GS15, GS16 or GS25 receiver.
843 514	LOP55	Galileo option, enables Galileo tracking on GS10, GS15, GS16 or GS25 receiver.
843 515	LOP56	BeiDou option, enables BeiDou tracking on GS10, GS15, GS16 or GS25 receiver.
Position rate and data recording options		
767 808	LOP5	20Hz option, enables to compute positions with an update rate up to 20Hz on GS10, GS15, GS16 or GS25 receiver.
767 809	LOP6	Upgrade option from 5Hz to 20Hz. (LOP4 to LOP5)
767 811	LOP8	RINEX option, allows logging of RINEX data on GS10, GS15, GS16 or GS25 receiver.
767 818	LOP15	NMEA out option, enables NMEA to be streamed from GS10, GS15, GS16 or GS25 receivers.

RTK related options		
771 497	LOP16	DGPS option for GS10, GS15, GS16 or GS25 receivers, enables the receiver to compute a DGPS position.
767 813	LOP10	Unlimited RTK option, enables RTK positions to be computed from a single base station with no limit of distance.
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, GS15, GS16 or GS25 receivers from RTK unlimited only to RTK unlimited including RTK Network. (LOP10 to LOP12)
5307068		SmartLink fill option, enables SmartLink fill on GS10, GS15, GS16 or GS25 receivers for 1 year.
5306241		SmartLink fill option, enables SmartLink fill on GS10, GS15, GS16 or GS25 receivers for 2 years.
5307067		SmartLink option, enables SmartLink (including SmartLink fill) on GS10, GS15, GS16 or GS25 receivers for 1 year.
5307118		SmartLink option, enables SmartLink (including SmartLink fill) on GS10, GS15, GS16 or GS25 receivers for 2 years.
Other options		
767 816	LOP13	RTK Reference station option, allows a GS10, GS15 or GS25 receiver to transmit RTK data.

24 GNSS Antennas

 Select the antenna for GS10/GS25 receiver. Choke ring antennas are only required for special applications such as when using a GS10/GS25 receiver as a permanent reference station receiver.

24.1 GNSS Single and Triple Frequency Antennas



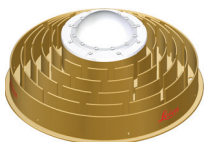
770 708	AS05	GPS/GLONASS single frequency antenna.
770 701	AS10	GPS/GLONASS/Galileo/BeiDou triple frequency antenna, includes L-Band signals.

24.2 Field Base GNSS Antennas



773 758	AR10	GPS/GLONASS/Galileo/BeiDou triple frequency reference station antenna, includes L-Band signals. With integrated radome.
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24.3 Choke Ring Antennas



794 207	AR20	GNSS choke ring antenna for GPS/GLONASS/Galileo/BeiDou/QZSS receivers. Includes Galileo E6 and L-Band signals. Planar structure element.
794 208	GVP705	Weather protection radome for AR20 antenna.
765 733	AR25	GNSS choke ring antenna for GPS/GLONASS/Galileo/BeiDou receivers. Includes Galileo E6 and L-Band signals. Dorne-Margolin antenna element.
765 734	GVP653	Weather protection radome for AR25 antenna.

25 GNSS Antenna Cables for GS10/GS25 Receiver

25.1 GNSS Antenna Cables for GS10/GS25 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.

25.2 GNSS Antenna Cables for GS10/GS25 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.

25.3 PPS/Event Cables for GS25



667 744	GEV150	PPS output cable for GS25 (port PPS) with BNC connector.
403 448	GEV42	Event input cable for GS25 (port E1) with BNC connector.
789 061	GEV262	Event input cable for GS25 (port E2) with BNC connector.

26 RTK Modems

26.1 Satellite Radio Modems for GS10 Receiver



Satellite modems

828 005	GFU30	Satellite M3-TR4 403-470 MHz RX/TX radio in GFU housing. Transceiver UHF radio module. User manual and CE Declaration of Conformity included.
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Cables for Satellite modems

733 297	GEV171	1.8m Y-cable to program the Satellite radio modem inside the GFU27 housing.
639 968	GEV125	Cable for Satellite radios without GFU housing to be connected to GS10/GS15.

26.2 Satellite Radio Modems for GS25 Receiver



Satellite modems

828 007	SLR6-1	Satellite M3-TR4 403-470 MHz RX/TX radio for GS25. Transceiver UHF radio module. User manual and CE Declaration of Conformity included.
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Cables for Satellite modems

639 968	GEV125	Cable for Satellite radios without GFU housing to be connected to GS10/GS15/GS25.
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26.3 Satellite High Power Radios



789 636	HPR2	Satellite Easy Pro 35W high power radio, 403-473 MHz RX/TX radio. Includes power cable for connecting to 12V battery and programming cable.
844 965	HPR3	Satellite-4Pro 35W high power radio, 403-473 MHz RX/TX radio. Includes power cable for connecting to 12V battery and programming cable.
817 713	GEV275	Data cable to connect Satel HPR radio to GS GNSS receiver.
806 097	GVP712	Container for Satel HPR High Power Radio.

26.4 Mobile Phones for GS10



767 861	GFU29	GFU29, 5 band UMTS module for global use in GFU housing. Compatible with GSM, GPRS, EDGE, HSDPA networks.
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26.5 Mobile Phones for GS25



776 236	SLG1-2	SLG1-2, 5-Band (850/900/1800/1900/2100 MHz) Telit 3G GSM/GPRS/UMTS module. Provides full flexibility due to 5-band technology, supports all GSM, GPRS, EDGE and UMTS network providers.
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27 RTK Antennas

27.1 External RTK Antennas



Gainflex radio antennas

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

Antennas for mobile phones

782 500	GAT18	Multiband GSM/UMTS Antenna for 850/1900 MHz, for 900/1800 MHz and for 2100 MHz mobile networks
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27.2 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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27.3 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.

28 Additional Accessories for GS10/GS25 Pole Setups - GNSS Rover


28.1 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 AS10 antenna 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.

28.2 Minipack Setup



Backpack

770 707	GVP647	Minipack, holds GS10 GNSS Receiver.
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Holders

767 880	GHT63	Clamp arrangement for attaching the GHT62 or GHT66 to all poles (except mini reflector poles).
807 157	GHT66	Pole holder base plate for CS20 field controller.

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.



28.3 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 CS15 field controller.
767 880	GHT63	Clamp arrangement for attaching the GHT62 or GHT66 to all poles (except mini reflector poles).
807 157	GHT66	Pole holder base plate for CS20 field controller.

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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28.4 QuickStand

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



29 Additional Accessories for GS10/GS25 Tripod Setups - GNSS Base

29.1 Tribrachs



777 508	GDF321	Tribrachs Series 5000, without optical plummet.
777 509	GDF322	Tribrachs Series 5000, with optical plummet.
798 181	GDF112-1	Tribrachs Series 3000, with optical plummet.

29.2 Tripods



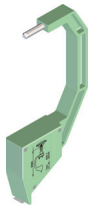
667 301	GST120-9	Heavy duty tripod, self-closing, with side clamp screws and carrying strap.
399 244	GST05	Wooden tripod with polymer coating, with accessories.
563 630	GST05L	Aluminium tripod, telescopic, with accessories.

29.3 Carriers



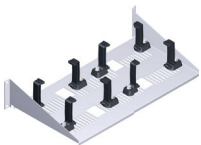
Carrier with 5/8" screw		
667 216	GRT146	Carrier with 5/8" screw, GNSS antenna screws on directly.
Carriers with stub		
667 313	GRT144	Carrier with stub.
667 217	GAD31	Screw-to-stub adapter for fitting GPS antenna on carriers with stub and poles with stub.

29.4 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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30 Mounting Kits for GS25



Mounting kits for GS25 receiver		
774 439	GEV249	Rack Mount Kit for GS25 receiver. For fitting the receiver to standard IT rack (requires 2 U in the rack).

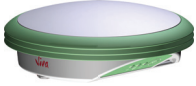
31 Container for GS10/GS25 Receiver



 All GS10/GS25 need to be ordered with at least one container.		
833 516	GVP716	Backpack carrying systems for all large TPS and GNSS containers.
833 517	GVP717	Sidebag for container GVP721/722/723/725.
833 518	GVP718	Basic backstrap for container GVP721/722/723/725.
833 519	GVP719	Shoulderstrap for container GVP721/722/723/725.
817 056	GVP723	Hard container for GNSS Receiver, CS field controller and accessories for a Base setup.

GS08plus GNSS Receiver

32 GS08plus GNSS Receiver




798 257	GS08plus	GS08plus GPS/GLONASS Dual Frequency SmartAntenna for the CS Field Controller.
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33 Additional GS08plus Receiver Software Options

GNSS Software options (to be loaded on GS08plus)

791 827	LOP27	GS08plus GLONASS option.
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 The following options are license keys to be set on CS field controller.

Position update and data recording options

842 742	GSW943	CS20/GS08plus 5Hz option, enables 0.2sec (5Hz) position update rate.
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842 745	GSW944	CS20/GS08plus MDB raw data logging option.
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842 746	GSW945	CS20/GS08plus RINEX raw data logging option.
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RTK related options

842 743	GSW946	CS20/GS08plus RTK Rover option, includes unlimited baseline and reference network access.
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34 Additional Accessories for GS08plus Pole Setups - GNSS Rover

34.1 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.
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752 292	GLS30	Telescopic carbon GNSS pole with 5/8" screw. Snap locks at 1.80m and 2.00m. Includes circular bubble.
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Pole with stub

 Requires GAD31 screw to stub adapter for GS08plus receiver to be mounted on these poles.

766 359	GLS31	Telescopic carbon Total Station reflector pole with stub. Snap locks at 2.00m for GNSS antennas.
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667 217	GAD31	Screw to stub adapter.
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34.2 Holder and Clamp for Poles



767 880	GHT63	Clamp arrangement for attaching the GHT62 or GHT66 to all poles (except mini reflector poles).
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807 157	GHT66	Pole holder base plate for CS20 field controller.
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34.3 QuickStand



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

35 Containers for GS08plus Receiver



833 516	GVP716	Backpack carrying systems for all large TPS and GNSS containers.
833 517	GVP717	Sidebag for container GVP721/722/723/725.
833 518	GVP718	Basic backstrap for container GVP721/722/723/725.
833 519	GVP719	Shoulderstrap for container GVP721/722/723/725.
817 052	GVP720	Hard container for SmartAntenna, CS field controller and accessories for a Rover setup.
817 053	GVP721	Hard container for 2 SmartAntennas, CS field controller and accessories for a Base and Rover setup.
817 055	GVP722	Hard container for SmartAntenna, CS field controller and accessories for a SmartPole and SmartStation setup.

Additional Accessories for GS Receivers

36 Power Supply

36.1 Internal Batteries for GS14 and GS15 Receiver



772 806	GEB212	Lithium-Ion battery, 7.4V/2.6Ah, rechargeable. To be used with GS14 or GS15 receiver.
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36.2 Internal Batteries for GS10 Receiver



733 270	GEB221	Lithium-Ion battery, 7.4V/4.4Ah, rechargeable. To be used with GS10 receiver.
793 973	GEB222	Lithium-Ion battery, 7.4V/6Ah, rechargeable. To be used with GS10 receiver.

36.3 Internal Batteries for GS25 Receiver



793 975	GEB242	Lithium-Ion battery, 14.8V/5.8Ah, rechargeable, for GS25 receiver.
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36.4 External Power Supply



Battery for GS10/GS15

818 916	GEB371	External universal battery, Li-Ion, 13 V, 250 Wh, rechargeable.
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Power cables for GS10/GS15

758 469	GEV219	Power cable, 1.8m, connects GS10/GS15 receiver to external GEB371 battery.
439 038	GEV71	4m car battery cable, connects all battery cables to 12V car battery.

Power cables for GS10

560 130	GEV97	Power cable, 1.8m, connects GS10 receiver to external GEB371 battery.
733 298	GEV172	Power cable, 2.8m, connects GS10 receiver to 2 external GEB371 batteries.

Power supply unit

807 696	GEV270	Power supply unit for TPS/GPS/DNA, for indoor use only. Input 90-264 VAC to output 13.2VDC 40W, with Lemo connection for power cables.
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36.5 Battery Chargers



799 185	GKL311	Single-bay Charger Professional 3000. Charger for one Li-Ion battery (GEB211, GEB212, GEB221, GEB222, GEB241, GEB242 and GEB331), including AC/DC adaptor and cigarette lighter cable.
799 187	GKL341	Multi-bay Charger Professional 5000. Charges up to 4 batteries (GEB211, GEB212, GEB221, GEB222, GEB241, GEB242 and GEB331), including power cable.
734 389	GDC221	Car adapter for the GKL341 charger. Allows the use of the GKL341 with a cigarette lighter; 12V/24V DC/DC converter. Can also be used to power CS15 field controller directly from a cigarette lighter.
774 437	GEV242	Charger for GEB371 external battery.

37 Data Storage and Data Transfer

37.1 Memory Devices for GS10, GS15 and GS25 Receiver



767 856	MSD1000	SD memory card 1 GB for GS10/GS15 receiver and CS15/CS20 field controller, industrial grade.
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37.2 Memory Devices for GS14 Receiver



795 993	MMSD01	microSD card 1 GB for GS16 receiver, includes SD card adapter.
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37.3 Card Reader



767 895	MCR7	Card reader for SD/CF cards.
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37.4 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 CS field controller to PC. (Lemo to 9pin RS232)
806 094	GEV268	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.
806 095	GEV269	Serial data transfer cable, converter cable USB to serial (Lemo to USB connector), 2.0m, connects GS10/GS14/GS15 receiver (port 1) or CS field controller to PC. PC driver included on CD.



USB cable

767 899	GEV234	USB cable, 1.65m, connects GS10/GS14/GS15 receiver or CS field controller to USB port of a PC or connects GS10/GS15 receiver to CS field controller. (Lemo to USB)
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38 Cables to connect GS10/GS15/GS16/GS25 to CS Field Controller



In cases where high data speed communication is required between GS10/GS14/GS15 and CS field controller, cables should be used instead of a Bluetooth connection.



USB cables

767 899	GEV234	USB cable, 1.65m, connects GS10/GS14/GS15 receiver or CS field controller to USB port of a PC or connects GS10/GS15 receiver to CS field controller. (Lemo to USB)
772 807	GEV237	USB cable, 1.65m, connects GS10/GS14/GS15 receiver to CS field controller. (Lemo to Lemo)

39 Radio Accessories

806 098	GST74	Antenna mast including tripod, extendable up to 5m.
806 096	GVP711	Soft bag for car battery, including 2 cables with SAE adapter.
806 101	GAD117	Adapter antenna to mast, required for GAT23/GAT24 UHF antenna, includes 5m antenna cable with TNC connector.
806 099	GAT23	UHF radio antenna (frequency range 430-450 Mhz, 5.5dBi gain).
806 100	GAT24	UHF radio antenna (frequency range 450-470 Mhz, 5.5dBi gain).
811 818	GEV274	Y-cable for RTK reference setup, connects GS receiver to a power source (SAE plug) and a Satel HPR2 radio.
817 713	GEV275	Data cable to connect Satel HPR radio to GS GNSS receiver.
806 097	GVP712	Container for Satel HPR High Power Radio.

Field Controller

40 CS20 Field Controller

40.1 CS20 Field Controller



823 164	CS20	CS20 Field Controller Ruggedized WinEC7 field controller with 5" WVGA touch display, 2 GB eMMC Flash Memory, 1 GB SDRAM, SD card slot, 5MP camera and LED flash. Includes internal Bluetooth/WLAN module, QWERTY keypad, stylus.
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823 165	CS20 3.75G	CS20 3.75G Field Controller Ruggedized WinEC7 field controller with 5" WVGA touch display, 2 GB eMMC Flash Memory, 1 GB SDRAM, SD card slot, 5MP camera and LED flash. Includes internal Bluetooth/WLAN module, 3.75G GSM/UMTS module, internal TS communication module, QWERTY keypad, stylus.
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823 169	CS20 3.75G Disto	CS20 3.75G Disto Field Controller Ruggedized WinEC7 field controller with 5" WVGA touch display, 2 GB eMMC Flash Memory, 1 GB SDRAM, SD card slot, 5MP camera and LED flash. Includes internal Bluetooth/WLAN module, 3.75G GSM/UMTS module, internal TS communication module, integrated Disto-Lasermeter, QWERTY keypad, stylus.
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823 167	CS20 CDMA Disto	CS20 CDMA Disto Field Controller Ruggedized WinEC7 field controller with 5" WVGA touch display, 2 GB eMMC Flash Memory, 1 GB SDRAM, SD card slot, 5MP camera and LED flash. Includes internal Bluetooth/WLAN module, 3.75G GSM/UMTS/CDMA module, internal TS communication module, integrated Disto-Lasermeter, QWERTY keypad, stylus.
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40.2 CTR20 TS Communication Expansion Pack



6010023	CTR20 expansion pack set TS communication expansion pack set including CTR20 module and GAT25 radio antenna.
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Not available in EU countries due to EN 300 328 V.1.8.1.

Recommended only for robotic applications systematically exceeding ranges beyond 400 m.

41 Leica Captivate Software and Apps - CS20 Field Controller

41.1 Leica Captivate Software for CS20 Field Controller

827 698	Leica Captivate - Measure and Stake for CS20.
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41.2 Apps included in Leica Captivate for CS20 Field Controller

The following apps are included in Leica Captivate for CS20 (827 698).

Measure includes:


- Measure
- Code points
- Automatically measure points
- Remote Heights
- Target Offset calculations

Setup includes:

- Get station coordinates from GNSS, from Job or enter manually
- Orientation by known Azimuth
- Orientation by known Backsight
- Orientation & Height transfer to up to 10 target points
- Resection up to 10 target points
- Resection Helmert
- Orientate to object

<p>Stake points includes:</p> <ul style="list-style-type: none"> • Navigate to point using various methods: from and behind instrument, point, base line, arrow, North • Quality control - checking of coordinate differences before storing • Automatically select next closest point • Graphical selection of point from map • Edit heights and offset heights of points • Acoustic beep getting faster when getting closer to point
<p>COGO includes:</p> <ul style="list-style-type: none"> • Inverse • Traverse • Intersections • Angle calculations • Line & arc calculations • Bearing & distance calculations • Shift, Rotate, Scale (manual & matching points) • Triangle calculations
<p>Determine coordinate system:</p> <ul style="list-style-type: none"> • 1 step, 2 step, 3D Transformation • All common projections
<p>Alignment Editor:</p> <ul style="list-style-type: none"> • Horizontal alignments • Vertical alignments • Cross sections • Chainage equations
<p>Control data: Create points and lines</p>
<p>Data import: ASCII, XML, DXF, DTM, alignments</p>
<p>Data export: ASCII, Custom, DXF, XML, Style Sheets, FBK, RW5, RAW and local formats</p>
<p>3rd party total station control:</p> <ul style="list-style-type: none"> • Topcon total station control • Nikon total station control • SOKKIA total station control

41.3 Optional Apps for Leica Captivate for CS20 Field Controller

 The following apps require a valid license key.

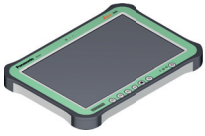
827 701	Area Division
827 702	Stake DTM
827 699	Measure and Stake to Line
827 700	Measure to Plane / Grid
827 704	Check and Stake Road
827 705	Check and Stake Tunnel
827 706	Check and Stake Rail
827 711	Sets of Angles
827 703	Volume Calculation
827 708	Hidden Point
827 709	Traverse
827 712	QuickVolume
839 679	Inspect Surfaces
836 670	Tunnel Profile Generator

41.4 Optional Licences for Leica Captivate for CS20 Field Controller


827 714	Active Assist
827 715	Leica Exchange

42 CS35 Tablet

42.1 CS35 Tablet




827 979	CS35-1	CS35-1 10" Tablet, EU Ruggedized Win8.1 Pro 64-bit tablet computer including: 10" touch-widescreen, 128 GB SSD hard drive, 4 GB SDRAM, WLAN 802.11 b/g/n, 3G integrated mobile broadband module, Bluetooth v4.0, stylus, tether, 1x battery (4.1 Ah), AC/DC adaptor and 5MP camera with flash.
833 131	CS35-2	CS35-2 10" Tablet, US Ruggedized Win8.1 Pro 64-bit tablet computer including: 10" touch-widescreen, 128 GB SSD hard drive, 4 GB SDRAM, WLAN 802.11 b/g/n, 4G integrated mobile broadband module, Bluetooth v4.0, stylus, tether, 1x battery (4.1 Ah), AC/DC adaptor and 5MP camera with flash.
833 132	CS35-3	CS35-3 10" Tablet, CA Ruggedized Win8.1 Pro 64-bit tablet computer including: 10" touch-widescreen, 128 GB SSD hard drive, 4 GB SDRAM, WLAN 802.11 b/g/n, 4G integrated mobile broadband module, Bluetooth v4.0, stylus, tether, 1x battery (4.1 Ah), AC/DC adaptor and 5MP camera with flash.
833 133	CS35-11	CS35-11 10" Tablet, AUS Ruggedized Win8.1 Pro 64-bit tablet computer including: 10" touch-widescreen, 128 GB SSD hard drive, 4 GB SDRAM, WLAN 802.11 b/g/n, 4G integrated mobile broadband module, Bluetooth v4.0, stylus, tether, 1x battery (4.1 Ah), AC/DC adaptor and 5MP camera with flash.
842 501	CS35-12	CS35-12 10" Tablet, JP Ruggedized Win8.1 Pro 64-bit tablet computer including: 10" touch-widescreen, 128 GB SSD hard drive, 4 GB SDRAM, WLAN 802.11 b/g/n, 4G integrated mobile broadband module, Bluetooth v4.0, stylus, tether, 1x battery (4.1 Ah), AC/DC adaptor and 5MP camera with flash.
842 502	CS35-13	CS35-13 10" Tablet, RU Ruggedized Win8.1 Pro 64-bit tablet computer including: 10" touch-widescreen, 128 GB SSD hard drive, 4 GB SDRAM, WLAN 802.11 b/g/n, 4G integrated mobile broadband module, Bluetooth v4.0, stylus, tether, 1x battery (4.1 Ah), AC/DC adaptor and 5MP camera with flash.

 All CS35 Tablets are delivered with stylus, tether, one GEB235 Lithium-Ion battery (10.8 V/4.1 Ah, rechargeable) and country specific AC/DC adaptor.

42.2 CTR35 Long-range Bluetooth Device

844 474	CTR35	Long-range Bluetooth device for CS35.
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 Recommended only for robotic applications requiring extended range.

43 Leica Captivate Software and Apps - CS35 Tablet

43.1 Leica Captivate Software for CS35 Tablet

827 719	Leica Captivate - Measure and Stake for CS35.
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43.2 Apps included in Leica Captivate for CS35 Tablet


 The following apps are included in Leica Captivate for CS35 (827 719).

Measure includes:

- Measure
- Code points
- Automatically measure points
- Remote Heights
- Target Offset calculations

<p>Setup includes:</p> <ul style="list-style-type: none"> • Get station coordinates from GNSS, from Job or enter manually • Orientation by known Azimuth • Orientation by known Backsight • Orientation & Height transfer to up to 10 target points • Resection up to 10 target points • Resection Helmert • Orientate to object
<p>Stake points includes:</p> <ul style="list-style-type: none"> • Navigate to point using various methods: from and behind instrument, point, base line, arrow, North • Quality control - checking of coordinate differences before storing • Automatically select next closest point • Graphical selection of point from map • Edit heights and offset heights of points • Acoustic beep getting faster when getting closer to point
<p>COGO includes:</p> <ul style="list-style-type: none"> • Inverse • Traverse • Intersections • Angle calculations • Line & arc calculations • Bearing & distance calculations • Shift, Rotate, Scale (manual & matching points) • Triangle calculations
<p>Determine coordinate system:</p> <ul style="list-style-type: none"> • 1 step, 2 step, 3D Transformation • All common projections
<p>Alignment Editor:</p> <ul style="list-style-type: none"> • Horizontal alignments • Vertical alignments • Cross sections • Chainage equations
<p>Control data: Create points and lines</p>
<p>Data import: ASCII, XML, DXF, DTM, alignments</p>
<p>Data export: ASCII, Custom, DXF, XML, Style Sheets, FBK, RW5, RAW and local formats</p>
<p>3rd party total station control:</p> <ul style="list-style-type: none"> • Topcon total station control • Nikon total station control • SOKKIA total station control

43.3 Optional Applications for Leica Captivate for CS35 Tablet

 The following apps require a valid license key

827 722	Area Division
827 723	Stake DTM
827 720	Measure and Stake to Line
827 721	Measure to Plane / Grid
827 725	Check and Stake Road
827 726	Check and Stake Tunnel
827 727	Check and Stake Rail
827 730	Sets of Angles
827 724	Volume Calculation
827 728	Hidden Point
827 729	Traverse
827 731	QuickVolume
839 681	Inspect Surfaces
836 671	Tunnel Profile Generator

43.4 Optional Licences for Leica Captivate for CS35 Tablet

827 734	Leica Exchange
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Accessories for Field Controller

44 Accessories for CS20 Field Controller

44.1 Internal Batteries



799 190	GEB331	Li-Ion battery, 11.1 V / 2.8 Ah, rechargeable, for CS20.
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44.2 Battery Chargers



799 185	GKL311	Single-bay Charger Professional 3000. Charger for one Li-Ion battery (GEB211, GEB212, GEB221, GEB222, GEB241, GEB242 and GEB331), including AC/DC adaptor and cigarette lighter cable.
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799 187	GKL341	Multi-bay Charger Professional 5000. Charges up to 4 batteries (GEB211, GEB212, GEB221, GEB222, GEB241, GEB242 and GEB331), including power cable.
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734 389	GDC221	Car adapter for the GKL341 charger. Allows the use of the GKL341 with a cigarette lighter; 12V/24V DC/DC converter. Can also be used to power CS15 field controller directly from a cigarette lighter.
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44.3 Memory Devices



767 856	MSD1000	SD memory card 1 GB for Leica Viva TPS and Leica Nova instruments and CS10/CS15 field controller, industrial grade.
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789 139	MSD08	SD memory card 8 GB for Leica Viva TPS and Leica Nova instruments and CS10/CS15 field controller, industrial grade.
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765 199	MS1	USB memory stick, 1 GB, for Leica Viva TPS and Leica Nova instruments and CS10/CS15 field controller, industrial grade.
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44.4 Card Reader & Adapter



767 895	MCR7	Card reader for SD/CF cards.
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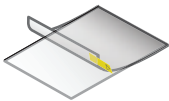
733 258	MCFAD1	CompactFlash PC card adapter.
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44.5 Pen and Screen Protections Foils

Pen



813 914	GDZ71	Pen with tether clip interface for CS20 field controller and TS16/MS60/TS60 instruments.
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813 582	GHT76	Tether to connect GDZ71 Pen to CS20 field controller.
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Screen Protection Foil set

813 781	SPF05	5" WVGA screen protection foils for CS20 field controller and TS16/MS60/TS60 instruments.
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44.6 Additional Power Accessories



822 787	GEV276	Power supply unit for CS20, for indoor use only. Input 100-240 VAC to output 15.0 VDC, 40 W.
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44.7 Pole Accessories



807 157	GHT66	Holder attaching a CS20 with a GHT63 clamp to a pole. GHT63 is not included.
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767 880	GHT63	Clamp arrangement for attaching the GHT66 and GHT78 to all poles.
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44.8 Utility Hook and Hand Strap



Utility hook

807 245	GHT68	Utility hook for CS20 field controller for attaching to belt or tripod.
845 832	GHT70	Clamp arrangement for attaching the GHT66 and GHT78 to all tripods.

Hand strap


807 158	GHT67	Hand strap for CS20 field controller.
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45 Accessories for CS35 Tablet

45.1 Internal Batteries




832 119	GEB235	Lithium-Ion battery, 10.8 V/4.1 Ah, rechargeable, for CS35 Tablet.
832 120	GEB236	Lithium-Ion battery, 10.8 V/8.7 Ah, rechargeable, for CS35 Tablet.

 All CS35 Tablets are delivered with one GEB235 Lithium-Ion battery (10.8 V/4.1 Ah, rechargeable).

45.2 Battery Chargers



832 118	GKL235	Charger for CS35 batteries GEB235 and GEB236. Country specific AC/DC adaptor (GEV280-x) not included.
832 113	GEV280-1	AC/DC adaptor, EU. Power Supply for CS35 Tablet.
8321 14	GEV280-2	AC/DC adaptor, UK. Power Supply for CS35 Tablet.
832 115	GEV280-3	AC/DC adaptor, US. Power Supply for CS35 Tablet.
832 116	GEV280-4	AC/DC adaptor, AUS. Power Supply for CS35 Tablet.
832 117	GEV280-5	AC/DC adaptor, CH. Power Supply for CS35 Tablet.
842 648	GEV280-6	AC/DC adaptor, JP, Power Supply for CS35 Tablet.

 Country specific AC/DC adaptor (GEV280-x) is delivered with CS35 Tablet.

45.3 Pen and Screen Protection Foils




Pen

832 121	GDZ75	Digitiser Pen for CS35 Tablet.
832 122	GHT77	Tether to tie GDZ75 Digitiser Pen to CS35 Tablet.

Screen Protection Foil set

832 126	SPF06	Screen protection foils for CS35 Tablet.
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 All CS35 Tablets are delivered with one GDZ75 Digitiser Pen and a GHT77 Tether.

45.4 Pole Accessories



832 127	GHT78	Tablet holder for attaching a CS35 Tablet with a GHT63 clamp to a pole. GHT63 is not included.
767 880	GHT63	Clamp arrangement for attaching the GHT66 and GHT78 to all poles.

45.5 Hand Strap



833 343	GHT79	Hand strap for CS35 Tablet. Including 4 high corner guards.
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Care Packages

46 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.

Trademarks

47 Trademarks

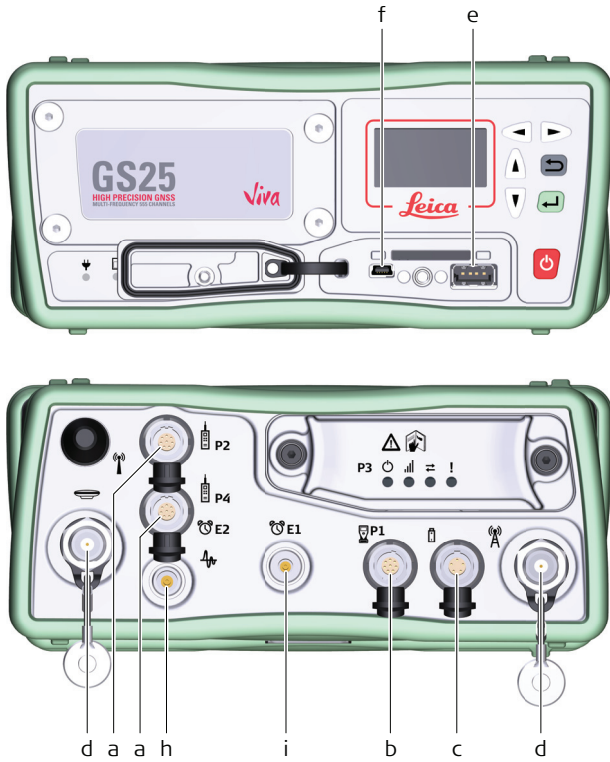
The *Bluetooth*® word mark and logos are owned by Bluetooth SIG, Inc. and any use of such marks by Leica Geosystems AG is under license.

SD and microSD are trademarks of the SD-3C, LLC.

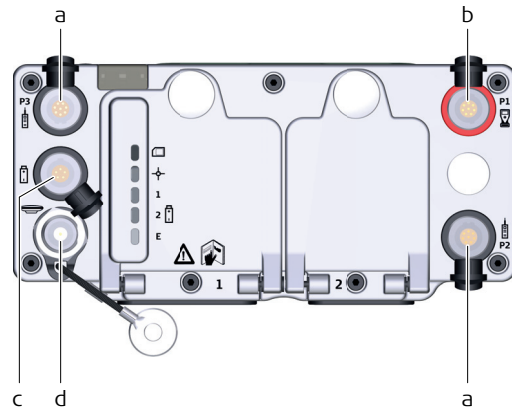
Other trademarks and trade names are those of their respective owners.

System Viva GNSS Cables Overview

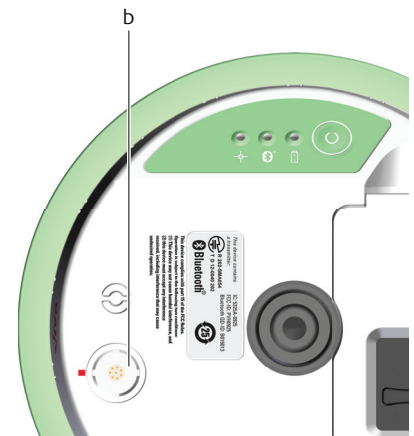
GS25 Receiver



GS10 Receiver



GS08plus Receiver

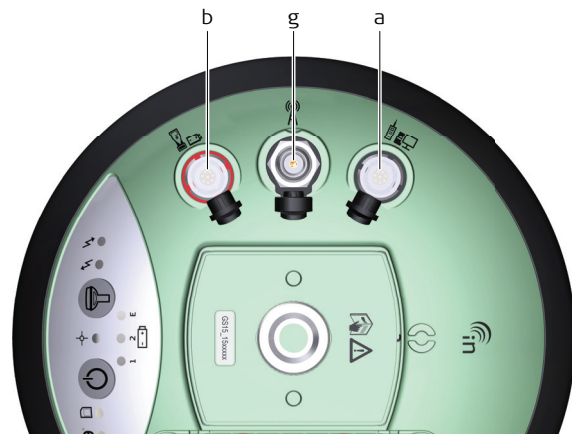


- a) Lemo1, 8pin, 30°
- b) Lemo1, 8pin, 135°
- c) Lemo1, 5pin, 0°
- d) TNC connector
- e) USB type A
- f) Mini USB AB
- g) QN connector
- h) Lemo FFA
- i) H&S QLA connector

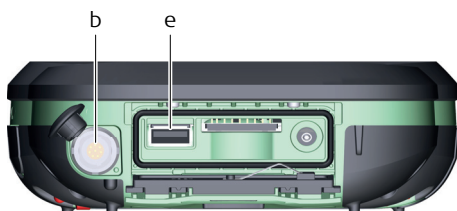
GS16 Receiver



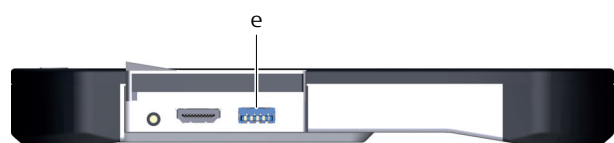
GS15 Receiver



CS20 Controller



CS35 Tablet



Power cables

Art. no	Name	Connector 1	Connector 2	Description
560 130	GEV97	Lemo1, 5pin, 0°	Lemo1, 5pin, 0°	Length 1.8 m Allows GS10 (power port) to be externally powered.
758 469	GEV219	Lemo1, 8pin, 135°	Lemo1, 5pin, 0°	Length 1.8 m Allows GS10/GS14/GS15/GS16 (port 1) to be externally powered.
822 787	GEV276	5.5 mm barrel connector	Mains plug	Length 1.2 m, + 1.5 m Allows CS20 to be externally powered via the power jack. AC/DC mains plug type is country specific.
439 038	GEV71	Lemo1, 5pin, 0° (female)	Crocodile clips	Length 4.0 m Allows powering of any device from car battery.
809 028	GEV272	Lemo, 4pin, 0°	SAE	Length 2.0 m Allows powering of Satel HPR from the GVP711 battery soft bag.
807 696	GEV270	Lemo1, 5pin, 0° (female)	Mains plug	Length 0.8 m + 1.5 m Allows powering of any GS from standard mains socket (country specific).

Y - power cables

Art. no	Name	Connector 1	Connector 2	Connector 3	Description
733 298	GEV172	Lemo1, 5pin, 0°	Lemo1, 5pin, 0°	Lemo1, 5pin, 0°	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, 0°	Length 2.0 m Allows connection between CS20 and GS10/GS14/GS15/GS16 (port 1) while being powered from the GEB371.
796 492	GEV264	Lemo1, 8pin, 135°	Lemo1, 8pin, 30° (female)	Lemo1, 5pin, 0°	Length 1.8 m Allows connection between GS14/GS16, external radio in GFU housing and GEB371 with GS and radio being externally powered.
811 818	GEV274	Lemo1, 8pin, 135°	Lemo1, 8pin, 30°	SAE	Length 2.8 m Allows connection between GS10/GS14/GS15/GS16 (port1), Satel HPR radio with GS being externally powered.

Radio programming cables

Art. no	Name	Connector 1	Connector 2	Connector 3/4	Description
767 803	GEV231	15pin (GS15 slot-in port) (female)	RS232 serial, 9pin	Lemo1, 5pin, 0°	Length 1.8 m Allows an SLR radio device to be externally powered and programmed by a PC.
733 297	GEV171	Lemo1, 8pin, 30° (female)	RS232 serial, 9pin	Lemo1, 5pin, 0°	Length 1.8 m Allows a radio within a GFU device to be externally powered and programmed by a PC.
793 364	GEV261	Lemo1, 8pin, 135°	RS232 serial, 9pin	Lemo1, 5pin, 0° and USB type A	Length 1.8 m Allows a GS14/GS16 radio to be programmed by a PC.
809 029	GEV273	Lemo2, 8pin, 30°	RS232 serial, 9pin		Length 2.0 m Allows a Satel HPR radio to be 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 GFU devices 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 GFU devices to be connected to a GS10 (port 2 and 3), or GS15 (port 2).
639 968	GEV125	Lemo1, 8pin, 30°	15pin, RS232 serial	Length 1.8 m Allows a Sateline modem (not inside housing) to be connected to a GS10 (port 2 and 3), or GS15 (port 2).
817 713	GEV275	Lemo1, 8pin, 30°	Lemo2, 8pin, 30°	Length 1.8 m Data cable to connect Satel HPR (35W) high power radio to GS10/GS15 GNSS receiver.
799 776	GEV266	Lemo1, 8pin, 135°	Lemo2, 8pin, 30°	Length 1.8 m Data cable to connect Satel HPR (35W) high power radio to GS14/GS16 GNSS receiver.

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/GS14/GS15/GS16 (port 1) to PC to stream NMEA or RTK data. 2. Allows serial connection between CS20 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 CS20 and GS10/GS15 port 1.

USB to serial converter cables

Art. no	Name	Connector 1	Connector 2	Description
806 094	GEV268	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.
806 095	GEV269	Lemo1, 8pin, 135°	USB type A	Length 2.0 m Allows CS20 and GS10/GS14/GS15/GS16 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 1. Allows a CS20 to connect to a GS10/GS14/GS15/GS16 (port 1). 2. Allows a USB connection between the USB port of a PC to a GS10/GS14/GS15/GS16 (port 1). 3. Allows a USB connection between the USB port of a PC to a CS20.
772 807	GEV237	Lemo1, 8pin, 135°	Lemo1, 8pin, 135°	Length 1.65 m Allows a CS20 to connect to a GS10/GS14/GS15/GS16 (port 1).

PPS/Event cables

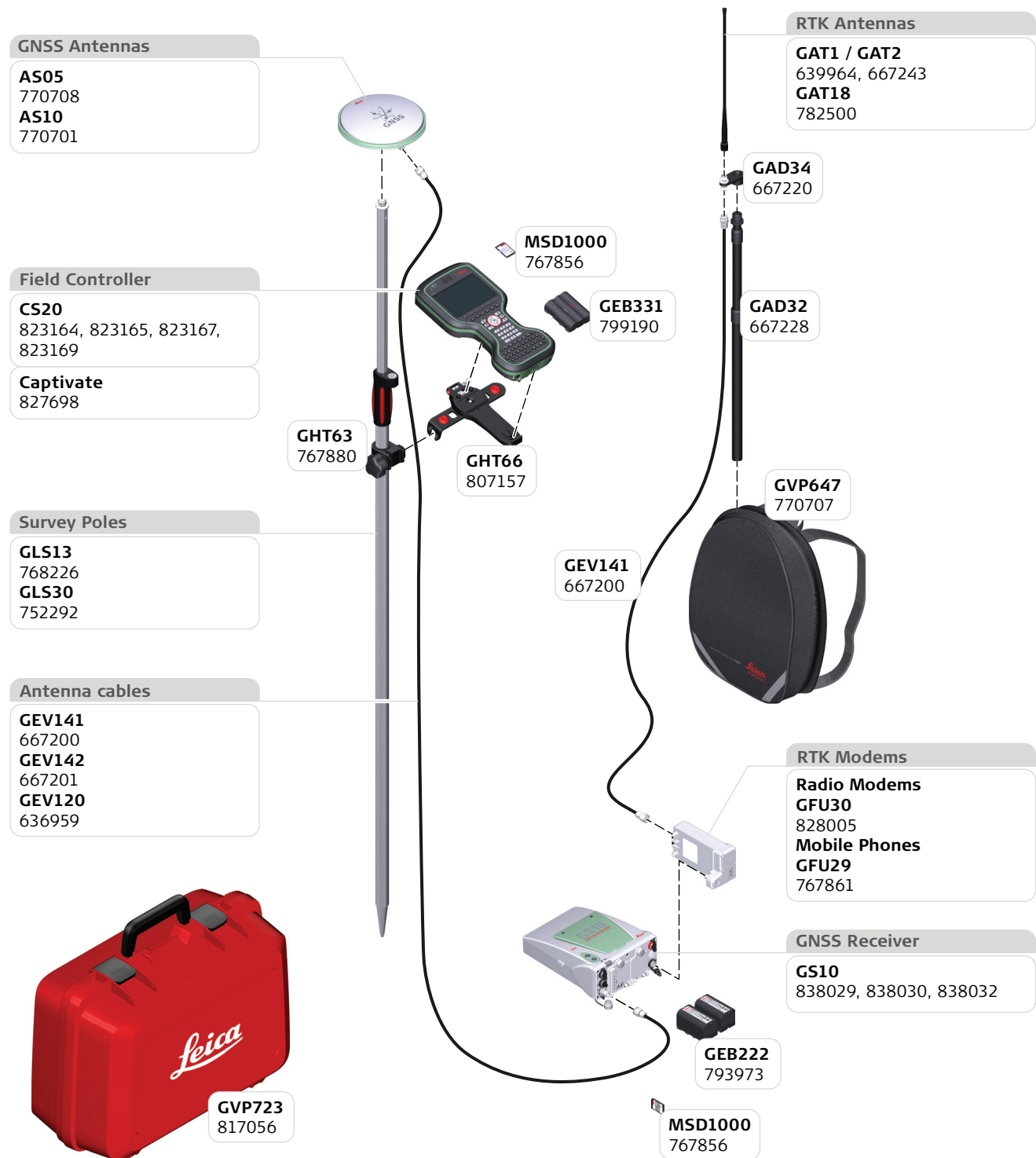
Art. no	Name	Connector 1	Connector 2	Description
667 744	GEV150	Lemo FFA	BNC	Length 2.0 m PPS output cable for GS25 (port PPS) with BNC connector.
403 448	GEV42	H&S QLA	BNC	Length 2.0 m Event input cable for GS25 (port E1) with BNC connector.
789 061	GEV262	Lemo1, 8pin, 30°	BNC	Length 2.0 m Event input cable for GS25 (port E2) with BNC connector.

Antenna cables for connecting GNSS antennas or RTK antennas

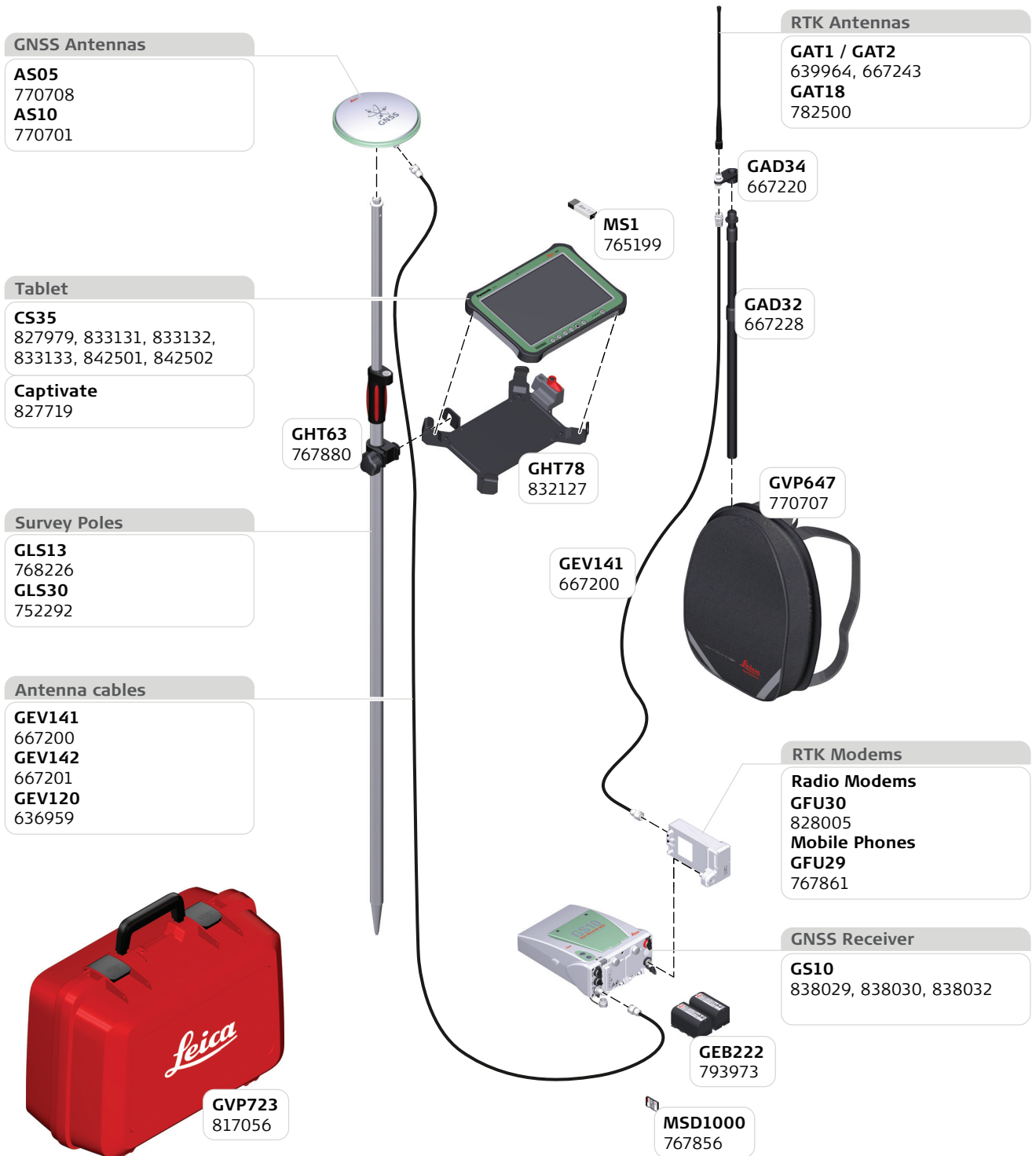
Art. no	Name	Connector 1	Connector 2	Description
667 200	GEV141	TNC connector	TNC connector	Length 1.2 m
772 002	GEV238	TNC connector	SMB connector	Length 1.2 m
667 201	GEV142	TNC connector	TNC connector (male)	Length 1.6 m Extension cable.
636 959	GEV120	TNC connector	TNC connector	Length 2.8 m
632 372	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

Suggested GNSS Setups

48 GS10 Real Time Rover - Pole plus Minipack and CS20 Field Controller

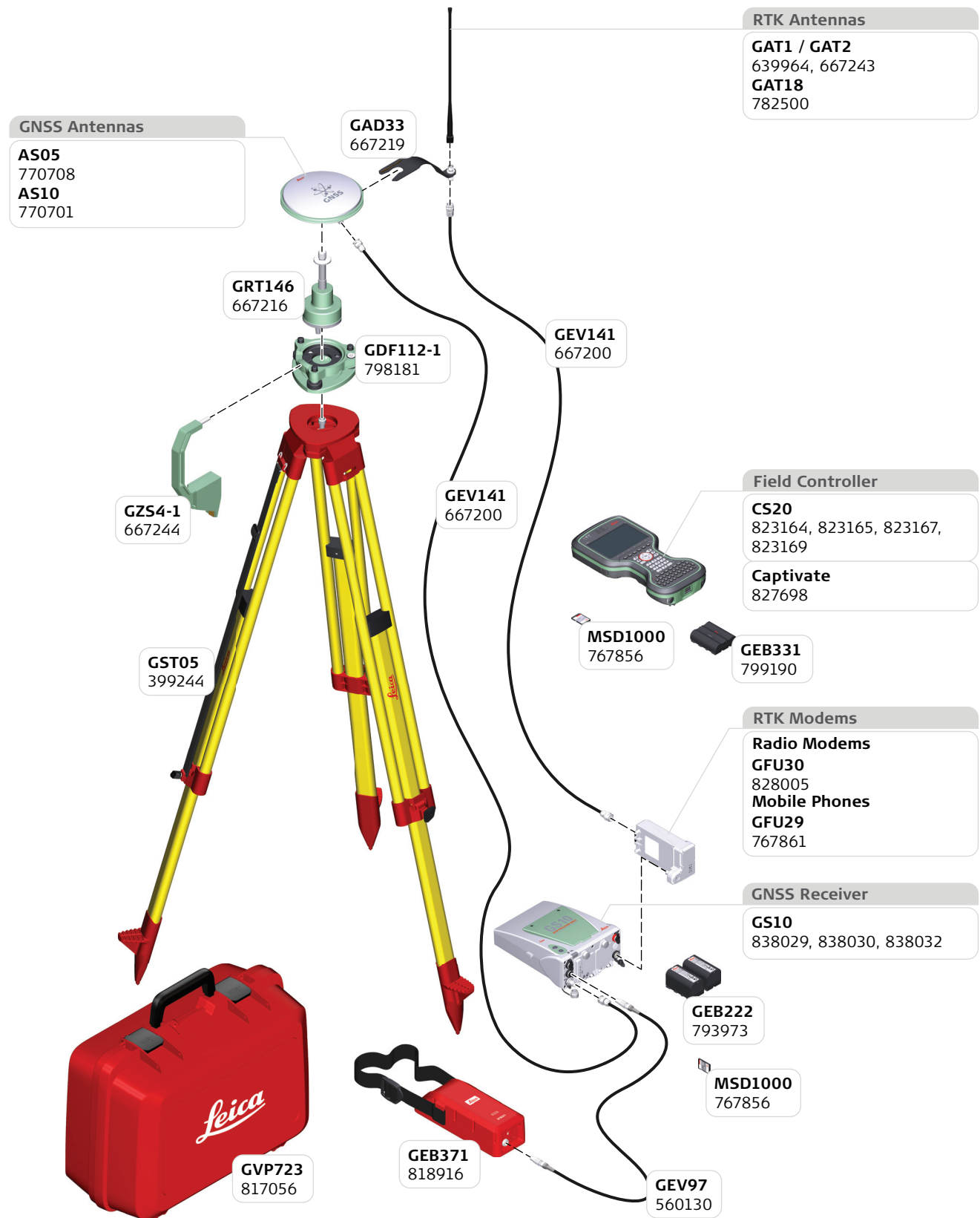


49 GS10 Real Time Rover - Pole plus Minipack and CS35 Tablet

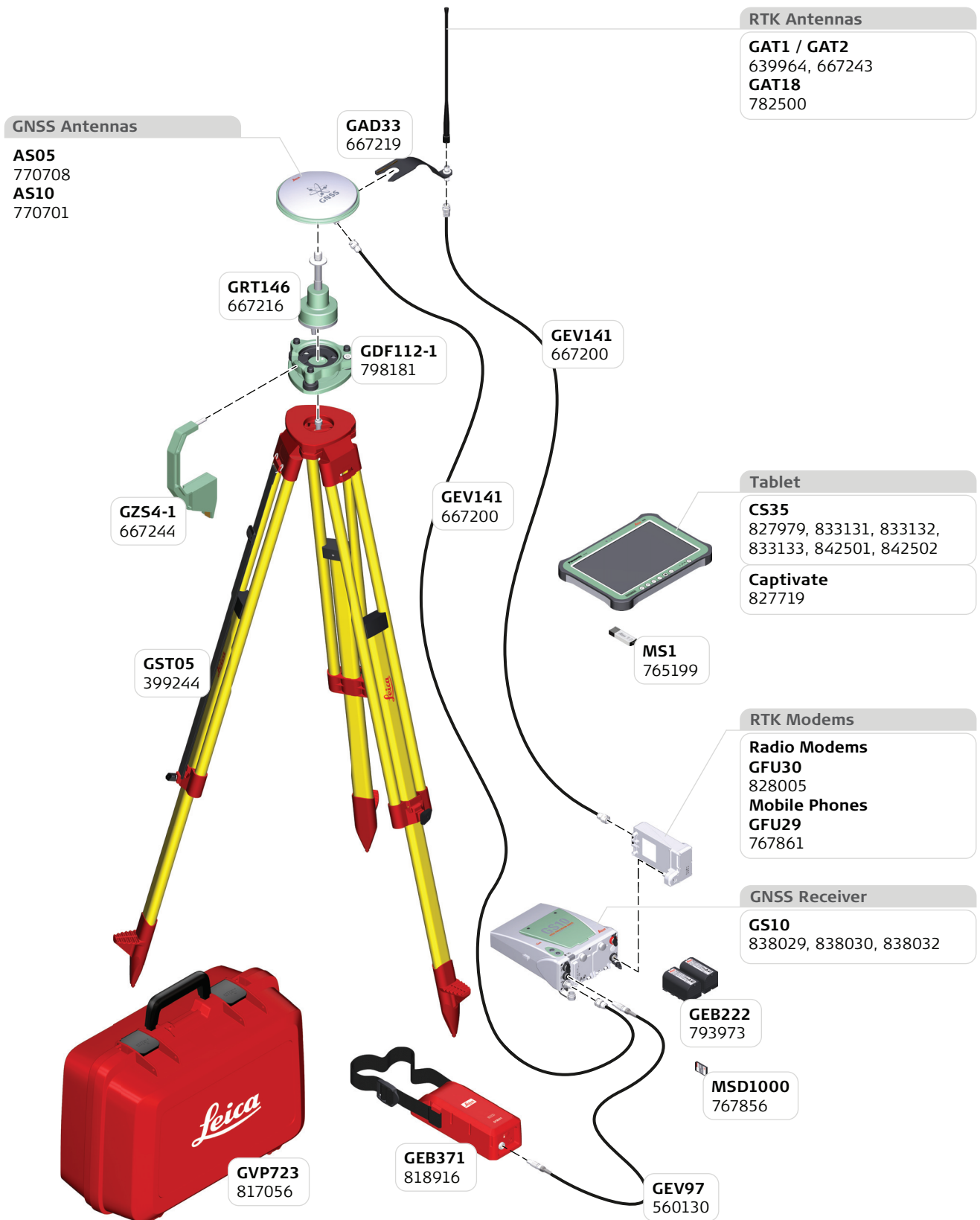


50 GS10 Real Time Reference - Tripod Setup

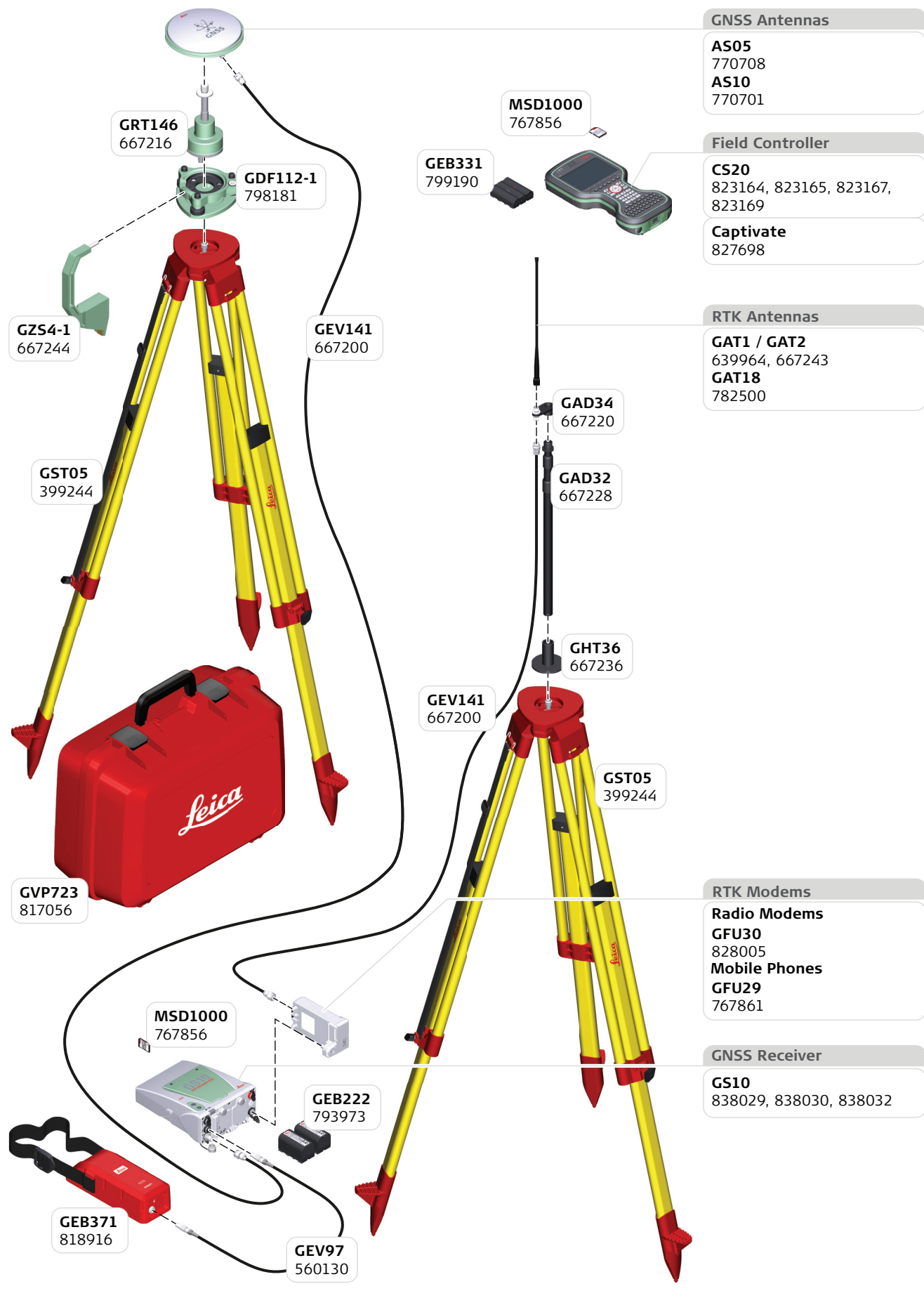
50.1 Using One Tripod and CS20 Field Controller



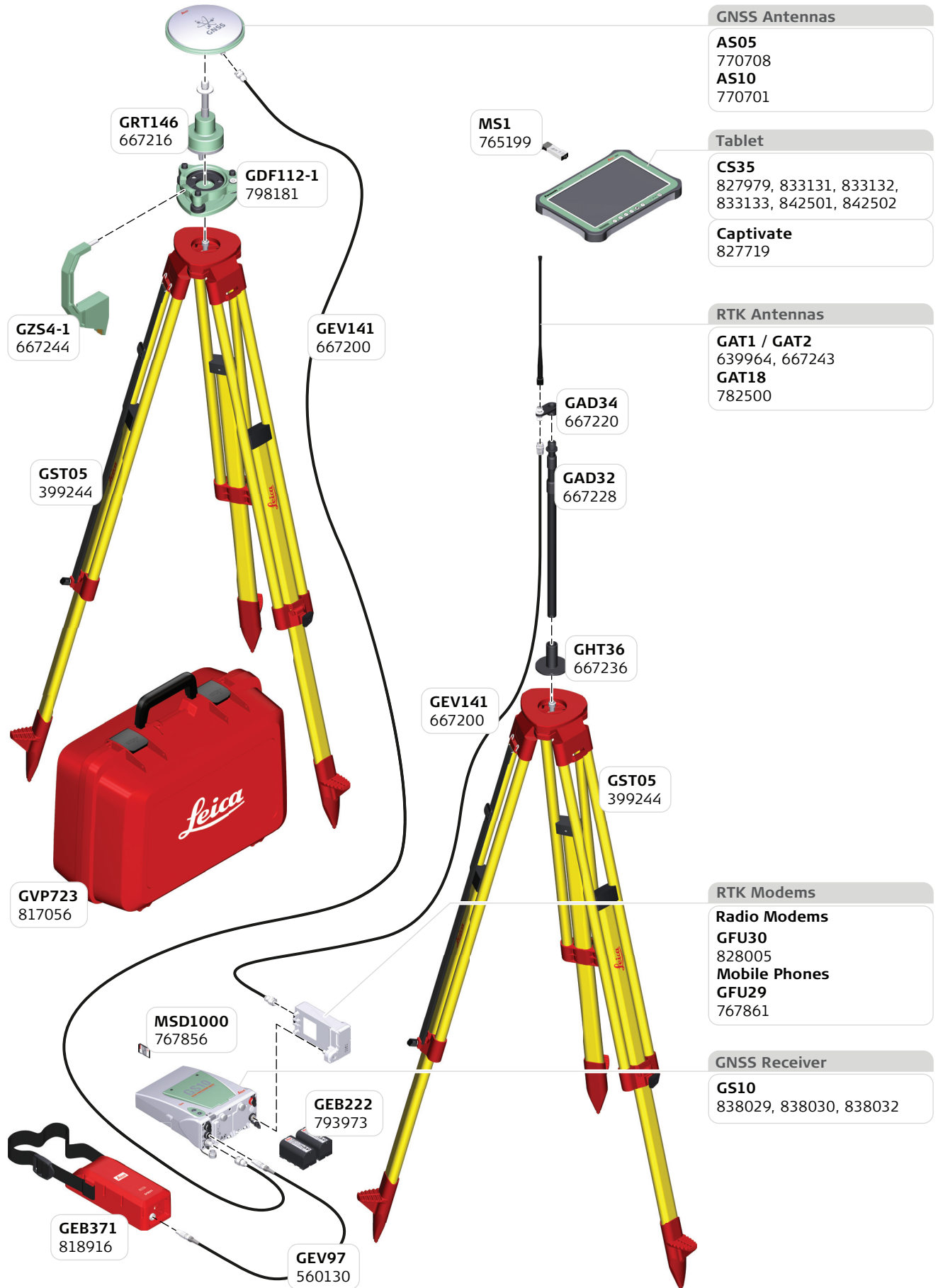
50.2 Using One Tripod and CS35 Tablet



50.3 Using Two Tripods and CS20 Field Controller



50.4 Using Two Tripods and CS35 Tablet



- GNSS Antennas**
- AS05**
770708
 - AS10**
770701

- Tablet**
- CS35**
827979, 833131, 833132, 833133, 842501, 842502
 - Captivate**
827719

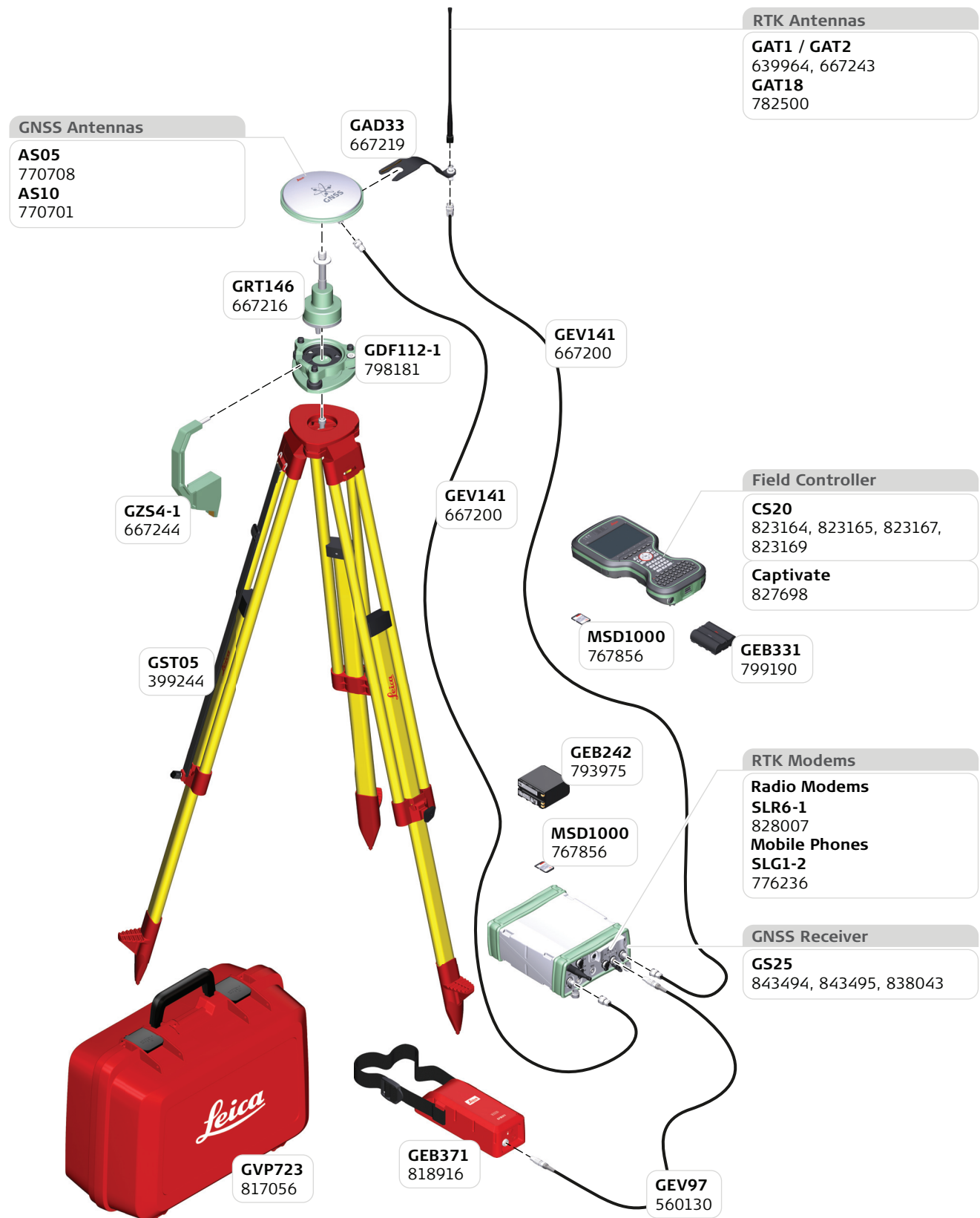
- RTK Antennas**
- GAT1 / GAT2**
639964, 667243
 - GAT18**
782500

- RTK Modems**
- Radio Modems**
GFU30
828005
 - Mobile Phones**
GFU29
767861

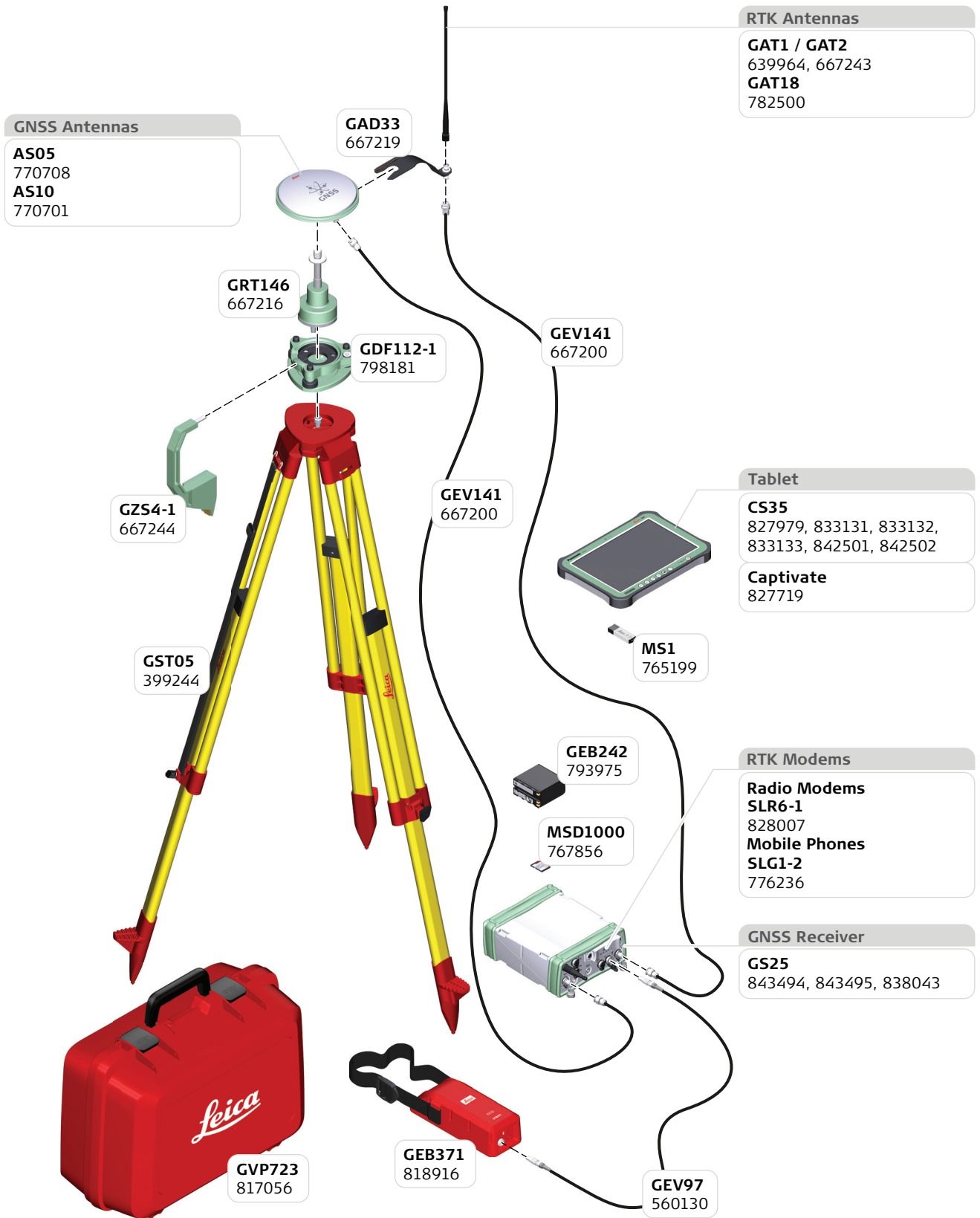
- GNSS Receiver**
- GS10**
838029, 838030, 838032

51 GS25 Real Time Reference - Tripod Setup

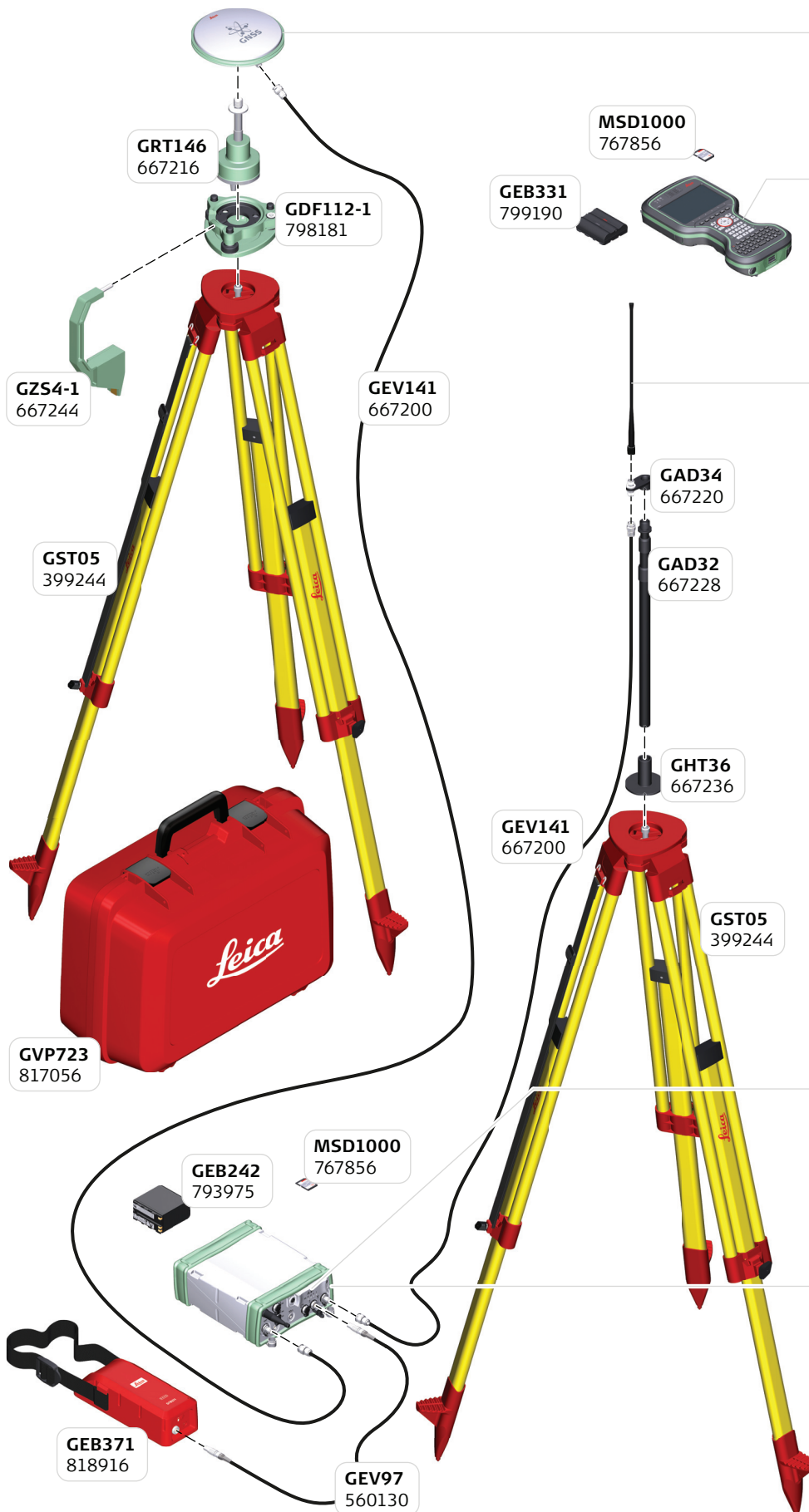
51.1 Using One Tripod and CS20 Field Controller



51.2 Using One Tripod and CS35 Tablet



51.3 Using Two Tripods and CS20 Field Controller



GNSS Antennas

- AS05**
770708
- AS10**
770701

Field Controller

- CS20**
823164, 823165, 823167, 823169
- Captivate**
827698

RTK Antennas

- GAT1 / GAT2**
639964, 667243
- GAT18**
782500

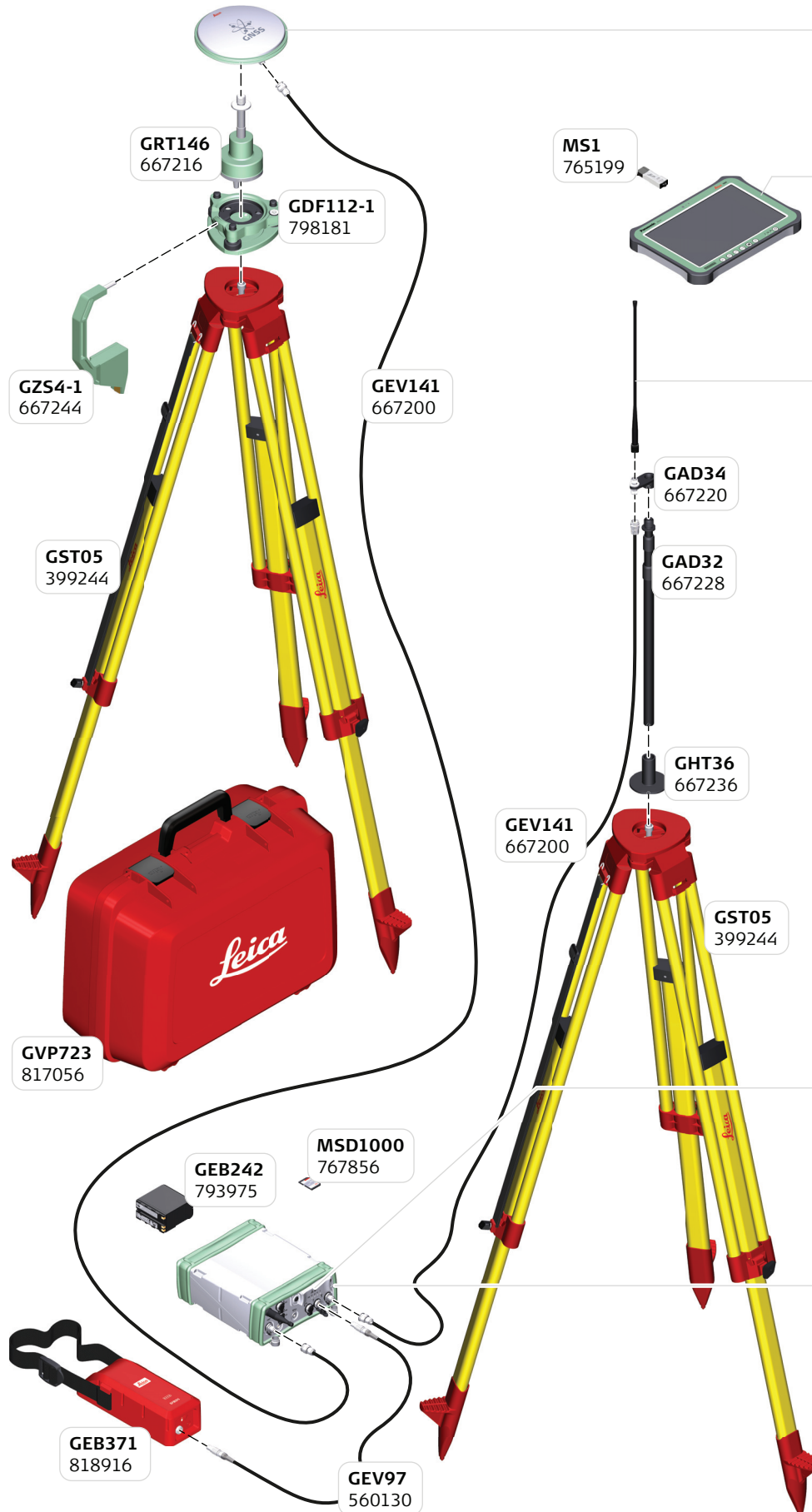
RTK Modems

- Radio Modems**
- SLR6-1**
828007
- Mobile Phones**
- SLG1-2**
776236

GNSS Receiver

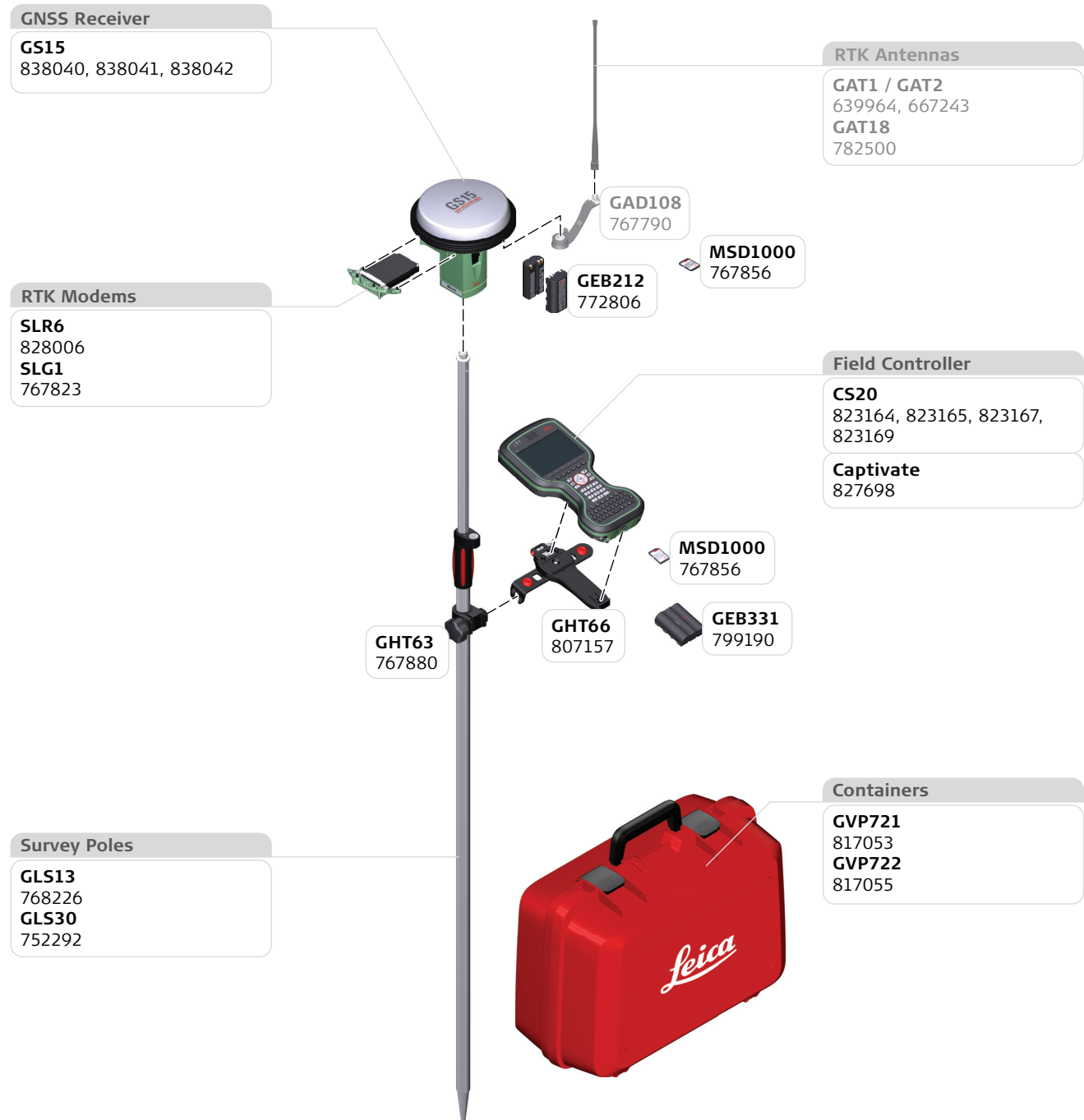
- GS25**
843494, 843495, 838043


51.4 Using Two Tripods and CS35 Tablet



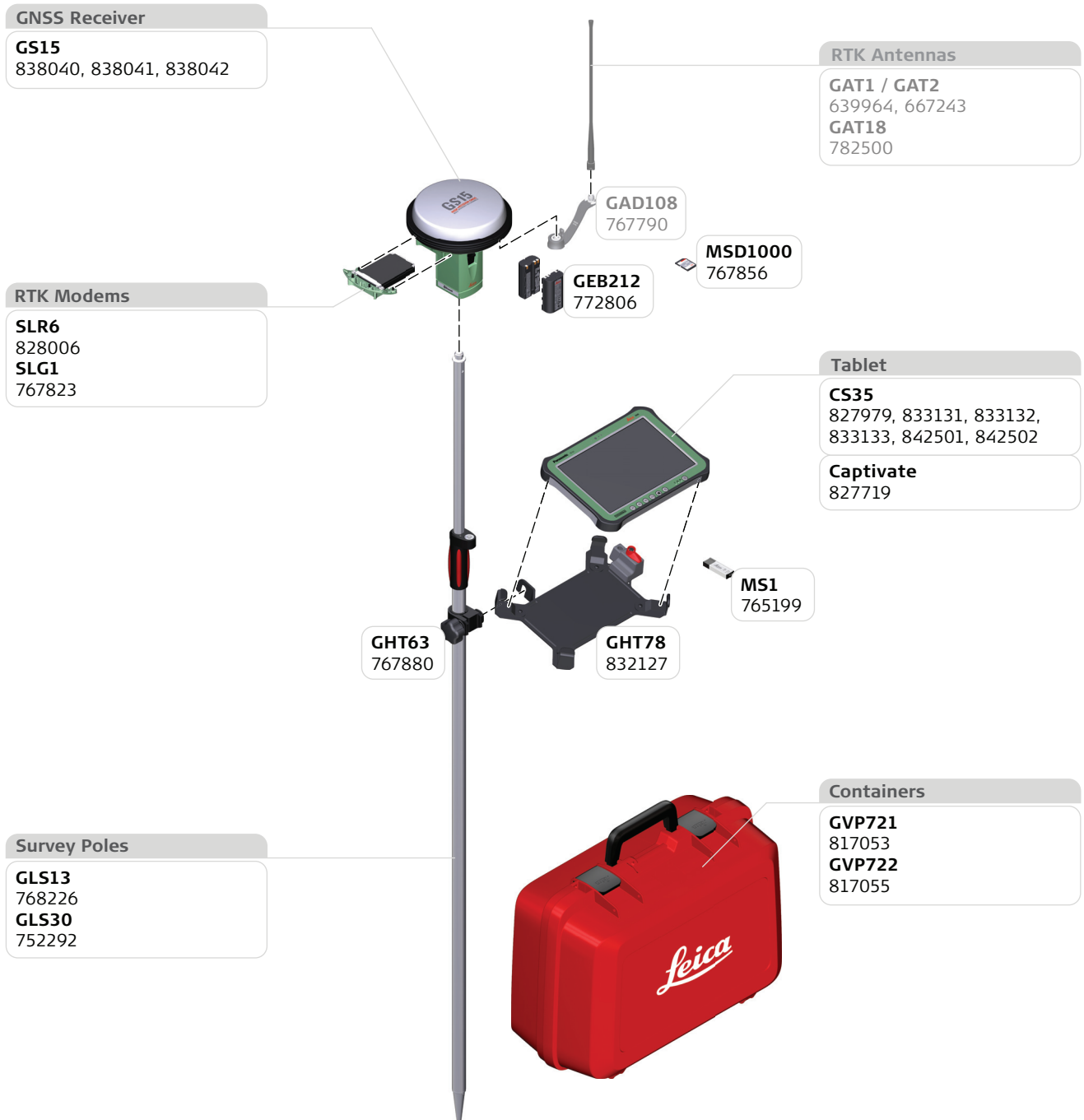
52 GS15 Real Time Rover


52.1 Using CS20 Field Controller



 Please refer to the Leica Viva TPS or Leica Nova TPS Equipment lists for the usage of a GS15 receiver in a SmartPole or SmartStation setup.

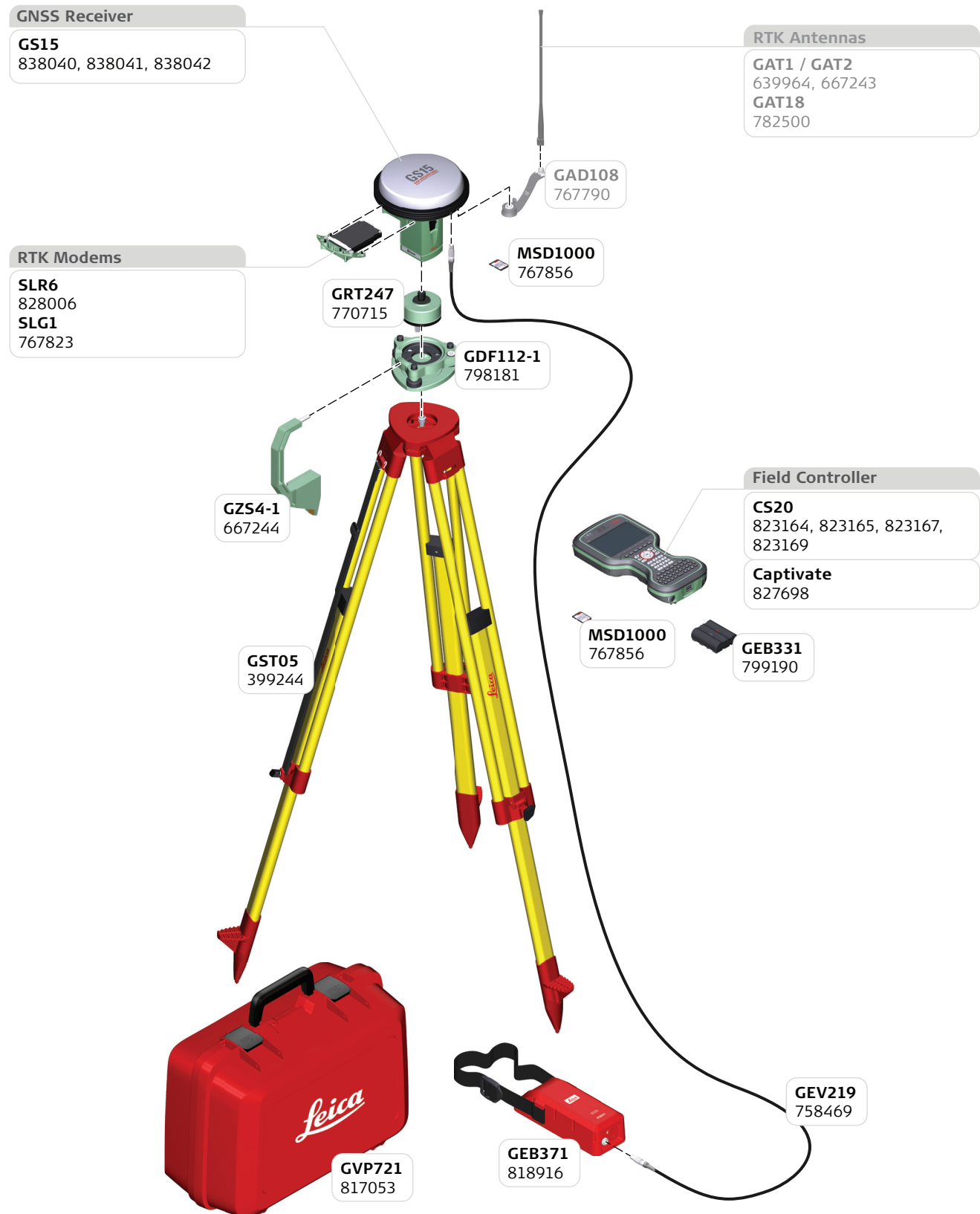
52.2 Using CS35 Tablet



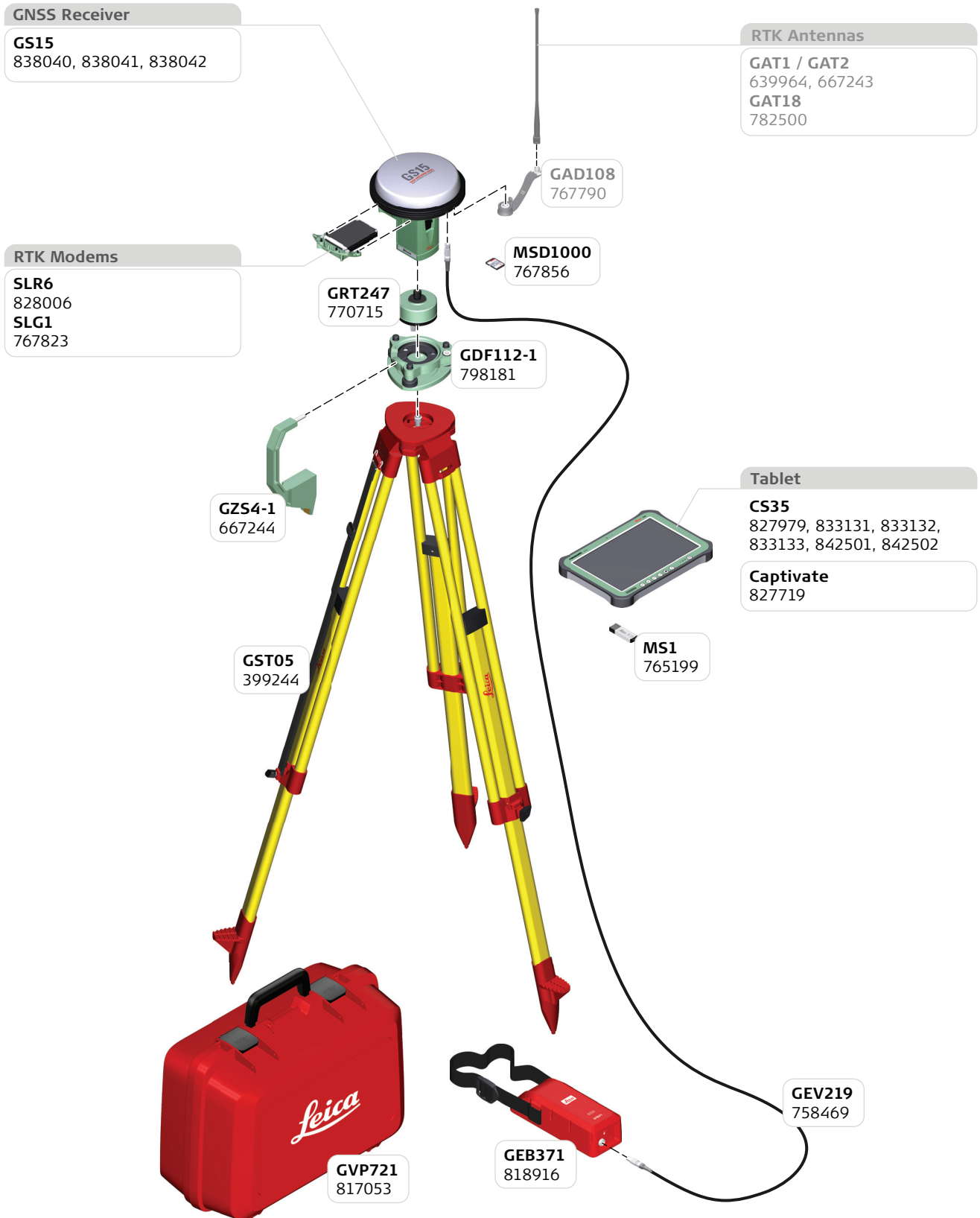
 Please refer to the Leica Viva TPS or Leica Nova TPS Equipment lists for the usage of a GS15 receiver in a SmartPole or SmartStation setup.

53 GS15 Real Time Reference - Tripod Setup

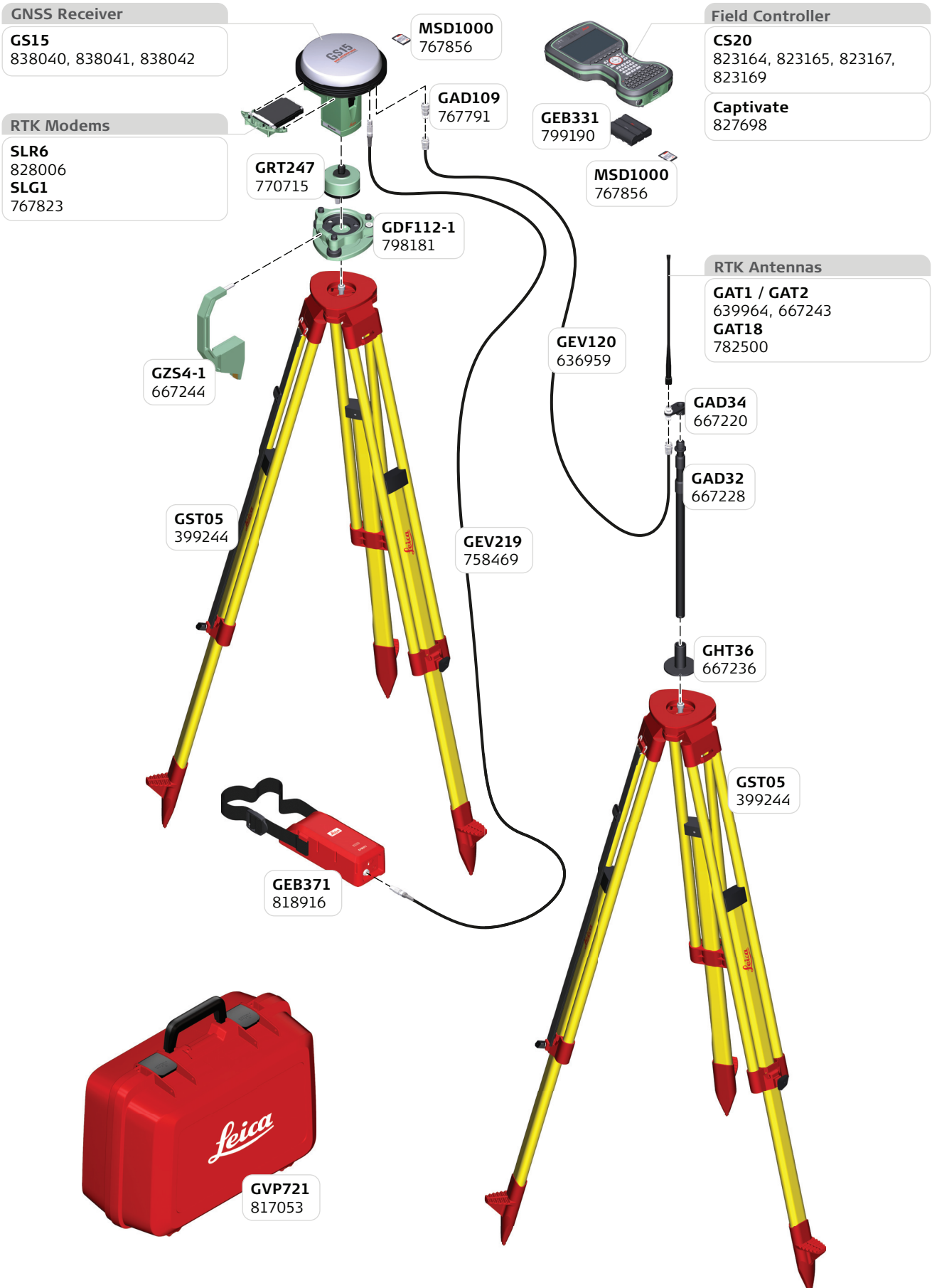
53.1 Using One Tripod and CS20 Field Controller



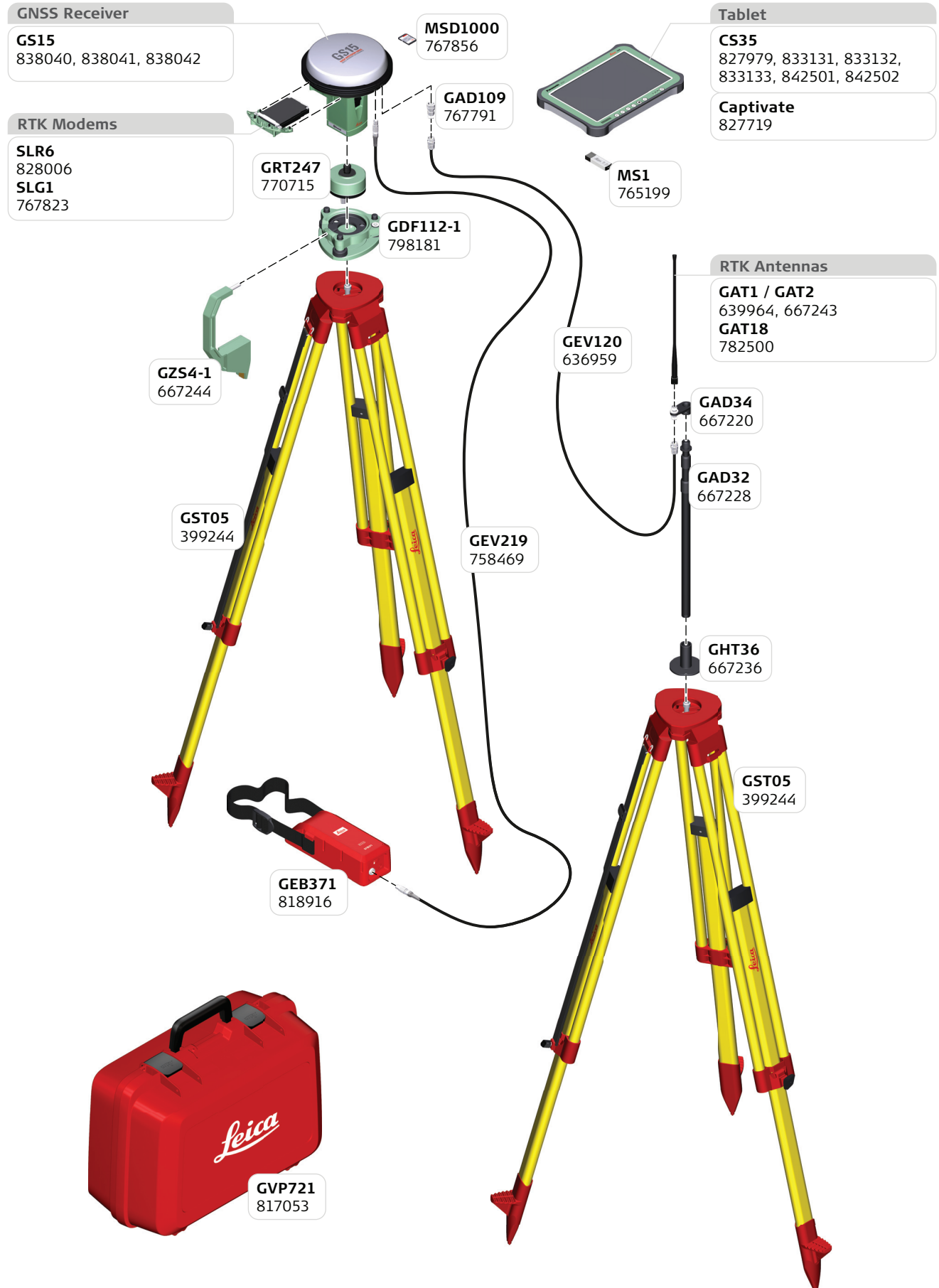
53.2 Using One Tripod and CS35 Tablet



53.3 Using Two Tripods and CS20 Field Controller

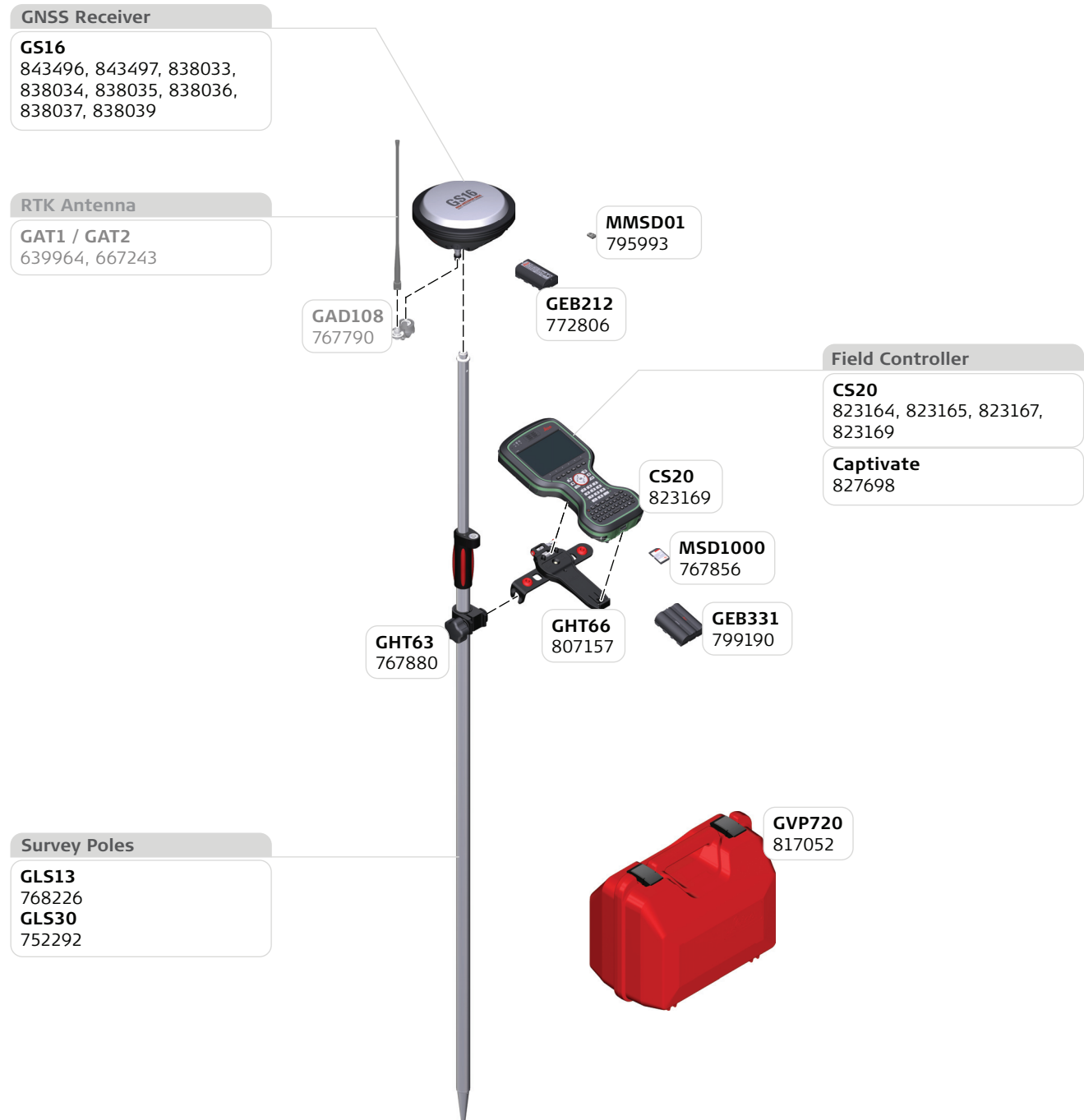


53.4 Using Two Tripods and CS35 Tablet



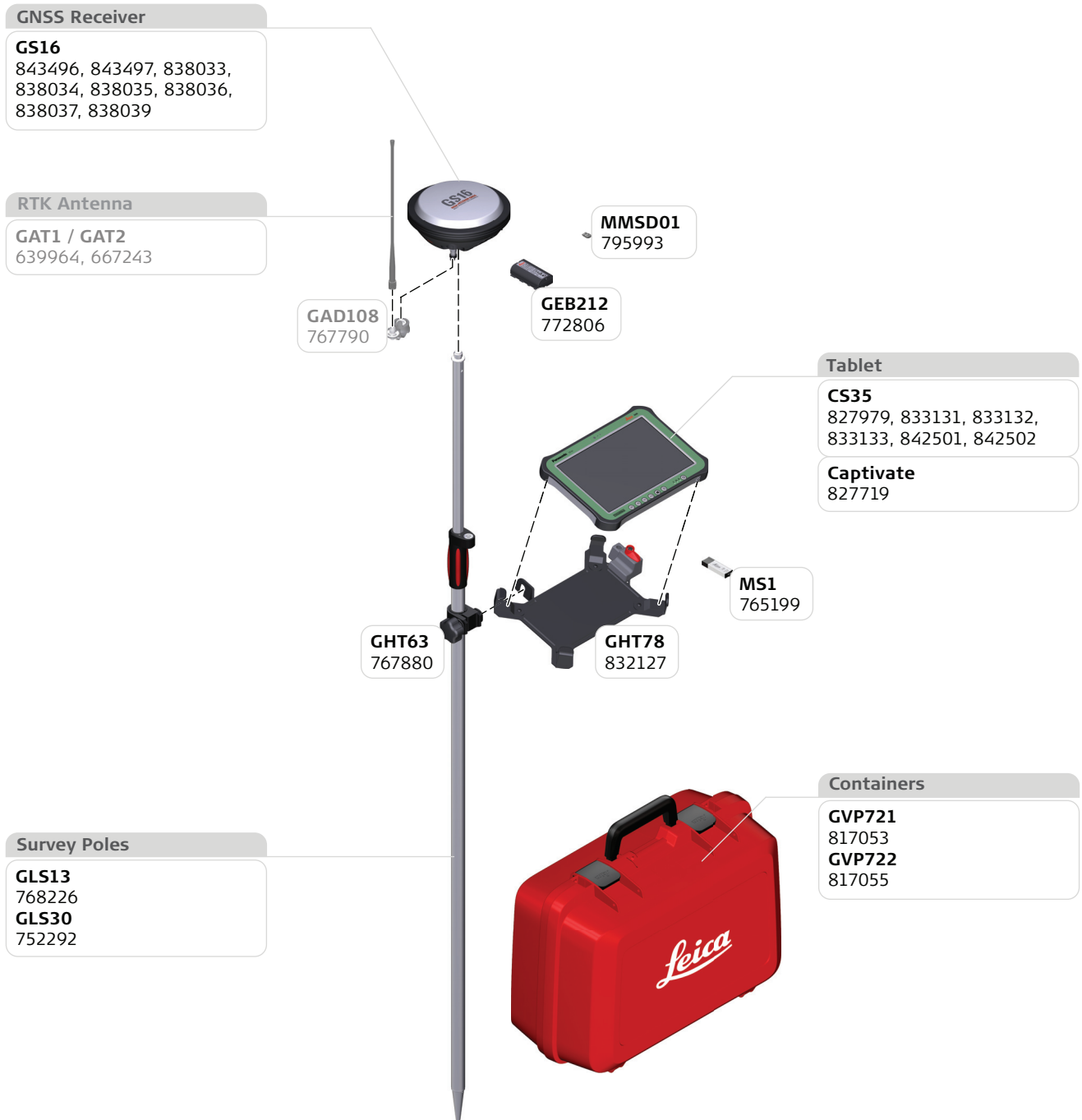
54 GS16 Real Time Rover


54.1 Using CS20 Field Controller



 Please refer to the Leica Viva TPS or Leica Nova TPS Equipment lists for the usage of a GS16 receiver in a SmartPole or SmartStation setup.

54.2 Using CS35 Tablet



 Please refer to the Leica Viva TPS or Leica Nova TPS Equipment lists for the usage of a GS16 receiver in a SmartPole or SmartStation setup.

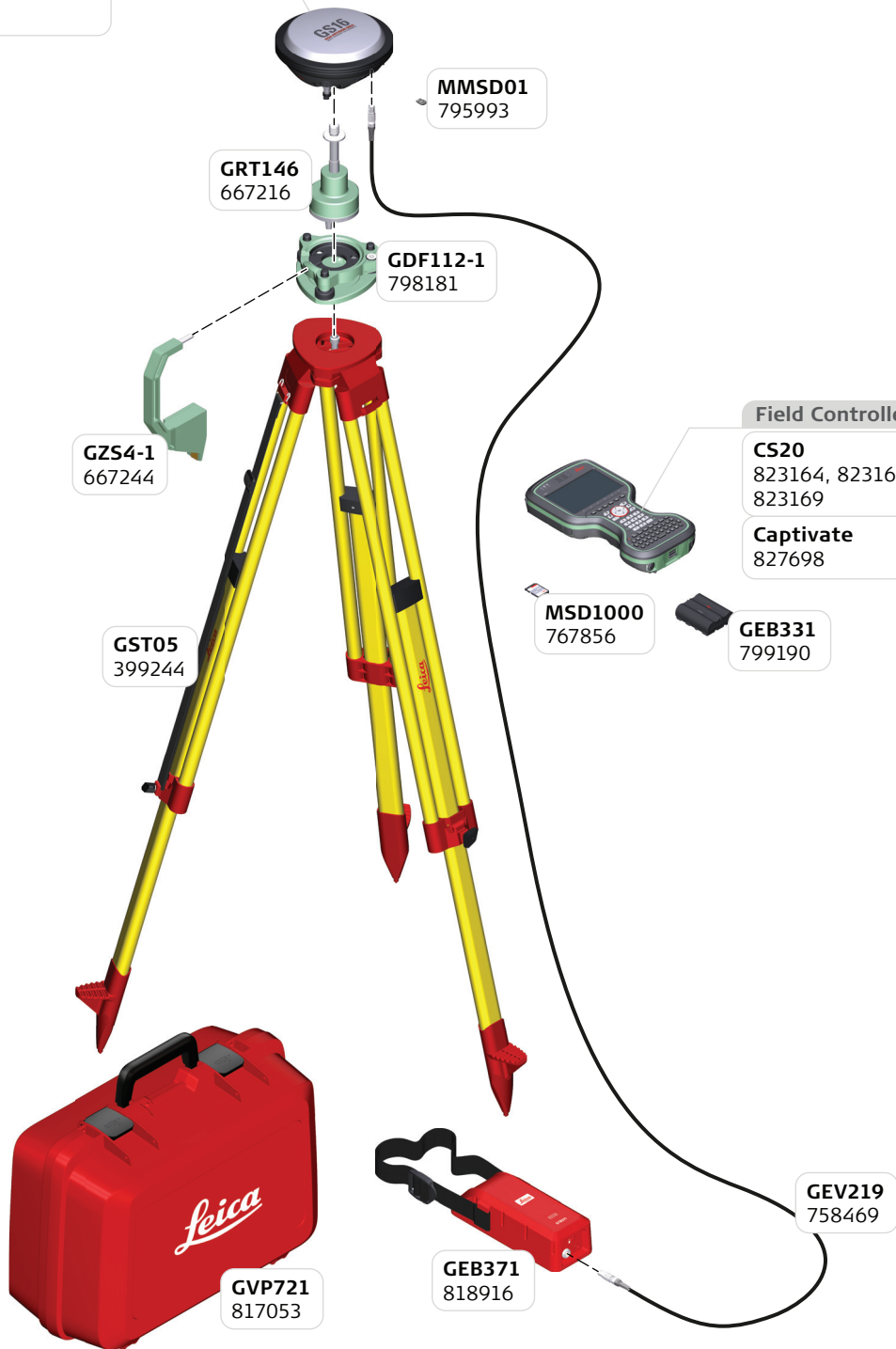
55 GS16 Real Time Reference - Tripod Setup

55.1 Using GS16 phone modem and CS20 Field Controller

GNSS Receiver

GS16

843496, 843497, 838033,
838034, 838035, 838036,
838037, 838039



Field Controller

CS20

823164, 823165, 823167,
823169

Captivate

827698

MSD1000
767856

GEB331
799190

GVP721
817053

GEB371
818916

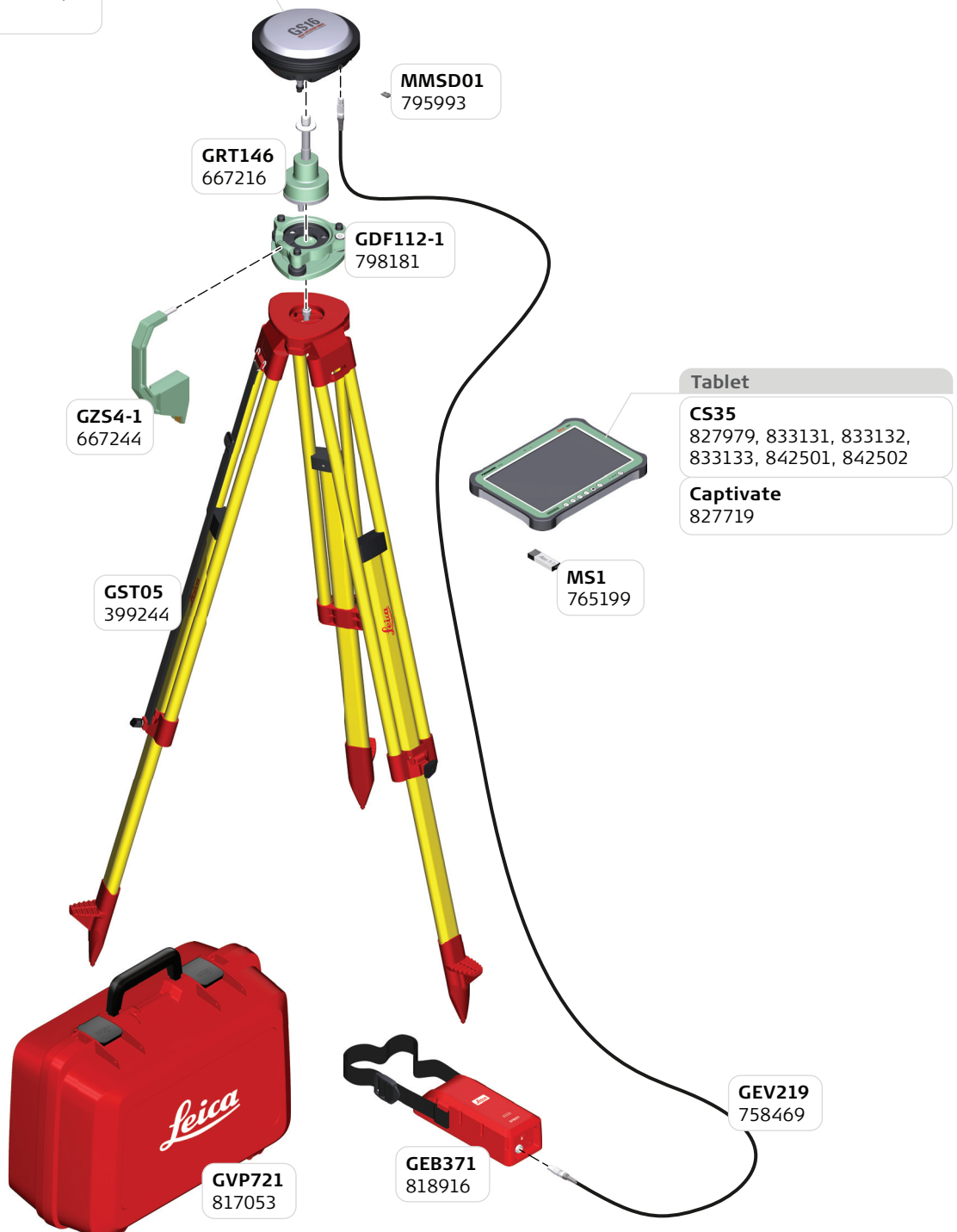
GEV219
758469

55.2 Using GS16 phone modem and CS35 Tablet

GNSS Receiver

GS16

843496, 843497, 838033,
838034, 838035, 838036,
838037, 838039



MMSD01
795993

GRT146
667216

GDF112-1
798181

GZS4-1
667244

GST05
399244

Tablet

CS35

827979, 833131, 833132,
833133, 842501, 842502

Captive

827719

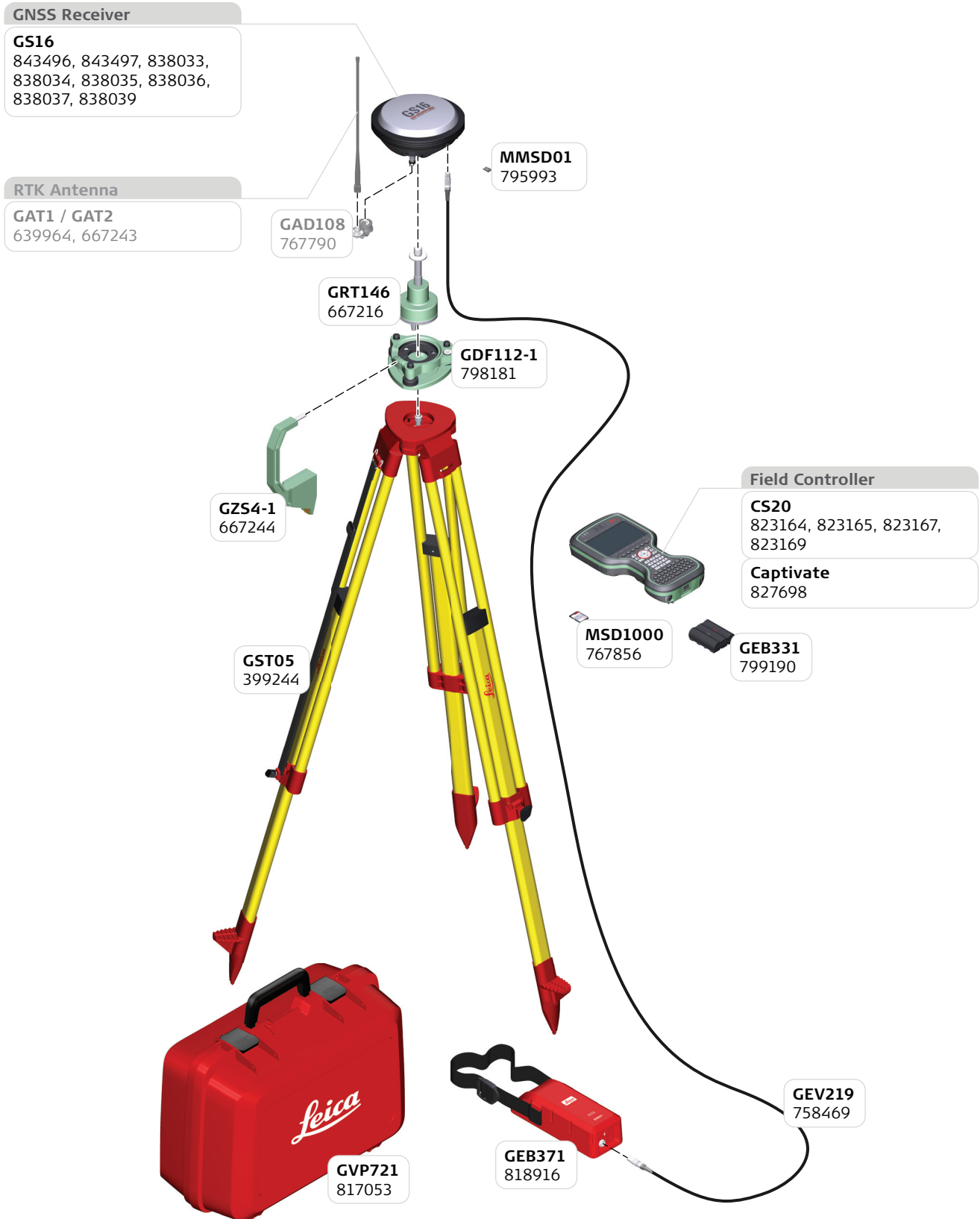
MS1
765199

GEV219
758469

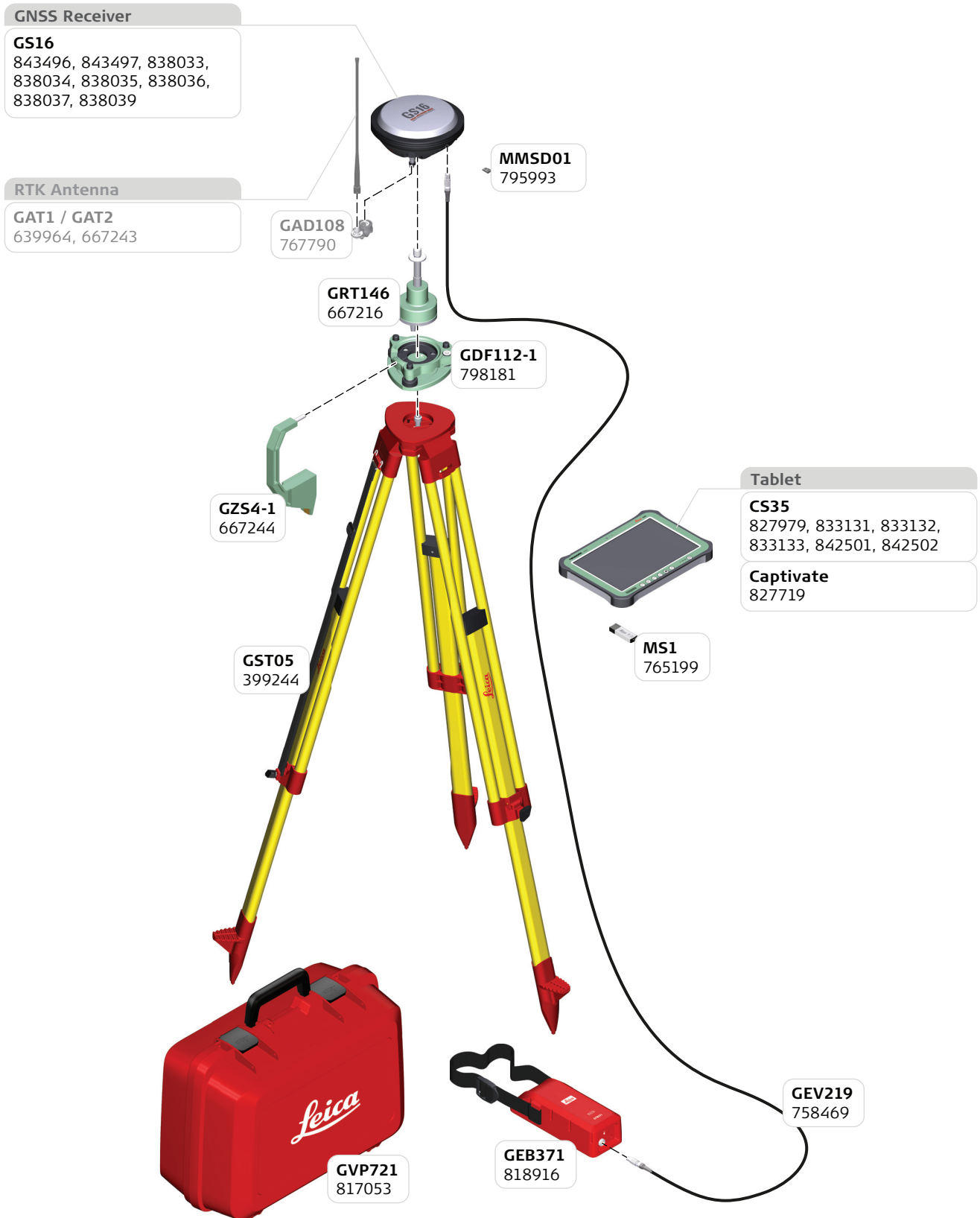
GEB371
818916

GVP721
817053

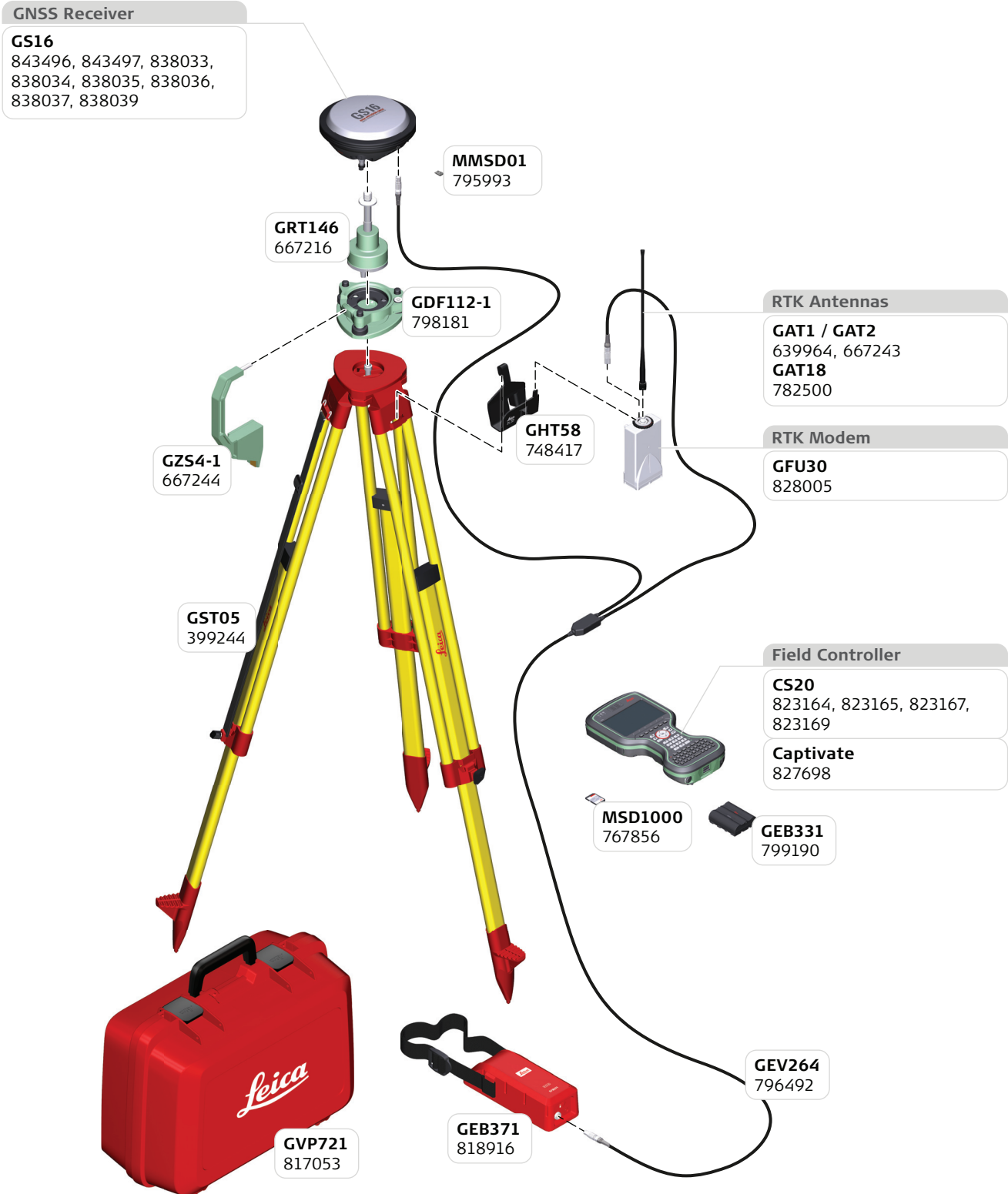
55.3 Using GS16 radio modem and CS20 Field Controller



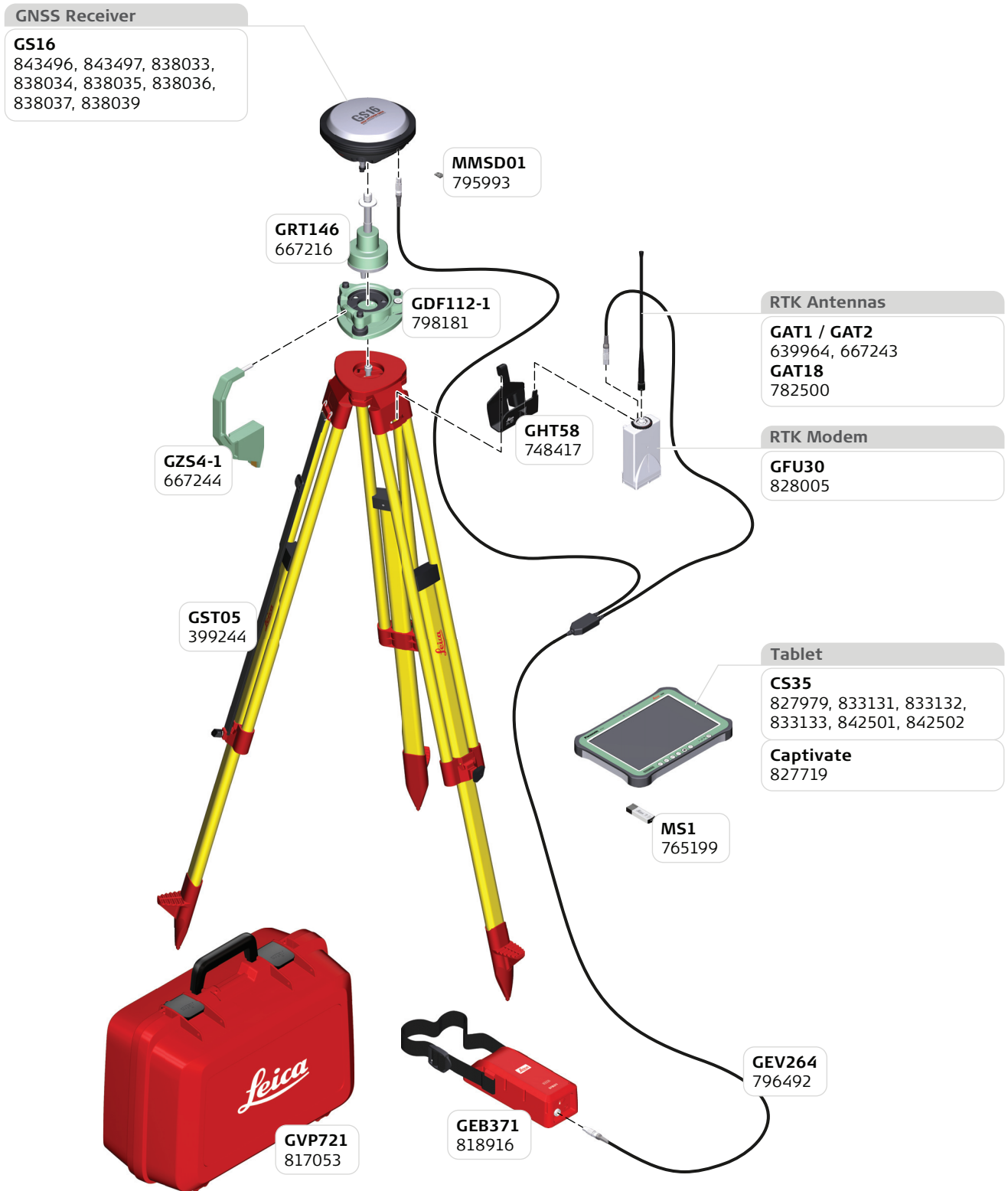
55.4 Using GS16 radio modem and CS35 Tablet



55.5 Using external RTK module and CS20 Field Controller

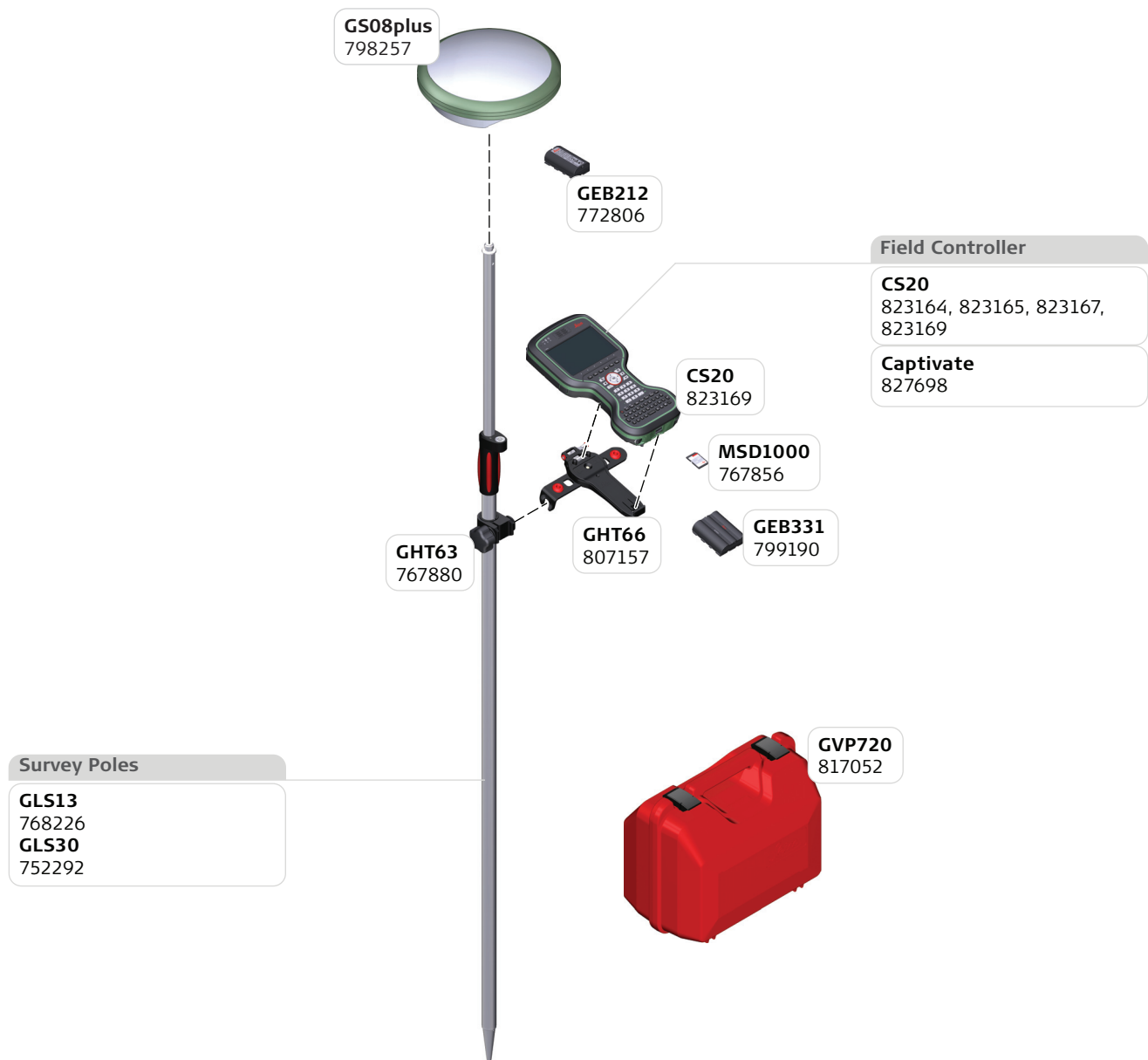


55.6 Using external RTK module and CS35 Tablet



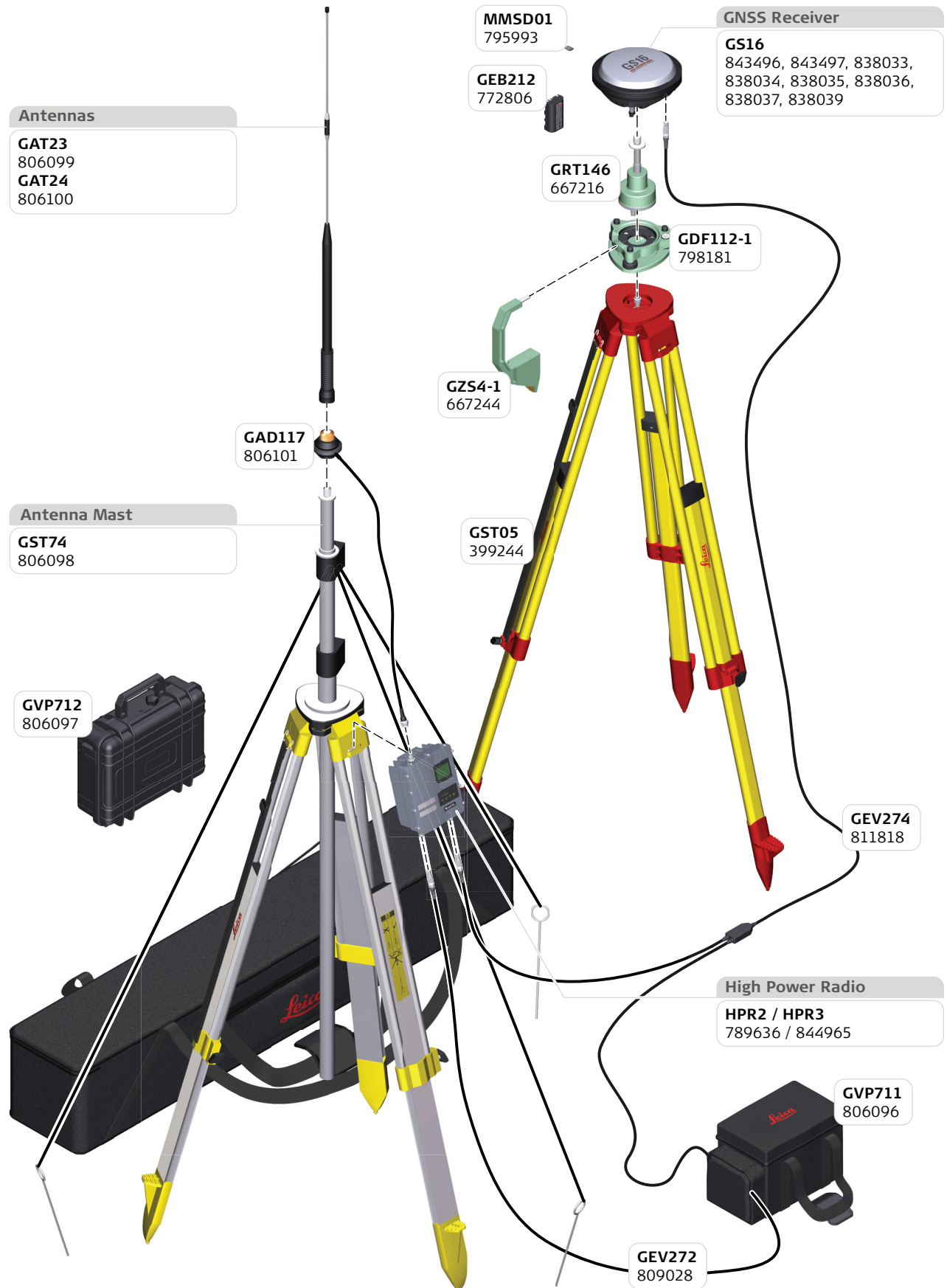
56 GS08plus Real Time Rover

56.1 Using CS phone modem

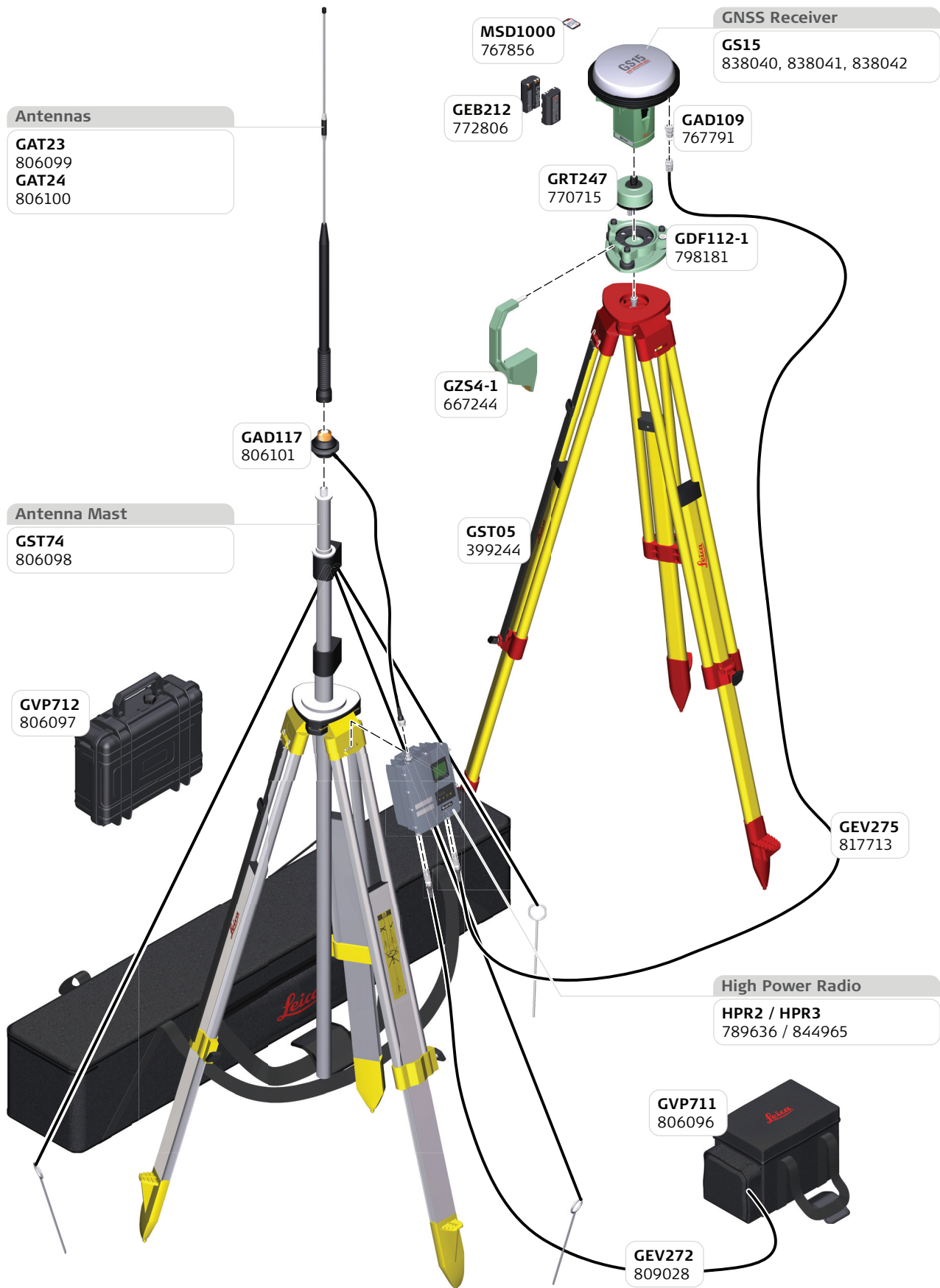



57 Satellite High Power Radio (HPR)

57.1 Satellite High Power Radio Setup with GS16

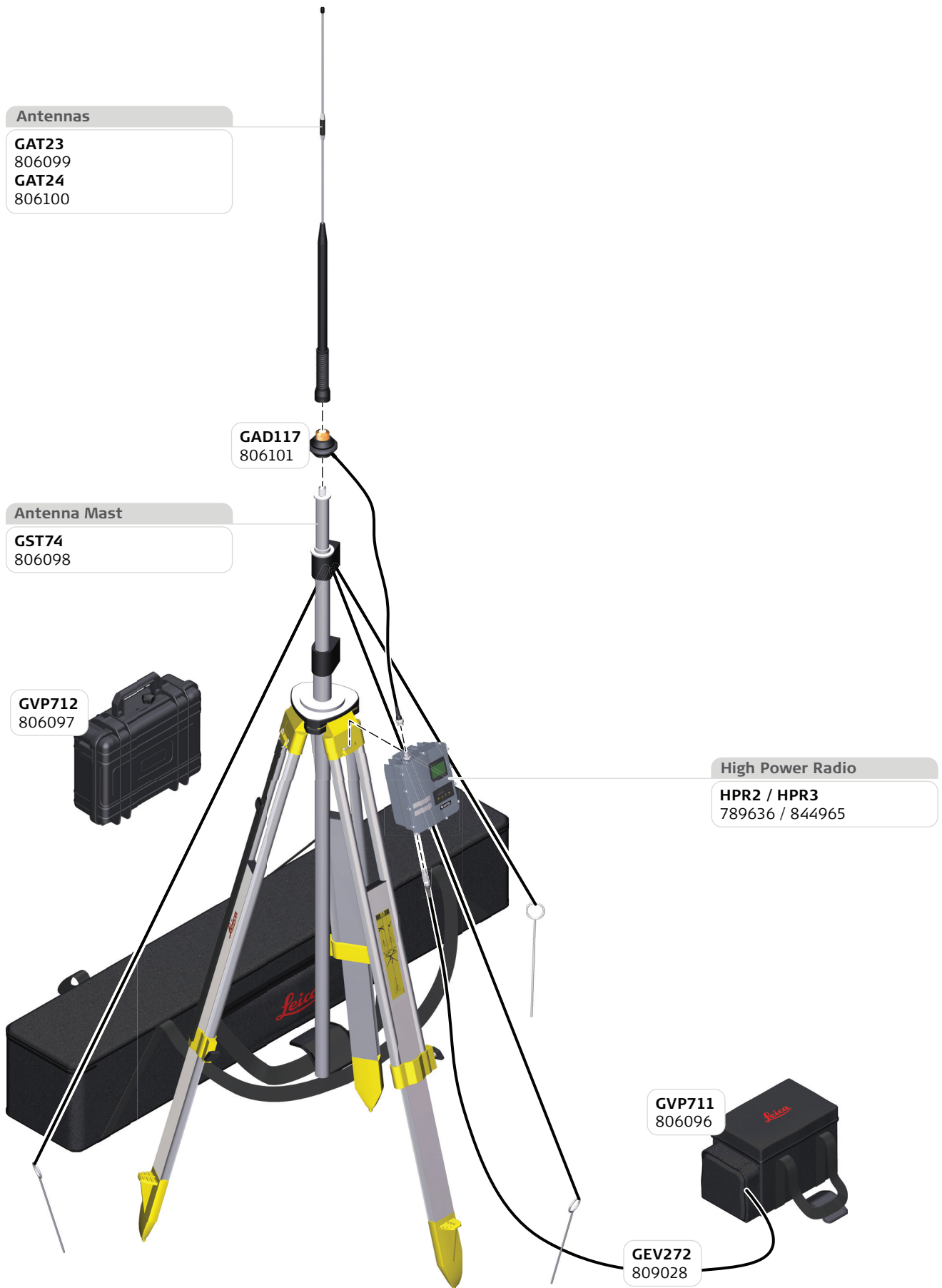


57.2 Satellite High Power Radio Setup with GS15



 To power the GS15 externally from the car battery (GVP711 soft bag) the GEV274 can be used instead of the GEV275.

57.3 Satellite High Power Radio Setup - Standalone



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