

Survey & GPS

Solutions Catalog



IMAGING & ROBOTIC TOTAL STATIONS • CONVENTIONAL TOTAL STATIONS • THEODOLITES • LEVELS • FIELD CONTROLLERS
SOFTWARE • GEODETIC RECEIVERS • NETWORK SOLUTIONS • ANTENNAS • LASER SCANNER • ACCESSORIES

 **TOPCON**



Who is Topcon Positioning Systems?

Topcon Positioning Systems is the world's leading developer of precision positioning solutions, and offers the widest selection of innovative precision GPS, laser, optical surveying, agricultural, and construction machine control systems available today. With over a 75 year history, Topcon has a deep understanding of the survey profession and continues to provide premier solutions for today's changing industry.

Topcon is also known for its many World's First technologies, starting with the first coaxial total station. Since then, Topcon has pioneered the auto-focus total station, the imaging total station, and such powerful technologies as Intelligent Scan, and Touch Drive. In satellite positioning, Topcon is widely known as the pioneer of GPS+GLONASS, many years before our competitors. With the advent of G3, Topcon pioneered universal tracking, so that all current and future signals can be tracked by a single unit.

This constant drive to innovate continues today. In this catalog, you will find the most advanced technology available today, embedded within products designed for the way you work every day. The result is a suite of solutions, from hardware to software, from field to office, that are both powerful and easy to use. And Topcon is also 100 percent committed to your success after you have made your purchase. Please see the back of this catalog to find out about Topcon University, the most comprehensive training solution in the industry today.

Topcon Positioning Systems. Your choice for survey solutions.



Survey & GPS Solutions Catalog

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Imaging Station

Long-range Scanning, Imaging and Robotic Total Station



- **A robotic instrument and much more**
- **Two Digital Cameras – wide angle and 30X tele-zoom**
- **Long Range Scanning**
- **Intelligent Scan feature recognition**
- **Fully robotic internal 2.4 GHz radio**
- **6,500' (2,000m) reflectorless measurement**
- **Remote image display by TopSURV and ImageMaster™**

A new way to scan

Topcon's IS combines the best of two worlds, advanced imaging and high-accuracy surveying, incorporating real-time field imagery with spatial data. The powerful technology of the IS Imaging Station is controlled using Topcon's exclusive ImageMaster™ software that produces "photography with dimension", a revolutionary and cost effective alternative to laser scanning.

Long Range Scanning

The world's longest reflectorless (6,500' (2,000m)) robotic instrument now can scan long ranges as well. Mining and monitoring applications can be accomplished with the IS.

Remote Networking

The IS has WLAN capability and can be controlled remotely via network or internet connection.

Touch Drive - Turn and select a point on screen

Simply touch the screen image to direct the crosshairs. For the highest degree of data accuracy, clarity of image is key. That's why Topcon incorporates telescopic zoom with a Quarter VGA LCD display.

Imaging Station Specifications

Angle Measurement

Accuracy	1", 3", 5" (0.3mgon)
Tilt Correction	Dual Axis

Distance Measurement

Prism Mode: 1 prism	9,840' (3,000m)
Accuracy: Fine	±(2mm+2ppmxD*) m.s.e.
Non-Prism Mode	4.9' - 820' (1.5m - 250m)
NP Accuracy: Fine	±(5mm) m.s.e.
Non-Prism Long Mode	16.4' - 6,500' (5.0m - 2,000m)
NP Long Mode Accuracy	±(10mm+10ppmxD*) m.s.e.

Imaging

Cameras	(2) 1.3mp
Image speed	1 - 15 fps
Scanning	Max 20 pts/sec

Imaging Station Instruments & Accessories

Imaging Station	
Part #	Description
60663-2	IS 1" (IMAGING STATION)
60664-2	IS 3" (IMAGING STATION)
60665-2	IS 5" (IMAGING STATION)
RC-3 Remote Control	
60430	RC-3
Imaging Station Instrument & Robotic Accessories	
60487	BT-65Q BATTERY (IS)
60565	BT-66Q BATTERY (RC-3)
60700	BC-30D (120V) DUAL CHARGER
60241	BC-30B (120V) SINGLE CHARGER
50056	POWER CABLE PC-21
60434	RS-1 RADIO MODEM
60702	A7R PRISM
60243	Cable, F-25 USB
60722	MOUNT, GPS FOR A7 PRISM
60721	MOUNT, RC-3R SIDE
50048	OPEN CLAMP POLE BRACKET
60725	AMBICOM WIFI CF CARD
60502	ON-BOARD TOPSURV
60829	HEIGHT ADJUST PLUG 3
51341	SOLAR RETICLE 6
51344	SOLAR FILTER FLIP-UP 6
51340	DIAGONAL EYEPIECE 10
55334	TROUGH COMPASS 6



RC-3 Remote Control
Part # 60430



Mount, RC-3R Side
Part # 60721



A7R Prism
Part # 60702



RS-1 Radio Modem
Part # 60434



BT-65Q Battery
Part # 60487



BC-30D (120V) Dual Charger
Part # 60700



Mount, GPS for A7 Prism
Part # 60722



BC-30B (120V) Single Charger
Part # 60241

Imaging Station Control

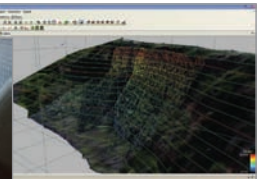
3D Image Modeler Software



ImageMaster

- WLAN control of Imaging Station
- Generate true 3D models for measuring, mapping and interpretation
- Calculate Volumes and Cross Sections (standard only)
- Stereopair photogrammetry (pro only)

See page 4 for more details.



Imaging Station Field Solution Options

Field Controllers



FC-2500

- 624 MHz XScale processor
- 256 MB RAM, 2 GB ROM
- Add-on robotic radio design

See page 30 for more details.



FC-250

- 806 MHz Processor
- 256 MB DDR SDRAM, 1 GB Flash Memory (NAND)
- RS-1 Radio capable

See page 32 for more details.

Field Software



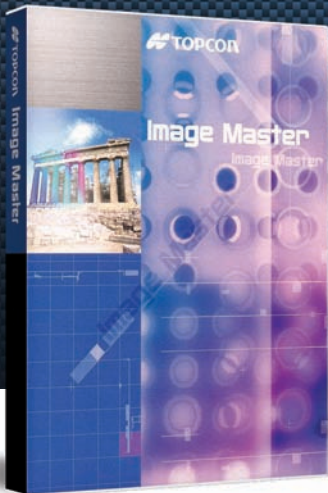
TopSURV

- Large Graphical User Interface (GUI)
- Graphical Stakeout
- Map View data collection
- Fast job management and storage

See page 38 for more details.

ImageMaster

Imaging Station Control and 3D Image Modeler Software



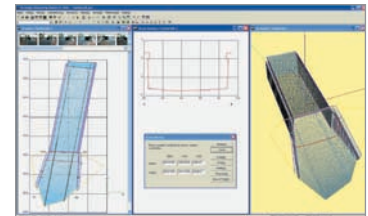
- **WLAN control of Imaging Station**
- **Generate true 3D models for measuring, mapping and interpretation**
- **Produce models from the GPT-7000i total station**
- **Calculate Volumes and Cross Sections (standard only)**
- **Stereopair photogrammetry (pro only)**

A Powerful Combination

ImageMaster software is available in three editions: IS, Standard and PRO. This powerful combination of functionality allows you to accomplish everything from Imaging Station wireless control of measurements to 3D module generation using stereopair photographs.

Advanced Features

In addition to the unique data capturing and 3D modeling functions, ImageMaster has several advanced features for manipulating and handling the models and model data. Advanced features include: calculation and display of model cross sections, calculation and display of contour lines, area calculations, distance measurements either point to point, TIN model generation, rendering models, ortho-images, and a variety of export formats (DXF, ASCII, VRML etc.).



Applications

Topcon's ImageMaster PRO has modeling, measurement, mapping, and interpretation functionality for a wide variety of applications:

- Close Range Photogrammetric Applications
- Aerial Photogrammetry
- Architecture
- Archeology
- Disaster Monitoring/Mapping
- Mining
- As-built Civil and Industrial Applications
- Accident Investigation
- 3D Modeling and Visualization Applications



ImageMaster Hardware Requirements

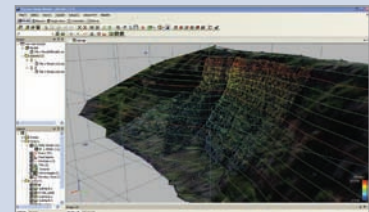
Digital Camera	Preferred minimum of 5 megapixel
Personal Computer	CPU Pentium 4, 2.0 GHz Memory 512 MB Graphical solution Open GL OS Windows® 98, ME, 2000, XP USB or printer port for hardware lock

Select from Three ImageMaster Editions

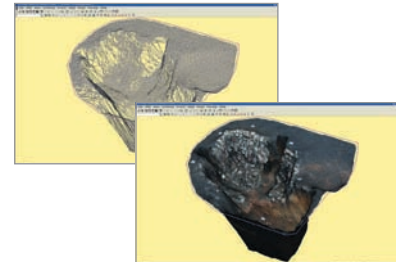
ImageMaster Editions	
ImageMaster IS	<p>ImageMaster IS compliments the Topcon Imaging Station (IS). The functionality includes WLAN control of the IS. Measurements can be taken as individual points or grid scan areas defined by user resolution. The advantage of this edition is the ability to have a live video feed over WLAN to the IS. Controlling the IS with a large color screen from a PC or laptop is revolutionary. An entire survey can be completed from the comfort of your vehicle or remotely via internet connection.</p> <p>The IS edition can collect points and point cloud points from the IS and prepare TINs with photo texturing. Points and surfaces can be used to measure distances and be exported to the Standard edition or DXF format for further analysis.</p>
ImageMaster Standard	<p>ImageMaster Standard offers full functionality of surveying tools such as polyline creation, contouring, cross sections, TIN generation and editing. Additional functions such as area and volume calculations, ortho-image, and field scan file processing make this module a powerful addition to any Imaging Station system. The only functionality not included in this edition is that of stereopair photogrammetry.</p>
ImageMaster PRO	<p>Includes all of the above features plus Topcon's advanced photogrammetry solution previously distributed as PI-3000 Photo Modeler software. ImageMaster PRO uses stereoscopy to create three-dimensional images. Stereoscopy combines two offset and overlapping images known as stereopairs, to create a stereomodel. Until recently, stereoscopes created the illusion of dimension. Today, stereoscopes combine images using digital algorithms, providing a digital, rotational image suitable for survey and engineering purposes.</p>



WLAN Laptop from the Car



Cliffside Scan and Texture Mapping



ImageMaster Software	
Part #	Description
60665	ImageMaster IS
60666	ImageMaster Standard
60667	ImageMaster PRO
60770	Upgrade Lite to Standard
60771	Upgrade Lite to Pro
60772	Upgrade Standard to Pro
60773	Upgrade PI-3000 to Pro

9-Series

Robotic Total Station System



- **X-TRAC 7 Technology**
- **Superior Quick-Lock and Tracking technology**
- **Advanced, long range reflectorless EDM technology**
- **Integrated interference free 2.4 GHz SpSp robotic data communications**
- **Full-color, graphical Windows® CE interface**

Advanced Robotic Technology

With a modern, cable-free design, the 9-Series offers the most advanced robotic technology available. The 9-Series robotic system features sophisticated technology unsurpassed in the industry. Topcon's one-touch Quick Lock feature that set the standard in robotic target acquisition has taken another step forward, with X-TRAC 7. A superior technology solution for strong tracking and quick re-acquisition in challenging environments.

Select the Instrument that Suits Your Needs

Available in 1, 3, and 5 second angle accuracies, you can select the instrument that best fits your requirements. The GTS-900A is prism required measurement technology. All GPT-9000A Series robotic systems offer reflectorless measurement superior to any other instrument available – capable of precision measurements at a mind-boggling 6,500 ft. (2,000m)!

Instrument Design

A backlit keyboard provides a smart user interface that combines efficiency and convenience. Standard rechargeable batteries power the entire Topcon instrument and field controller product lines. The waterproof, dustproof instrument design is ready to take the punishment that can be expected on the harshest job site conditions.

9-Series Specifications		9001A/901A	9003A/903A	9005A/905A
Angle Measurement				
Minimum Reading		0.5"/1" (0.1/0.5mgon)	1" / 5" (0.2/1mgon)	1" / 5" (0.2/1mgon)
Accuracy		1" (0.3mgon)	3" (1mgon)	5" (1.5mgon)
Distance Measurement				
Prism Mode	1 prism	9,840' (3,000m)		
Accuracy	Fine 0.2mm / 1mm	±(2mm+2ppmxD) m.s.e.		
NP Accuracy	Fine 0.2mm / 1mm	±(5mm) m.s.e.		
NP Long Mode Accuracy	Fine 1mm	±(10mm+10ppmxD) m.s.e.		

9-Series Instruments & Accessories

GPT-9000A Autotracking Series w/Radio

Part #	Description
60427	GPT-9001A 1" 3000M TOTAL STATION
60428	GPT-9003A 3" 3000M TOTAL STATION
60429	GPT-9005A 5" 3000M TOTAL STATION

GTS-900A Autotracking Series w/Radio

60424	GTS-901A 1" 3000M TOTAL STATION
60425	GTS-903A 3" 3000M TOTAL STATION
60426	GTS-905A 5" 3000M TOTAL STATION

RC-3 Remote Control

60430	RC-3
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9-Series Instrument & Robotic Accessories

60487	BT-65Q BATTERY (IS)
60565	BT-66Q BATTERY (RC-3)
60700	BC-30D (120V) DUAL CHARGER
60241	BC-30B (120V) SINGLE CHARGER
50056	POWER CABLE PC-21
60434	RS-1 RADIO MODEM
60702	A7R PRISM
60502	ON-BOARD TOPSURV FOR GTS 900A/GPT-9000A
60829	HEIGHT ADJUST PLUG 3
60722	MOUNT, GPS FOR A7 PRISM
60721	MOUNT, RC-3R SIDE
50048	OPEN CLAMP POLE BRACKET
60725	AMBICOM WIFI CF CARD
51341	SOLAR RETICLE 6
51344	SOLAR FILTER FLIP-UP 6
51340	DIAGONAL EYEPIECE 10
55334	TROUGH COMPASS 6



RC-3 Remote Control
Part # 60430



Mount, RC-3R Side
Part # 60721



A7R Prism
Part # 60702



RS-1 Radio Modem
Part # 60434



BT-65Q Battery
Part # 60487



BC-30D (120V) Dual Charger
Part # 60700



Mount, GPS for A7 Prism
Part # 60722



BC-30B (120V) Single Charger
Part # 60241

9-Series Field Solution Options

Field Controllers



FC-2500

- 624 MHz XScale processor
- 256 MB RAM, 2 GB ROM
- Add-on robotic radio design

See page 30 for more details.



FC-250

- 806 MHz Processor
- 256 MB DDR SDRAM, 1 GB Flash Memory (NAND)
- RS-1 Radio capable

See page 32 for more details.



FC-120

- 520 MHz Processor
- 64 MB SDRAM, available in 128 or 256 MB ROM
- Compact, rugged design

See page 34 for more details.

Field Software



TopSURV

- Large Graphical User Interface (GUI)
- Graphical Stakeout
- Map View data collection
- Fast job management and storage

See page 38 for more details.



Topcon Layout

- Intuitive field software supports manual total stations and robotics (optional)
- Custom built interface for contractors
- Easy layer management tools

See page 44 for more details.

Robotic Kits

Components, Communication Kits and Accessories



FC-2500 Add-on Robotic Radio Design



X-TRAC 7 Features Fast, Strong Tracking of a Prism



RC-4R Remote

Topcon has the Know-how to Design and Build the World's Best Robotic Systems

Robotic instrument technology and the significant performance advantages it can offer have changed the way topography and layout tasks are completed worldwide. Through Topcon's leadership and experience in optical instrumentation that spans more than 70 years, we have the know-how to design and build the very best Robotics systems available.

FC-2500 Add-on Robotic Radio Design

The FC-2500 has an add-on connection on the back of the unit to control a spread spectrum radio for robotics communication. Use this connector and an RS-1 to have a cablefree radio connection to Topcon robotic instruments.

Topcon X-TRAC 7 Robotic System

The X-TRAC 7 robotic system is available for all GTS-900, GPT-9000, and IS instrument systems. This affects the robotic tracking, quick-lock, radios, and data collector performance.

X-TRAC 7 Features:

- Fast, strong tracking of a prism even when exposed to other reflective objects.
- Fast and accurate turning of the instrument when performing a Quick Lock cycle.
- Automatic power regulation of the RC-3 Remote for High and Low.
- Convenient status message from the RC-3 Handle if user is not aiming the Quick Lock signal correctly.
- TopSURV support for these instrument enhancements.
- TopSURV live video support for IS systems.

All new systems from Topcon come with X-TRAC 7 standard.

RC-4 Remote Unit

The new RC-4 integrates the radio in with the remote for flexibility of use with many models of data collectors. Also the emitting beam was enhanced to dual laser diodes to double the width of the reception (+/-10°).

Robotic Kits

FC-250 Robotic Kit Part Numbers	
Part #	Description
60873	FC-250 Robotic Kit, RS-1, RC-3
<i>Included in Kit:</i>	
60832	FC-250 HARDWARE ONLY
60271	KIT, TOPSURV PRO RTS
59010	TP-10 WOOD EXT LEG
60434	RS-1 RADIO MODEM
60516	BRACKET FC-250 METAL
60218	ROBOTIC POLE, CARBON FIBER
60702	A7R PRISM (prism w RC mount)
60430	RC-3
60883	FC-250 Robotic Kit, Layout Package, RS-1, RC-3
<i>Included in Kit:</i>	
60832	FC-250 HARDWARE ONLY
99-090001-03	KIT, TOPCON LAYOUT ROBOTICS
59010	TP-10 WOOD EXT LEG
60434	RS-1 RADIO MODEM
60516	BRACKET FC-250 METAL
60218	ROBOTIC POLE, CARBON FIBER
60702	A7R PRISM (prism w RC mount)
60430	RC-3



RC-3 Remote Control
Part # 60430



RS-1 Radio Modem
Part # 60434



Bracket FC-250 Metal
Part # 60516



A7R Prism
Part # 60702

FC-2500 Robotic Kit Part Numbers	
Part #	Description
60758	FC-2500 Robotic Kit, RS-1, RC-3
<i>Included in Kit:</i>	
60746	FC-2500, HARDWARE ONLY
60434	RS-1 RADIO MODEM
60270	KIT, TOPSURV RTS
60430	RC-3 COMPLETE
60702	A7R PRISM (prism w RC mount)
60218	ROBOTIC POLE, CARBON FIBER
59010	TP-10 WOOD EXT LEG
60743	FC-2500 CRADLE
60742	FC-2500 POLE CLAMP
60747	FC-2500 Robotic Kit, RC-3
<i>Included in Kit:</i>	
60746	FC-2500 HARDWARE ONLY KIT
60270	KIT, TOPSURV RTS
60430	RC-3 COMPLETE
60702	A7R PRISM (prism w RC mount)
60218	ROBOTIC POLE, CARBON FIBER
59010	TP-10 WOOD EXT LEG
60743	FC-2500 CRADLE
60742	FC-2500 POLE CLAMP
60884	FC-2500 Robotic Kit, Layout, RS-1, RC-3
<i>Included in Kit:</i>	
60746	FC-2500 HARDWARE ONLY KIT
60434	RS-1 RADIO MODEM
99-090001-03	KIT, TOPCON LAYOUT ROBOTICS
60430	RC-3 COMPLETE
60702	A7R PRISM (prism w RC mount)
60218	ROBOTIC POLE, CARBON FIBER
59010	TP-10 WOOD EXT LEG
60743	FC-2500 CRADLE
60742	FC-2500 POLE CLAMP



TP-10 Wood Ext Leg
Part # 59010



FC-2500 Cradle
Part # 60743



Pole Clamp, 19mm to 38mm
Part # 60742

GPT-7500/GTS-750 Series

Advanced Standard and Non-prism Total Stations



- **World's Longest Range Reflectorless EDM (2000m) (GPT-7500)**
- **Backlit keypad and display**
- **USB Type A and USB mini slots**
- **Increased Battery Capacity (5000mAh)**
- **Advanced WinCE processor on-board**
- **New smaller, lighter design**

Advanced Features and Durable Construction

Topcon's reflectorless GPT-7500 and conventional GTS-750 Total Stations provide a lighter, faster survey solution for handling your biggest jobs. Enjoy the benefits of a large color touch screen and backlit keypads on both sides of the unit (1 & 3 second models only). All models come standard with a 400Mhz processor and Windows® CE operating system. The USB A, USB mini port, and Compact Flash port gives you plenty of storage space and upload/download options. There's even Point Guide LEDs that visually inform the rod man that he's online.

World's Longest Range Reflectorless EDM

The GPT-7500 provides the world's longest range reflectorless EDM: 6500+ ft. (2000m). Its reflectorless beam measures what you want to measure, even when shooting through obstacles such as fencing or tree branches. Take shots of areas that are difficult or impossible to access from a safe distance.

GPT-7500/GTS-750 Series		GTS-751	GTS-753	GTS-755	GPT-7501	GPT-7503	GPT-7505
Angle Measurement							
Accuracy		1", 3", 5"					
Compensation		Dual Axis					
Compensating Range		±6'					
Prism Mode Distant Measurement							
1 prism		3,000m	3,000m	2000m	3,000m		
Accuracy		±(2mm+2ppmxD) m.s.e.					
Non-Prism Mode Distance Measurement (GPT-7500 Series Only)					Normal Mode		Long Mode
Range (Kodak White)					1.5m - 250m		5.0m - 2000m
Accuracy:					±(5mm)		±(10mm+10ppmxD)
Fine					±(10mm)		±(20mm+10ppmxD)
Coarse					±(10mm)		±(100mm)
Tracking							
Computer Unit							
On-Board		Microsoft Windows® CE.NET 4.2					
Memory		64 MB					
RAM		2 MB (Flash ROM) + 128 MB (SD Card)					
ROM							
Physical Specifications							
Environmental and Operating Temp.		IP54(Based on the standard IEC60529), -20°C to +50°C (-4°F to +122°F)					

GPT-7500/GTS-750 Series Instruments & Accessories

GPT-7500 Series Total Stations	
Part #	Description
60557	GPT-7501 1" 3000M TOTAL STATION
60558	GPT-7503 3" 3000M TOTAL STATION
60559	GPT-7505 5" 2000M TOTAL STATION
GTS-750 Series Total Stations	
60554	GTS-751 1" 3000M TOTAL STATION
60555	GTS-753 3" 3000M TOTAL STATION
60556	GTS-755 5" 2000M TOTAL STATION
GPT-7500/GTS-750 Accessories	
60487	BT-65Q BATTERY
60241	BC-30B (120V) SINGLE CHARGER
60243	CABLE, F-25 USB
51340	DIAGONAL EYEPIECE 10
51341	SOLAR RETICLE 6
51344	SOLAR FILTER FLIP-UP 6
51700	UNIVERSAL BASE CHARGER W/O CAB
51701	CABLE-3 PIN STYLE GTS-800/600
51739	BATTERY PACK BT-50Q NIMH
60347	BC-27B BATT CHARGER W/110V PWR CBL
60829	HEIGHT ADJUST PLUG 3
55334	TROUGH COMPASS 6



BT-65Q Battery
Part # 60487



BC-30B (120V) Single Charger
Part # 60241



Solar Reticle 6
Part # 51341



Diagonal Eyepiece 10
Part # 51340



Cable-3 Pin Style GTS-800/600
Part # 51701



Solar Filter Flip-Up 6
Part # 51344

GPT-7500/GTS-750 Series Field Solution Options

Field Controllers		
 <p>FC-2500</p> <ul style="list-style-type: none"> • 624 MHz XScale processor • 256 MB RAM, 2 GB ROM • Add-on robotic radio design <p>See page 30 for more details.</p>	 <p>FC-250</p> <ul style="list-style-type: none"> • 806 MHz Processor • 256 MB DDR SDRAM, 1 GB Flash Memory (NAND) • RS-1 Radio capable <p>See page 32 for more details.</p>	 <p>FC-120</p> <ul style="list-style-type: none"> • 520 MHz Processor • 64 MB SDRAM, available in 128 or 256 MB ROM • Compact, rugged design <p>See page 34 for more details.</p>
Field Software		
 <p>TopSURV</p> <ul style="list-style-type: none"> • Large Graphical User Interface (GUI) • Graphical Stakeout • Map View data collection • Fast job management and storage <p>See page 38 for more details.</p>	 <p>Topcon Layout</p> <ul style="list-style-type: none"> • Intuitive field software supports manual total stations and robotics (optional) • Custom built interface for contractors • Easy layer management tools <p>See page 44 for more details.</p>	

GPT-3100W Series

Reflectorless Total Stations



- **Multi Pulse EDM Technology**
- **Long range prismless operation up to 1,150 ft (350m)**
- **Narrower reflectorless beam**
- **Bluetooth® wireless technology**

Surveying

Available in 2, 3, 5, 7 arc second accuracy and display resolution to 1", the GPT-3100W satisfies the need for a compact, traversable total station with surveying practice accuracies guaranteed.

Construction

Both accurate and rugged, the GPT-3100W Series is waterproof and dustproof design makes it perfect for the high demands of a construction site. This unit gives you the option of performing tasks with a single operator with the reflectorless EDM.

Forensics

Accuracy and reliability demands are met by the GPT-3100W Series for forensic mapping. The added ability to measure into a scene reflectorlessly offers a forensic professional the accuracy needed without disturbing the evidence by walking into the scene with a prism and prism pole.

GPT-3100W Series Specifications	GPT-3102W	GPT-3103W	GPT-3105W	GPT-3107W
Distance Measurement				
Measuring Range	(Target: Kodak White)			
Non-prism Mode	5 to 1,150 ft. (1.5 to 350m)			
Prism Mode: Condition 1* (1 prism)	9,900 ft. (3,000m)			
Measurement Accuracy	(Diffusing Surface), ±(3mm +2ppm x D) m.s.e.			
Non-prism Mode	±(2mm+2ppm x D) m.s.e. D: Measuring distance (mm)			
Prism Mode				
Angle Measurement				
Accuracy	2"	3"	5"	7"
Operating Time				
Including Distance Measurement	Bluetooth® Port: Approx. 4.2 hours, RS-232C Port: Approx. 5.0 hours			
Angle Measurement Only	Bluetooth® Port: Approx. 25 hours, RS-232C Port: Approx. 45 hours			
Others				
Bluetooth	Yes			
Protection Against Water and Dust	IP66 (with BT-52QA) (Based on the standard IEC60529)			
Ambient Temperature Range	-4°F to +122°F (-20°C to +50°C)			

*Condition 1: Sight haze with visibility about 12.5 miles (20km) moderate sunlight with light heat shimmer.

GPT-3100W Series Instruments & Accessories

GPT-3100W Series Total Stations	
Part #	Description
60550	GPT-3102W 2" 3000M TOTAL STATION
60551	GPT-3103W 3" 3000M TOTAL STATION
60552	GPT-3105W 5" 3000M TOTAL STATION
60553	GPT-3107W 7" 3000M TOTAL STATION
GPT-3100W Series Accessories	
60350	CABLE, BC-27 BAT CHARGER 110V
60351	CABLE, BC-27 BAT CHARGER 220V
51730	BT-52 QA NIMH BATTERY
60349	BC-27 BATT CHARGER W/O PWR CBL
51311	SOLAR RETICLE 7
51333	CARRYING HANDLE 19
51340	DIAGONAL EYEPIECE 10
51341	SOLAR RETICLE 6
51344	SOLAR FILTER FLIP-UP 6
51701	CABLE-3 PIN STYLE GTS-800/600
55502	TRIBRACH 20 W/O OPT PLUMMET
51726W	ON BOARD BATTERY BT-24QW
60347	BC-27B BATT CHARGER W/110V PWR CBL
60348	BC-27C BATT CHARGER W/220V PWR CBL
51755D	BATTERY CHARGER BC-20BR (120V)
51756D	BATTERY CHARGER BC-20CR (230V)
51769D	BATTERY CHARGER BC-19BR (120V)
51700	UNIVERSAL BASE CHARGER W/O CAB
51703	CABLE-2 PIN STYLE GTS-210/200
51704	CABLE-2 PIN GTS310/510/710/GPT
55334	TROUGH COMPASS 6



Diagonal Eyepiece 10
Part # 51340



Tribrach 20 w/o Opt Plummet
Part # 55502



BT-52 QA NIMH Battery
Part # 51730



Solar Filter Flip-Up 6
Part # 51344



Trough Compass 6
Part # 55334



BC-27 Battery Charger
w/o Power Cable
Part # 60349

GPT-3100W Series Field Solution Options

Field Controllers		
 <p>FC-2500</p> <ul style="list-style-type: none"> • 624 MHz XScale processor • 256 MB RAM, 2 GB ROM • Add-on robotic radio design <p>See page 30 for more details.</p>	 <p>FC-250</p> <ul style="list-style-type: none"> • 806 MHz Processor • 256 MB DDR SDRAM, 1 GB Flash Memory (NAND) • RS-1 Radio capable <p>See page 32 for more details.</p>	 <p>FC-120</p> <ul style="list-style-type: none"> • 520 MHz Processor • 64 MB SDRAM, available in 128 or 256 MB ROM • Compact, rugged design <p>See page 34 for more details.</p>
Field Software		
 <p>TopSURV</p> <ul style="list-style-type: none"> • Large Graphical User Interface (GUI) • Graphical Stakeout • Map View data collection • Fast job management and storage <p>See page 38 for more details.</p>	 <p>Topcon Layout</p> <ul style="list-style-type: none"> • Intuitive field software supports manual total stations and robotics (optional) • Custom built interface for contractors • Easy layer management tools <p>See page 44 for more details.</p>	

GPT-3000LW Series

Long Range Reflectorless Total Stations



- **4,000 ft (1200m) reflectorless range**
- **Power to accurately measure almost any surface within 1,150 ft (350m)**
- **Advanced EDM pinpoint accuracy for extreme measures**
- **Dual laser optics**
- **Visible laser pointer**

Long Range Measurements

With its revolutionary 4,000 ft. (1200m) reflectorless range, the GPT-3000LW sets a new standard for EDM range, delivering the power for difficult shots that others just can't measure up to! The Topcon GPT-3000LW Series measures nearly four times farther than other competitive total stations.

Measure Almost Any Surface within 1,150 ft. (350m)

The ability of the GPT-3000LW to measure long range is significant, but the real advantage of this technology is what this increased measurement power means at shorter distances. The Topcon GPT-3000LW outperforms all other reflectorless total stations when measuring to difficult targets such as hanging wires or dark asphalt.

GPT-3000LW Series Specifications		GPT-3002LW	GPT-3003LW	GPT-3005LW
Angle Measurement				
Angle Accuracy		2"	3"	5"
Compensation		Dual		
Distance Measurement				
Prism Mode				
Measurement Range (1 prism)		9,842 ft. (3,000m)		
Measurement Accuracy		±(3mm + 2ppm x D)		
Non-Prism Normal Mode				
Measurement Range (Kodak White)		5 ft. - 820 ft. (1.5m - 250m)		
Measurement Accuracy		82 ft. (25m): ±(5mm)		
0.2mm mode:		5 ft. ~ 82 ft. (1.5m ~ 25m): ±(10mm)		
1mm mode:				
Non-Prism Long Mode				
Measurement Range (Kodak White)		16.4 ft. - 4,000 ft. (5m - 1,200m)		
Measurement Accuracy		±(10mm + 10ppm x D)		
Power Specifications				
Operating Time		Single Battery		
Including EDM Measurement		3.3 hours		
Angle Measurement only		25 hours		
Physical Specifications				
Wireless Connection		Bluetooth® wireless technology		
Waterproof Protection and Temperature Range		IP66, -4°F to +122°F (-20°C to +50°C)		

GPT-3000LW Series Instruments & Accessories

GPT-3000LW Series Total Stations	
Part #	Description
60343	GPT-3002 LW 2" 3000M TOTAL STATION
60344	GPT-3003 LW 3" 3000M TOTAL STATION
60345	GPT-3005 LW 5" 3000M TOTAL STATION
GPT-3000LW Series Accessories	
60350	CABLE, BC-27 BAT CHARGER 110V
60351	CABLE, BC-27 BAT CHARGER 220V
51730	BT-52 QA NIMH BATTERY
60349	BC-27 BATT CHARGER W/O PWR CBL
51311	SOLAR RETICLE 7
51333	CARRYING HANDLE 19
51340	DIAGONAL EYEPIECE 10
51341	SOLAR RETICLE 6
51344	SOLAR FILTER FLIP-UP 6
51701	CABLE-3 PIN STYLE GTS-800/600
55502	TRIBRACH 20 W/O OPT PLUMMET
51726W	ON BOARD BATTERY BT-24QW
60347	BC-27B BATT CHARGER W/110V PWR CBL
60348	BC-27C BATT CHARGER W/220V PWR CBL
51755D	BATTERY CHARGER BC-20BR (120V)
51756D	BATTERY CHARGER BC-20CR (230V)
51769D	BATTERY CHARGER BC-19BR (120V)
51700	UNIVERSAL BASE CHARGER W/O CAB
51703	CABLE-2 PIN STYLE GTS-210/200
51704	CABLE-2 PIN GTS310/510/710/GPT
55334	TROUGH COMPASS 6



Diagonal Eyepiece 10
Part # 51340



Tribrach 20 w/o Opt Plummet
Part # 55502



BT-52 QA NIMH Battery
Part # 51730



Solar Filter Flip-Up 6
Part # 51344



Solar Reticle 6
Part # 51341



BC-27 Battery Charger
w/o Power Cable
Part # 60349

GPT-3000LW Series Field Solution Options

Field Controllers		
 <p>FC-2500</p> <ul style="list-style-type: none"> • 624 MHz XScale processor • 256 MB RAM, 2 GB ROM • Add-on robotic radio design <p>See page 30 for more details.</p>	 <p>FC-250</p> <ul style="list-style-type: none"> • 806 MHz Processor • 256 MB DDR SDRAM, 1 GB Flash Memory (NAND) • RS-1 Radio capable <p>See page 32 for more details.</p>	 <p>FC-120</p> <ul style="list-style-type: none"> • 520 MHz Processor • 64 MB SDRAM, available in 128 or 256 MB ROM • Compact, rugged design <p>See page 34 for more details.</p>
Field Software		
 <p>TopSURV</p> <ul style="list-style-type: none"> • Large Graphical User Interface (GUI) • Graphical Stakeout • Map View data collection • Fast job management and storage <p>See page 38 for more details.</p>	 <p>Topcon Layout</p> <ul style="list-style-type: none"> • Intuitive field software supports manual total stations and robotics (optional) • Custom built interface for contractors • Easy layer management tools <p>See page 44 for more details.</p>	

CTS-3000

Construction Total Station



- **Reflectorless Non Prism EDM**
- **Expanded numeric keyboard**
- **Extremely long battery life**
- **Integrated laser pointer**
- **Layout alignment guide lights**
- **Compact, rugged design**
- **RS232 port for download and off board field controllers**

High End Optical System Built for Construction

The CTS-3000 is the layout and measuring tool designed and built specifically for construction. Its expanded keyboard and on-board software allows construction professionals to check grade, topo, set points and perform any number of other layout tasks previously requiring a surveyor.

Built to work the way you do, the CTS-3000 comes standard with an RS232 port, perfect for use with Topcon's FC series field controllers, or with most third party field collection devices. And the CTS puts those inaccessible points within reach. Topcon's advanced reflectorless technology allows for prismless surface measurements up to 750ft. (250 meters) away. As with all Topcon instruments, the CTS is built to exacting standards, is waterproof and dustproof, and will provide years of productivity.

CTS-3000 Specifications

Measurement Range	
1 Prism	N/A, 3,000 meters
Mini Prism	6.6 - 4,920 ft, 2 - 1,500 meters
Pin Pole Prism	6.6 - 8,200 ft, 2 - 2,500 meters
Non-Prism Mode	N/A, 1.5 - 250 meters
Measuring Accuracy	
Prism Mode	$\pm(3\text{mm}+2\text{ppm})\text{m.s.e.}$, $\pm(10\text{mm}+2\text{ppmxD}^*)\text{m.s.e.}$ coarse
Non-Prism Mode	$\pm(5\text{mm})\text{m.s.e.}$ (1.5m~), $\pm(10\text{mm}+2\text{ppm})\text{m.s.e.}$ coarse
Angle Measurement	
Accuracy	5", 7"
Tilt Correction	
Type and Compensating Range	Dual Axis, $\pm 4'$
Environmental	
Dust/Water Protection and Operating Temp.	IP66 rating, -20° to $+50^{\circ}$ Celsius, -4° to $+122^{\circ}$ Fahrenheit
Maximum Operating Time at $+20^{\circ}\text{C}$ ($+68^{\circ}\text{F}$) (when fully recharged)	
Including distance measurement	Approx. 4.2 hours
Angle measurement only	Approx. 45 hours

CTS-3000 Instruments & Accessories

CTS-3000 Total Stations	
Part #	Description
60411	CTS-3005 5" 3000M TOTAL STATION
60412	CTS-3007 7" 3000M TOTAL STATION
CTS-3000 Accessories	
60350	CABLE, BC-27 BAT CHARGER 110V
60351	CABLE, BC-27 BAT CHARGER 220V
51730	BT-52 QA NIMH BATTERY
60349	BC-27 BATT CHARGER W/O PWR CBL
51311	SOLAR RETICLE 7
51333	CARRYING HANDLE 19
51340	DIAGONAL EYEPIECE 10
51341	SOLAR RETICLE 6
51344	SOLAR FILTER FLIP-UP 6
51701	CABLE-3 PIN STYLE GTS-800/600
55502	TRIBRACH 20 W/O OPT PLUMMET
51726W	ON BOARD BATTERY BT-24QW
60347	BC-27B BATT CHARGER W/110V PWR CBL
60348	BC-27C BATT CHARGER W/220V PWR CBL
51755D	BATTERY CHARGER BC-20BR (120V)
51756D	BATTERY CHARGER BC-20CR (230V)
51769D	BATTERY CHARGER BC-19BR (120V)
51700	UNIVERSAL BASE CHARGER W/O CAB
51703	CABLE-2 PIN STYLE GTS-210/200
51704	CABLE-2 PIN GTS310/510/710/GPT
55334	TROUGH COMPASS 6



Diagonal Eyepiece 10
Part # 51340



Tribrach 20 w/o Opt Plummet
Part # 55502



BT-52 QA NIMH Battery
Part # 51730



Solar Filter Flip-Up 6
Part # 51344



Trough Compass 6
Part # 55334



BC-27 Battery Charger
w/o Power Cable
Part # 60349

CTS-3000 Field Solution Options

Field Controllers		
 <p>FC-2500</p> <ul style="list-style-type: none"> • 624 MHz XScale processor • 256 MB RAM, 2 GB ROM • Add-on robotic radio design <p>See page 30 for more details.</p>	 <p>FC-250</p> <ul style="list-style-type: none"> • 806 MHz Processor • 256 MB DDR SDRAM, 1 GB Flash Memory (NAND) • RS-1 Radio capable <p>See page 32 for more details.</p>	 <p>FC-120</p> <ul style="list-style-type: none"> • 520 MHz Processor • 64 MB SDRAM, available in 128 or 256 MB ROM • Compact, rugged design <p>See page 34 for more details.</p>
Field Software		
 <p>TopSURV</p> <ul style="list-style-type: none"> • Large Graphical User Interface (GUI) • Graphical Stakeout • Map View data collection • Fast job management and storage <p>See page 38 for more details.</p>	 <p>Topcon Layout</p> <ul style="list-style-type: none"> • Intuitive field software supports manual total stations and robotics (optional) • Custom built interface for contractors • Easy layer management tools <p>See page 44 for more details.</p>	

GTS-230W Series

Wireless Total Stations



- **Wireless total station**
- **Large, easy-to-read screen**
- **Expanded keyboard for increased functionality**
- **"Point Guide Feature" to allow fast alignment in staking tasks**

World's First Wireless Total Station

Topcon's GTS-230W Series was the World's First electronic total stations to feature wireless operation. Each model in this versatile lineup can handle all surveying and construction total station needs at a remarkably low price. Four levels of angular accuracy are available to suit any application. And the rugged, waterproof/dustproof design, (IP-66), will stand up to the harshest construction site environment.

Loaded with Features

The GTS-230W Series is loaded with standard features including a long-life 10-hour NiMH battery, a "Point Guide Feature" to allow fast alignment in staking tasks, and a laser plummet to help make setup fast and easy. Even wireless operation is standard with the GTS-230W Series, so you don't have to worry about messy cables slowing you down!

On board data collection, handy application programs, and increased distance range and EDM accuracy complete this package that's been designed for ease of use to speed up your work while ensuring accuracy.

GTS-230W Series Specifications	GTS-233W	GTS-235W	GTS-236W	GTS-239W
Distance Measurement				
1 Prism	9,840 ft. (3,000m)	9,840 ft. (3,000m)	9,840 ft. (3,000m)	6,560 ft. (2,000m)
Accuracy	±(2mm+2ppmxD)m.s.e.	±(2mm+2ppmxD)m.s.e.	±(2mm+2ppmxD)m.s.e.	±(3mm+3ppmxD)m.s.e.
Angle Measurement				
Accuracy	3"	5"	6"	9"
Tilt Correction				
Tilt Sensor	Dual Axis	Dual Axis	Dual Axis	Single Axis
Operating Time				
Including Distance Measurement	10h (Bluetooth On: 8h)			
Angle Measurement Only	45h (Bluetooth On: 25h)			
Others				
Bluetooth® wireless technology	Yes			
Protection Against Water and Dust	IP66			
Ambient Temperature Range	-4°F to +122°F (-20°C to +50°C)			
Plummet	Laser (optical plummet optional)			

GTS-230W Series Instruments & Accessories

GTS-230W Total Stations	
Part #	Description
60193	GTS-233W 3" 3000M TOTAL STATION
60194	GTS-235W 5" 3000M TOTAL STATION
60195	GTS-236W 6" 3000M TOTAL STATION
60196	GTS-239W 9" 2000M TOTAL STATION
GTS-230W Accessories	
60351	CABLE, BC-27 BAT CHARGER 220V
51730	BT-52 QA NIMH BATTERY
60347	BC-27B BATT CHARGER W/110V PWR CBL
60349	BC-27 BATT CHARGER W/O PWR CBL
55502	TRIBRACH 20 W/O OPT PLUMMET
51107	DK-7 KEYBOARD (GTS-210 & 310)
51311	SOLAR RETICLE 7
51333	CARRYING HANDLE 19
51340	DIAGONAL EYEPiece 10
51341	SOLAR RETICLE 6
51344	SOLAR FILTER FLIP-UP 6
51701	CABLE-3 PIN STYLE GTS-800/600
51703	CABLE-2 PIN STYLE GTS-210/200
51726W	ON BOARD BATTERY BT-24QW
60348	BC-27C BATT CHARGER W/220V PWR CBL
51755D	BATTERY CHARGER BC-20BR (120V)
51756D	BATTERY CHARGER BC-20CR (230V)
51769D	BATTERY CHARGER BC-19BR (120V)
51700	UNIVERSAL BASE CHARGER W/O CAB
51703	CABLE-2 PIN STYLE GTS-210/200
51704	CABLE-2 PIN GTS310/510/710/GPT
55334	TROUGH COMPASS 6



Diagonal Eyepiece 10
Part # 51340



Tribrach 20 w/o Opt Plummet
Part # 55502



BT-52 QA NIMH Battery
Part # 51730



Solar Filter Flip-Up 6
Part # 51344



Trough Compass 6
Part # 55334



BC-27 Battery Charger
w/o Power Cable
Part # 60349

GTS-230W Series Field Solution Options

Field Controllers		
 <p>FC-2500</p> <ul style="list-style-type: none"> • 624 MHz XScale processor • 256 MB RAM, 2 GB ROM • Add-on robotic radio design <p>See page 30 for more details.</p>	 <p>FC-250</p> <ul style="list-style-type: none"> • 806 MHz Processor • 256 MB DDR SDRAM, 1 GB Flash Memory (NAND) • RS-1 Radio capable <p>See page 32 for more details.</p>	 <p>FC-120</p> <ul style="list-style-type: none"> • 520 MHz Processor • 64 MB SDRAM, available in 128 or 256 MB ROM • Compact, rugged design <p>See page 34 for more details.</p>
Field Software		
 <p>TopSURV</p> <ul style="list-style-type: none"> • Large Graphical User Interface (GUI) • Graphical Stakeout • Map View data collection • Fast job management and storage <p>See page 38 for more details.</p>	 <p>Topcon Layout</p> <ul style="list-style-type: none"> • Intuitive field software supports manual total stations and robotics (optional) • Custom built interface for contractors • Easy layer management tools <p>See page 44 for more details.</p>	

GTS-100N Series

Construction Total Stations



- **Economical, value-priced measuring solution**
- **Rugged, durable, water resistant design**
- **Two accuracies to choose from: 2" & 5"**
- **Expanded, full numeric keypad**
- **On-board programs & 24,000 point data storage**
- **Ideal as a construction stakeout total station**
- **Perfect when combined with FC field controller and software**

Construction

Construction professionals are looking for ways to do more of their own layout tasks simply and easily, removing the aggravation of relying on others. That's why Topcon introduced the GTS-100N. Featuring an expanded, full numeric keypad and intuitive on-board software, contractors and grade setters can re-set stakes, check grade, topo, and perform basic layout. Use the on-board software or any of Topcon's field controllers running one of our software suites perfectly tailored to your tasks.

Forensics

Accuracy and reliability of accident and crime scene investigation information is paramount. In many cases the pressures of gathering information quickly and returning the area to normal use is important, especially in accident situations on busy streets and roadways. With Topcon's GTS-100N you're assured of being able to do your job in safety. The GTS-100N is packaged with everything you need, and its ease of operation is second to none. Set-up the instrument, record your points on the unit or using any one of Topcon's Field Controllers, and pack up. It's that simple.

The GTS-100N is built for operation in the most rugged of conditions. Water resistant and dustproof, it will keep operating at maximum efficiency when other less durable instruments fail.

GTS-100N Series Specifications

Distance Measurement

1 Prism	6500 ft. (2,000m)
Accuracy	±(2mm + 2ppm x D)m.s.e.

Electronic Angle Measurement

Accuracy	GTS-102N: 2" (0.6mgon), GTS-105N: 5" (1.5mgon)
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Tilt Correction

Tilt Sensor	Single Axis
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Battery Life

Angle & Distance Measurement	9h
Angle Measurement Only	40h

Others

Bluetooth® wireless technology	No
Environmental Protection	IP54 - Water Resistant

GTS-100N Series Instruments & Accessories

GTS-100N Series Total Stations	
Part #	Description
60535	GTS-102N 2" 2000M TOTAL STATION
60536	GTS-105N 5" 2000M TOTAL STATION
GTS-100N Accessories	
60537	BT-G1
60538	BC-G1B (120V)
60539	BC-G1C (230V)
51340	DIAGONAL EYEPIECE 10
51341	SOLAR RETICLE 6
51344	SOLAR FILTER FLIP-UP 6
55334	TROUGH COMPASS 6



BT-G1
Part # 60537



BC-G1B (120V)
Part # 60538



Diagonal Eyepiece 10
Part # 51340



Solar Reticle 6
Part # 51341



Solar Filter Flip-Up 6
Part # 51344



Trough Compass 6
Part # 55334

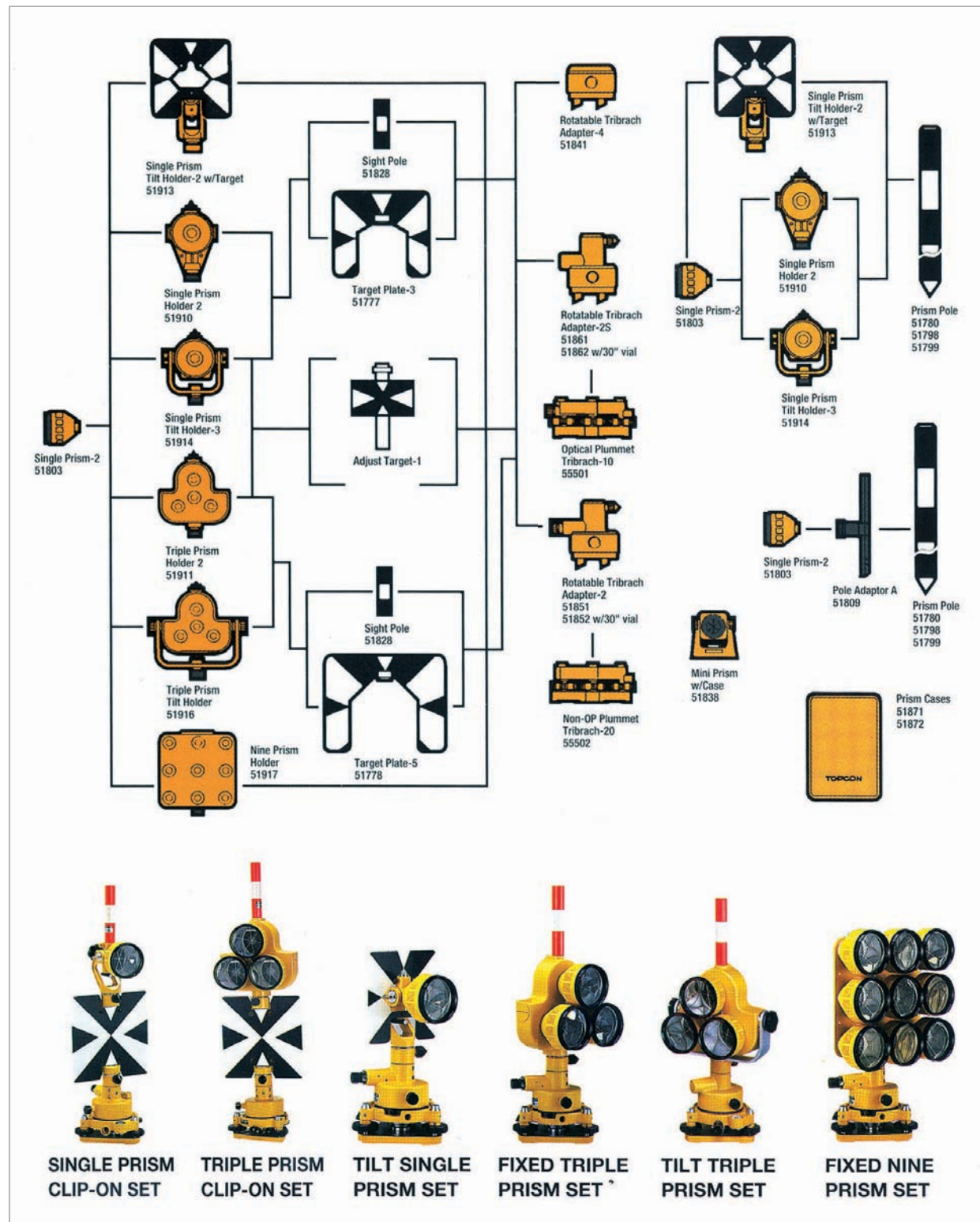
GTS-100N Series Field Solution Options

Field Controllers		
 <p>FC-2500</p> <ul style="list-style-type: none"> • 624 MHz XScale processor • 256 MB RAM, 2 GB ROM • Add-on robotic radio design <p>See page 30 for more details.</p>	 <p>FC-250</p> <ul style="list-style-type: none"> • 806 MHz Processor • 256 MB DDR SDRAM, 1 GB Flash Memory (NAND) • RS-1 Radio capable <p>See page 32 for more details.</p>	 <p>FC-120</p> <ul style="list-style-type: none"> • 520 MHz Processor • 64 MB SDRAM, available in 128 or 256 MB ROM • Compact, rugged design <p>See page 34 for more details.</p>
Field Software		
 <p>TopSURV</p> <ul style="list-style-type: none"> • Large Graphical User Interface (GUI) • Graphical Stakeout • Map View data collection • Fast job management and storage <p>See page 38 for more details.</p>	 <p>Topcon Layout</p> <ul style="list-style-type: none"> • Intuitive field software supports manual total stations and robotics (optional) • Custom built interface for contractors • Easy layer management tools <p>See page 44 for more details.</p>	

Total Station Accessories

Prisms, Prism Poles, Tribrachs and Tripods

Reflector System



Total Station Accessories

Prisms, Prism Cases and Adapters	
Part #	Description
51803	PRISM 2
51920K	SINGLE PRISM COMPLETE -2-1/2"
51921K	TRIPLE PRISM COMPLETE
60702	A7R PRISM
51910	SINGLE PRISM HOLDER 2-2 1/2
51911	TRIPLE PRISM HOLDER, MODEL-2
51912	SINGLE TILT HLDR W/TARGET
51912K	SINGLE TLT PRISM ASSY W/TARGET
51913	SNGL TILT HOLDER 2 W/TARGET
51914	SNGL TILT HOLDER MODEL - 3
51915	SNGL TILT HOLDER W/TARGET#6403
51915K	SNGL TILT COMP W/51915, 51803
51916	TRIPLE TILTING HOLDER
51917	NINE PRISM HOLDER
51918	SNGL TILT HOLDER W/TARGET#6423
51918K	SINGLE TILT HOLDER W/PRISM PKG
51940	PLUG ADAPTER
51941	THREAD ADAPTER B
51942	PLUG ADAPTER 2
51949	PRISM SPACER
51828	SIGHT POLE
60722	MOUNT, GPS FOR A7 PRISM
60721	MOUNT, RC-3R SIDE
50048	OPEN CLAMP POLE BRACKET
51832	MINI PRISM W/TARGET HOLDR ONLY
51837	MINI PRISM CASE
51838	MINI PRISM
51772	TARGET PLATE MODEL - 2
51777	TARGET MODEL 3/1P
51778	TARGET MODEL 5/3P
51871	PRISM CASE - HARD
51872	PRISM UNIT CASE 3
51809	POLE ADAPTER A

Prism Poles and Range Poles	
Part #	Description
51773	8'(2.5M)QK REL PRISM POLE .01'
51775	8'(2.5M)QK REL PRISM POLE .05'
51776	12'(3.7M) QR PRISM POLE .05'
51780	8' GRAD. ADJUST PRISM
51795	8'(2.5M) SURLOC PRISM POLE.01'
51796	12'(3.7M)SURLOC PRISM POLE.01'
51797	15'-ONLY SURLOC PRISM POLE.01'
51798	12'(3.7)COMP LK PRISM POLE.05'
51799	8'(2.5M)COMP LK PRISM POLE.01'
56273	EXTRA POINT FOR RANGE POLE
56275	REGULAR TOPO SHOE
56276	LARGE TOPO SHOE
56270	12' RANGE POLE 3-4' SECT
56272	EXTRA 4' SECTION
56271	8' RANGE POLE 2-4' SECT
51779	PRISM POLE BIPOD 3/4"-1 1/4"
56200	ROD LEVEL 18.00
51781	QUICK REL. PRISM POLE TRIPOD
51790	8' COMPOSOLITE PRISM POLE
51791	12' COMPOSOLITE PRISM POLE

Tribrachs and Tribrach Accessories	
Part #	Description
55501	TRIBRACH W/OPTICAL PLUMMET
55502	TRIBRACH 20 W/O OPT PLUMMET
60063	TRIBRACH 5
60178	TRIBRACH 5 W/OPTICAL PLUMMET
22-006008-01	TRIBRACH
51841	ROTATABLE TRIBRACH ADAP MODEL 4
51842	ROT. TRIB. ADAPT.#5 ZEISS/WILD
51851	TRIBRACH ADAPTER MODEL - 2
51852	TRIBRACH ADAPTER 2/30" VIAL
51861	TRIBRACH ADAPTER MODEL - S2
51862	TRIBRACH ADAPTER S2 W/VIAL 30"
22-006009-01	TRIBRACH ADAPTER
60367	OPTICAL PLUMMET KIT
All tribrachs are sold without carrying case. Please order case separately, if required.	

Tripods	
Part #	Description
Wood Tripods	
59005	TP-5 WOODEN HD OR TRIPOD-22513
59010	TP-10 WOOD EXT LEG
59073	TP-73 QR WOOD TRIPOD W/PVC
Aluminum Tripods	
59071	TP-71 QR ALUM.TRIPOD-MED DUTY
59101	TP-100D DOME ALUM EXT LEG TRIP
59111	TP-110D DOME HVY DUTY ALUM TRI
59110	TP-110 HVY DUTY ALUM EXT TRIPO
57032	TRIPOD TP-100 EXT LEG 5/8-11QR



TP-73 QR Wood Tripod w/ PVC
Part # 59073



TP-5 Wooden Heavy Duty Tripod
Part # 59005



TP-110D Dome Heavy Duty
Aluminum Tripod
Part # 59111



TP-10 Wood Ext Leg
Part # 59010

DT-200/DT-200L Series

The Industry's Most Advanced Digital Theodolite



- **Optics centered laser for verifiable accuracy – up to 165 ft. (50m) away (DT-200L only)**
- **Extremely low power consumption– 140 hrs of operation from 4 AA batteries (w/o laser)**
- **Waterproof and dustproof**
- **Vertical angle correction provides ± 3 minutes accuracy**
- **RS232C data I/O port**

Waterproof and Dustproof

Get the work done, even in less than perfect conditions. All DT-200/DT-200L Series instruments are rated to IP66, standing up to extremely wet or dusty conditions. And each telescope is gas charged to further avoid moisture intrusion and limit or eliminate lens fogging.

Laser Accurate (DT-200L Series only)

Topcon's World Leading laser technology is incorporated in to the DT-200L Series to aid in fast, confident alignment. The 633nm beam is emitted directly from the aperture, but does not impede viewing; in fact, it's not even visible when sighting through the lens. (Class II laser beam)

Simple Operation

Each DT-200 provides large, high-contrast, back-lit LCD's on both sides of the instrument. And the five button interface panel is so simple to use your crew won't require any special training to put your DT-200 to use day-in and day-out. (DT-209/209L: single side display)

Fast, Reliable Data Gathering (DT-205/205L)

Eliminate the notebook, pen, and hassle of pages of note taking. Easily connect the DT-200/DT-200L Series to a Field Controller or a laptop computer for continuous download of angle measurements as they are made.

DT-200/DT-200L Series Specifications	DT-205	DT-207	DT-209	DT-205L	DT-207L	DT-209L
Angle Measurement Accuracy	5"	7"	9"	5"	7"	9"
Telescope Magnification	30x	30x	26x	30x	30x	26x
Laser Pointer Method	N/A	N/A	N/A	Focusing	Focusing	Focusing
Display Unit	2 sides	2 sides	1 side	2 sides	2 sides	1 side
Compensator						
Tilt Sensor	Vertical	N/A	N/A	Vertical	N/A	N/A
Compensating Range	$\pm 3'$	N/A	N/A	$\pm 3'$	N/A	N/A
Operating Temperature	-68°F ~ +122°F (-20°C ~ +50°C)					

DT-200/DT-200L Series Instruments & Accessories

DT-200/DT-200L Digital Theodolite Packages	
Part #	Description
60212	DT-205 DIGITAL THEODOLITE
60213	DT-207 DIGITAL THEODOLITE
60214	DT-209 DIGITAL THEODOLITE
60215	DT-205L DIGITAL THEODOLITE
60216	DT-207L DIGITAL THEODOLITE
60217	DT-209L DIGITAL THEODOLITE
DT-200/DT-200L Accessories	
51954	CARRY HANDLE 17 FOR DT-100'S
53331	DIAGONAL EYEPiece 13
53345	BATT.PACK BC-26B F.DT-100 SERI
53346	BATT.PACK BC-26C F.DT-100 SERI
55302	DIAGONAL EYEPiece AT-G
55323	TROUGH COMPASS-5
53336	ON BOARD BATTERY/DT-30
53337	AA SIZE BATTERY HOLDER DB-12
53338	AA BATT PK HLD R/DT-100-DB-35
53343	BATTERY CHARGER BC14B
51952	CARRYING HDLE AG W/O ADAP ORNG
55308	DIAGONAL EYEPiece 2
55310	NIGHT ILLUMINATOR CLIP ON
55313	TROUGH COMPASS
55333	TROUGH COMPASS II
55334	TROUGH COMPASS 6
55318	TRAVERSE TARGET W/ADAPTER
55319	TRAVERSE TARGET ONLY
53310	SOLAR RETICLE: DT-10/20
53376	BC-16 QUICK CHGR/ETL-1, DT-30

* The following serial #s and above require 53331 for a diagonal eyepiece: (DT-101) Ser.#0339, (DT-102) Ser.#0464, (DT-103) Ser.#0750, (DT-104) Ser.#4521.

All others require diagonal eyepiece #55302. ALL "L" series of the DT-100 series require #53331.



Diagonal Eyepiece 13
Part # 53331



AA Batt Pk Hldr/DT-100-DB-35
Part # 53338



Trough Compass-5
Part # 55323



Trough Compass 6
Part # 55334



The Ultimate in Continuous Operation

The DT-200/DT-200L Series provides up to 140+ hours of operation in Angle Measurement mode on 4AA batteries, better than any other model! And when it is time to change batteries, it's as easy as snapping out the old ones and snapping in the new. Even when using the laser, power consumption is extremely low providing 80 hours of continuous operation.

AT-B Series

High Accuracy, High Value Auto Levels



- **Tightly sealed against water, humidity and dust**
- **Quick setup and easy sighting**
- **Superior durability against vibration and shock**

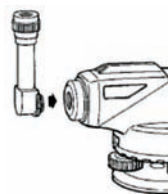
World-Proven, Time-Tested Technologies Ensure the Highest Precision and Reliability for All Leveling Applications

The AT-B2, AT-B3 and AT-B4 automatic levels feature further enhanced reliability under all environmental conditions. Tough and compact bodies are more tightly sealed against water, humidity and dust, fully resistant to driving rain and splashing water from all directions (IPX6). Topcon's AT-B series levels provide quick setup, easy sighting, and superior durability against vibration and shock, ensuring the increased productivity over an extra-long period of time.

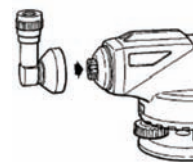
AT-B Series Specifications	AT-B2	AT-B3	AT-B4
Objective Lens Diameter	42 mm	36 mm	32 mm
Magnification	32x	28x	24x
Accuracy 1 km Double Level Run	+/- 0.7 mm	+/- 1.5 mm	+/- 2.0 mm
Coarse Sighting	Peep sight	Peep sight	Gun sight
Weight	4.08lbs (1.85kg)	3.75lbs (1.7kg)	3.75lbs (1.7kg)
Water Protection	IPX6	IPX6	IPX6

AT-B Series Instruments & Accessories

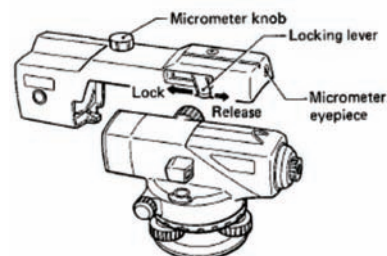
AT-B Series	
Part #	Description
60907	AT-B2 32x Auto Level w/horizontal circle
60908	AT-B3 28x Auto Level w/horizontal circle
60909	AT-B4 24x Auto Level w/horizontal circle
AT-B Accessories	
60910	LA8 Illumination Pack for AT-B2
60911	OM5 Optical Micrometer for AT-B2
60912	EL5 40x Eyepiece for AT-B2
60913	DE16 Diagonal Eyepiece for AT-B2
60914	DE22 Diagonal Eyepiece for AT-B3/B4



*DE16 Diagonal
Eyepiece for AT-B2
Part # 60913*



*DE22 Diagonal
Eyepiece for AT-B3/B4
Part # 60914*



*OM5 Optical
Micrometer for AT-B2
Part # 60911*

DL-500 Series

Electronic Digital Levels



- **One button triggers measurement and data storage**
- **0.6mm/0.8mm height accuracy**
- **Advanced RAB code technology**
- **Pre-installed measurement programs**
- **Height difference measurement**
- **Inverse staff reading for ceiling height**
- **Internal memory**

World's First "Wave-and-Read" Technology

Topcon's DL-500 Series digital levels maximize work efficiency and minimize human errors, providing consistent measurement precision and speed regardless of the operator's skill level.

Incorporating cutting-edge Random-Bidirectional (RAB) coding technology and optimum digital processing algorithm, the DL-500 provides exceptional measurement accuracy, stability, and speed, under a variety of environmental conditions. Even when the staff surface is partially shaded, or in dim lighting conditions as low as 20 lux, one single button triggers measurement and the DL-500 instantly shows reliable results.

The world's first "Wave-and-Read" technology provides an additional survey style option that allows a rod person to wave the staff back and forth, instead of keeping the staff plumb.

Pre-installed measurement programs assist various leveling tasks and accompanied calculations. Internal memory stores the valuable data which can be directly transferred to a computer, eliminating human errors.

DL-500 Series Specifications		DL-502	DL-503
Telescope			
Magnification		32X	28X
Objective Aperture		45mm (1.78 in.)	36mm (1.42 in.)
Resolving Power		3"	3.5"
Field of View		1°20"	
Minimum Focus		1.5m (5.0 ft.)	
Image		Erect	
Stadia Ratio		100	
Compensator			
Type		Pendulum compensator with magnetic damping system	
Working Range		±15'	
Height Measurement			
Accuracy (standard deviation for 1km double run leveling)			
Electronic Reading	Invar Staff	0.6mm	0.8mm
	Fiberglass Staff	1.0mm	1.5mm
Optical Reading		1.0mm	2.0mm

DL-500 Series Instruments & Accessories

DL-500 Series Instruments	
Part #	Description
60891	DL-502 Digital Level
60892	DL-503 Digital Level
DL-500 Series Accessories	
60893	INVAR STAFF BIS30 – 3 meter
60894	INVAR STAFF BIS20 – 2 meter
60895	FIBERGLASS STAFF – 5 meter (m), 4 sections
60896	FIBERGLASS STAFF – 16 feet (Ft.), 4 sections
60897	FIBERGLASS STAFF – 4 meter (m), 3 sections
60898	ALUMINUM STAFF – 5 meter Collapsible
60899	BUBBLE FOR FIBERGLASS STAFF GS20L
60900	BUBBLE FOR FIBERGLASS STAFF GS60L
60901	BDC46B LITHIUM ION BATTERY
70368	CDC68 Charger & power cable with flat pin





*BDC46B Lithium Ion Battery
Part # 60901*



*CDC68 Charger &
Power Cable w/ flat pin
Part # 70368*



*Bubble for Fiberglass Staff
GS20L
Part # 60899*


Fiberglass Staff		
	60897	60896* 60895
Length	4m	5m
Weight	5.3 lbs (2.4kg)	6.6 lbs (3.0kg)
Number of Sections	3	4
Rear Graduation	Metric*	

*60896 has 'feet/10th/100th' graduations.

*Fiberglass Staff - 4 meter, 3 sections
Part # 60897*

*Fiberglass Staff - 16 feet, 4 sections
Part # 60896*

*Fiberglass Staff - 5 meter, 4 sections
Part # 60895*

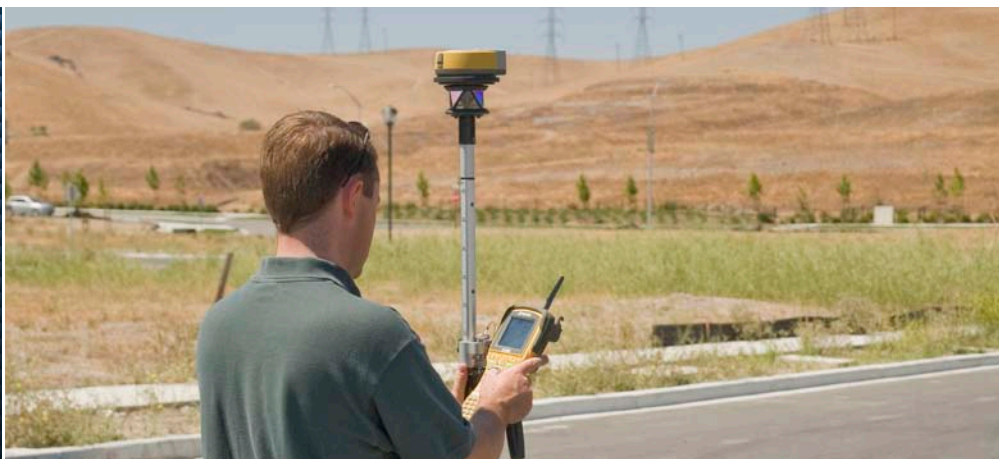


Aluminum Staff	
	60898
Length	5m
Weight	4.2 lbs (1.9kg)
Number of Sections	5 (telescopic)
Rear Graduation	Metric

*Aluminum Staff - 5 meter Collapsible
Part # 60898*

FC-2500

Full-featured Keyboard, Rugged, Alphanumeric Field Controller



- **624 MHz XScale processor**
- **256 MB RAM, 2 GB ROM**
- **Add-on robotic radio design**
- **55 key alphanumeric keyboard, plus joystick**
- **8 way directional arrow and enter key**
- **Easy access USB flash drive**
- **Accessible, rechargeable and hot swappable batteries**

624MHz XScale Processor with Windows® CE.NET 5.0 Operating System

Windows CE.NET operating system provides a modern operating environment and added expandability with other application software. The fast 624MHz processor leads in performance and reliability.

Built-in 5 Megapixel Camera

That's right, a full 5.17 megapixel camera with auto focus picture taking ability. That is why we built in 2GB of RAM. The camera has an auto-focus function and a flash illumination.

Extra Memory

The FC-2500 is loaded with all the memory you should need. Primary program ram is 256MB. In addition, it includes 2GB Flash storage memory. We want you to use the camera and know those file sizes can add up fast.

Bluetooth® and WiFi

Bluetooth and WiFi are standard. We built these into the standard unit. We provide a way to turn them off as well to conserve battery power when you do not need WiFi or Bluetooth.

FC-2500 Specifications

General Specifications

Processor Speed	624 MHz
Operating System	CE.NET 5.0
Memory	256 MB SDRAM, 2 GB System Flash
Interface	RS-232C (D-Sub 9pin), Mini USB 2.0 A/B, USB OTG Host and Client
Bluetooth® wireless technology	Bluetooth 1.2 Class II
WiFi	802.11 b/g
Water/Dust Resistance	IP67
Operating Temperature	-4°F to +122°F (-20°C to +50°C)
Shock Resistance	4ft all faces, per MIL-STD 810F Method 516.5IV
Operating Time	42 hours, Configuration Dependant
Camera Specifications: Rugged True-Camera-System	
5.17 Megapixel Color CMOS Sensor	5.17 Megapixel (4MP Processed) Auto-focus, Shutter, Aperture and Illumination

FC-2500 Hardware and Accessories

FC-2500 w/ 256 MB Hardware/ Software Kits	
Part #	Description
60746	KIT, FC-2500
60749	KIT, FC-2500 TOPSURV
60750	KIT, FC-2500 TOPSURV PRO
60751	KIT, FC-2500 TOPSURV ROBOTICS
60752	KIT, FC-2500, TOPSURV PRO ROBOTICS
60753	KIT-FC-2500, TOPSURV GPS+
60754	KIT, FC-2500 TOPSURV PRO GPS+
60755	KIT, FC-2500 TOPSURV COMPLETE
FC-2500 Robotic Kits	
60758	KIT, FC-2500, ROBOTIC RADIO, RC-3
60747	KIT, FC-2500, ROBOTIC OPTICAL COMM
FC-2500 Accessories	
64837-90060	SOFT CASE, FC-1000
64852-10120	STYLUS PEN FC-200
60565	BT-66Q BATTERY
60815	BATTERY CHARGER, FC-2500, 12V 3A
22-060002-01	CABLE, BATTERY CHARGER, USA
60621	CABLE, USB FLASH
60630	CABLE, USB DOWNLOAD
60625	SCREEN PROTECTORS (5)
60742	POLE CLAMP, 19MM TO 38MM
60743	CRADLE, FC-2500
60434	RS-1 Radio Modem



*Battery Charger, FC-2500,
12V 3A
Part # 60815*



*BT-66Q Battery
Part # 60565*



*Cable, USB Download
Part # 60630*



*Cable, USB Flash
Part # 60621*





*Cradle, FC-2500
Part # 60743*



*Pole Clamp, 19mm to 38mm
Part # 60742*

FC-2500 Field Software Options

Field Software	
 <p>TopSURV</p> <ul style="list-style-type: none"> • Large Graphical User Interface (GUI) • Graphical Stakeout • Map View data collection • Fast job management and storage <p><i>See page 38 for more details.</i></p>	 <p>Topcon Layout</p> <ul style="list-style-type: none"> • Intuitive field software supports manual total stations and robotics (optional) • Custom built interface for contractors • Easy layer management tools <p><i>See page 44 for more details.</i></p>

FC-250

Windows Mobile® 6.5 Field Controller



- **806MHz Processor**
- **Windows Mobile 6.5 operating system**
- **RS-1 Radio capable**
- **Compact, ruggedized design**
- **Easy access Compact Flash and SD Media card slots deliver memory expansion and connectivity options**
- **Built-in Bluetooth® wireless technology and WiFi**
- **Removable Li-ion batteries**
- **Ultra-bright, TFT, color touch screen display**

Compact, Ruggedized Design

If you are looking for a compact controller that provides big-time results, look no further than Topcon's FC-250. The FC-250 field controller incorporates the graphical Windows Mobile® 6.5 operating system on a crisp, bright, color touch screen display that makes your field data come alive. This powerful operating system, combined with the versatility of dual removable media for data storage and transfer; the easy-access, long-life rechargeable battery; and the compact design that is small on size, but not in performance, makes the FC-250 the perfect field controller for any job.

Easy Access Compact Flash and SD Media Card Slots

Expandability is important to the data collection professional. Extra memory cards can be placed into the protected card slots easily. No tools or extra process needed to access these card slots. Utilize the SD or CF card for data transfer and exchange with other devices.

Removable Li-ion Batteries

The removable battery allows for quick replacement while in the field. A small, yet powerful battery can be charged externally as a second backup battery.

Built-in Bluetooth and WiFi

The FC-250 has built-in Bluetooth wireless technology and WiFi. Both the Bluetooth and WiFi components are hardwired inside the device. That leaves the CF card slot open and available for other CF devices.

FC-250 Specifications	
Processor Speed	806MHz
Operating System	Microsoft Windows Mobile 6.5
Memory	DDR SDRAM 256MB, Flash Memory 1GB (NAND)
Bluetooth® Capable	Yes
Wireless LAN	Yes (802.11b/g)
Environmental	IP-66
Operating Temperature	-4°F to +122°F (-20°C to +50°C)
Operation (main battery)	No less than 10 hours without communications No less than 8 hours with Bluetooth No less than 6 hours with WLAN

FC-250 Hardware and Accessories

FC-250 w/ 256 MB Hardware/ Software Kits	
Part #	Description
60832	FC-250 Hardware Only
60833	FC-250,TopSURV BASIC (TS & GIS)
60834	FC-250,TopSURV PRO (BASIC & RD)
60835	FC-250,TopSURV RTS (BASIC & RTS)
60836	FC-250,TopSURV PRO RTS (BASIC, RD & RTS)
60837	FC-250,TopSURV GPS+ (BASIC & GPS)
60838	FC-250,TopSURV RTS & GPS+ (BASIC, RTS, & GPS)
60839	FC-250,TopSURV PRO GPS+ (BASIC, RD & GPS)
60840	FC-250,TopSURV COMPLETE (BASIC, RD, RTS, GPS)
60841	FC-250,TopSURV mmGPS+ (BASIC, GPS, & MM)
60842	FC-250,TopSURV mmPRO (BASIC, RD, GPS, & MM)
60843	FC-250,TopSURV mmCOMPLETE (All)
FC-250 Robotic Kits	
60873	KIT, FC-250 ROBOTIC, RS-1, RC-3
60883	FC-250 RBT Kit, Layout Package, RS-1, RC-3
FC-250 Accessories	
60434	RS-1 Radio Modem
60516	FC-250 Rod Bracket
60241	BC-30B (120V) Single Charger
60700	BC-30D (120V) Dual Charger
14-008005-03	GPS Receiver Cable - FC-1000 & Recon
51295-R	FC-100 to PC 9-pin Cable
60243	F-25 USB Cable
60565	BT-66Q BATTERY
60815	BATTERY CHARGER, FC-2500, 12V 3A



RS-1 Radio Modem
Part # 60434



FC-250 Rod Bracket
Part # 60516



BT-66Q Battery
Part # 60565





Battery Charger, FC-2500,
12V 3A
Part # 60815



F-25 USB Cable
Part # 60243

FC-250 Field Software Options

Field Software	
 <p>TopSURV</p> <ul style="list-style-type: none"> • Large Graphical User Interface (GUI) • Graphical Stakeout • Map View data collection • Fast job management and storage <p>See page 38 for more details.</p>	 <p>Topcon Layout</p> <ul style="list-style-type: none"> • Intuitive field software supports manual total stations and robotics (optional) • Custom built interface for contractors • Easy layer management tools <p>See page 44 for more details.</p>

FC-120

Windows® Field Controller



- **Built-in Bluetooth® wireless technology**
- **Ultra-bright, TFT, color touch screen display**
- **Windows® CE.NET 5.0 operating system**
- **Compact, rugged design**
- **Easy access Compact Flash and SD Media card slots deliver memory expansion and connectivity options**
- **Removable, long-lasting Li-Ion batteries**

Field Data Comes Alive

The FC-120 provides advanced software functions such as the large key pop-up keyboard for data entry and incorporates the graphical Windows® CE.NET 5.0 operating system on a easy to read, bright, color touch screen display. Watch your field data come alive with Topcon's FC-120.

Expandability Made Easy

Topcon knows that expandability is important to professionals in the field. The FC-120 allows quick and easy access to SD and CF card slots for data transfer and exchange with other devices. No tools or extra process is needed to access these card slots. In addition, with Bluetooth® wireless technology built-in to the FC-120, the CF card slot remains open for expanded memory.

Removable Li-Ion Batteries

The FC-120 has an easy sliding lock mechanism to allow quick replacement of the compact, long-lasting Li-Ion battery.

FC-120 Specifications	FC-120 128 MB	FC-120 256 MB
Processor Speed	520 MHz	
Operating System	Windows® CE.NET 5.0	
Memory		
SDRAM	64 MB	64 MB
ROM	128 MB	256 MB
Interface		
Serial	RS-232C (D-sub 9 pin)	
USB	USB rev 1.1 (Type Mini-B)	
SD	Memory and IO supported	
Compact Flash	1 x Type I/II (Memory and IO)	
Bluetooth® wireless technology	Standard (Internal), Bluetooth Version 1.2	
Environmental		
Water/Dust Resistance	IP66*	
Operating Temperature	-4°F to +122°F (-20°C to +50°C)	
Shock Resistance	Dropping this instrument from a height of 3.28 ft. (1 meter) does not affect its functions**	
Operating Time***	Approx. 20 hours (typical use), Approx. 45 hours (with no display light, no touch)	

* When caps are installed. ** Each of the instrument's six sides was dropped onto a concrete surface, and the instrument's operation was then confirmed. Only the exterior of the instrument was damaged.

*** Battery capacity will differ depending on whether Bluetooth is used or not, brightness of the backlight, room temperature and application software used. (When Bluetooth is used, battery capacity will lower approximately 30%).

FC-120 Hardware and Accessories

FC-120 w/ 256 MB Hardware/Software Kits	
Part #	Description
60673	FC-120 256MB DATA COLLECTOR
60704	FC-120 256MB W/TOPSURV
60705	FC-120 256MB W/TOPSURV PRO
60706	FC-120 256MB W/TOPSURV ROBOTIC
60707	FC-120 256MB W/TOPSURV PRO ROB
60708	FC-120 256MB W/TOPSURV GPS+
60709	FC-120 256MB W/TOPSURV PRO GPS+
60710	FC-120 256MB W/TOPSURV COMPLETE
FC-120 w/ 128 MB Hardware/Software Kits	
60672	FC-120 128MB DATA COLLECTOR
60714	FC-120 128MB W/TOPSURV
60715	FC-120 128MB W/TOPSURV PRO
60716	FC-120 128MB W/TOPSURV ROBOTIC
60717	FC-120 128MB W/TOPSURV PRO ROB
60718	FC-120 128MB W/TOPSURV GPS+
60719	FC-120 128MB W/TOPSURV PRO GPS+
60720	FC-120 128MB W/TOPSURV COMPLETE
FC-120 Accessories	
60565	BT-66Q BATTERY
60241	BC-30B (120V) SINGLE CHARGER
51288	INSTRMNT CBL TO FS/2(TOPC)
60290	BRACKET, FC-120 METAL
60303	BRACKET,FC-100 COMPOSITE
60243	F-25 USB Cable
14-008005-03	CABLE REC TO SERIAL DB9



BT-66Q Battery
Part # 60565



BC-30B (120V) Single
Charger
Part # 60241



Instrument Cable to
FS/2 (TOPC)
Part # 51288



Bracket, FC-120 Metal
Part # 60290



F-25 USB Cable
Part # 60243



Cable Rec to Serial DB9
Part # 14-008005-03

FC-120 Field Software Options

Field Software



TopSURV

- Large Graphical User Interface (GUI)
- Graphical Stakeout
- Map View data collection
- Fast job management and storage

See page 38 for more details.



Topcon Layout

- Intuitive field software supports manual total stations and robotics (optional)
- Custom built interface for contractors
- Easy layer management tools

See page 44 for more details.

FC-25/FC-25A

World's Smallest Fully Rugged Handheld that Works Anywhere and Anytime



- **MIL-STD 810G Certified and IP65 Compliance**
- **Microsoft Windows Mobile® 6.5**
- **3.5" VGA transreflective sunlight readable TFT LCD**
- **Embedded high sensitivity GPS receiver**
- **Long battery life provides all-day power**
- **Optional model with E-Compass, altimeter, and 3M pixels auto-focus camera**



Why Rugged?

Topcon's rugged mobile computing solutions have embraced the most rigid rugged standards to survive the most challenging environments without attrition in performance. They are pertinent for professionals who require dependable computing systems to fully function with exposure to dirt, dust, humidity, motion, vibration, change of temperature or any other harsh factor that would easily paralyze or damage commercial-grade devices.

Extra Memory

The FC-25 is loaded with all the memory you should need. Primary program RAM is 256MB. In addition, it includes 2GB Flash storage memory.

Bluetooth® and WiFi

Bluetooth and WiFi come standard. No need for expensive upgrades or CF cards. We built these into the standard unit. We provide a way to turn them off as well to conserve battery power when you do not need WiFi or Bluetooth.

FC-25/FC-25A Specifications	FC-25	FC-25A
Processor Speed	Samsung 2450, 533MHz	
Operating System	Windows Mobile 6.5	
Memory	256MB RAM, 2GB System Flash	
Expansion Card Slot	SD/SDHC Cards (up to 8GB)	
Wireless	Bluetooth v2.0, WLAN IEEE 802.11b/g	
Ports	USB, External GPS antenna	
Internal GPS	SiRF starIII	
Camera	No	Yes (3MP)
Altimeter	No	Yes
E-Compass	No	Yes
Water/Dust Resistance	IP65	
Battery Li-ion	8 hours – Replaceable	
Size (l x w x d)	5.67in x 3.27in x 1.14in (144mm x 83mm x 29mm)	
Weight (g)	11.3oz (320g)	
Operating Temperature	-4°F to +140°F (-20°C to +60°C)	

FC-25/FC-25A Hardware and Accessories

FC-25 Hardware Kits	
Description	
KIT, FC-25	
KIT, FC-25A with 3MP Camera	
FC-25 Accessories	
Li-ion Battery, 2400mAh for FC-25	
AC Adapter, FC-25	
USB Cable, (Type mini-B to Type A)	
Stylus Pen, FC-25	
Hand Strap, FC-25	
Quick Start Guide, FC-25	
Vehicle Charger – Cigarette Lighter	
Vehicle Mount	
GPS MMCX Antenna	
Screen Protectors (20 per package)	
Soft Case	

Part numbers to be announced separately.



Li-ion Battery, 2400mAh
for FC-25



AC Adapter, FC-25



Stylus Pen, FC-25



Hand Strap, FC-25



Vehicle Charger – Cigarette Lighter



Vehicle Mount





GPS MMCX Antenna



Soft Case

FC-25/FC-25A Field Software Options

Field Software	
 <p>TopSURV</p> <ul style="list-style-type: none"> • Large Graphical User Interface (GUI) • Graphical Stakeout • Map View data collection • Fast job management and storage <p>See page 38 for more details.</p>	 <p>Topcon Layout</p> <ul style="list-style-type: none"> • Intuitive field software supports manual total stations and robotics (optional) • Custom built interface for contractors • Easy layer management tools <p>See page 44 for more details.</p>

TopSURV

Field Controller Software with a Superior Graphical User Interface



- **Large Graphical User Interface (GUI)**
- **Intuitive User Interface**
- **Graphical Stakeout**
- **Map View data collection**
- **Fast job management and storage**
- **Single Source Solution**
- **Advanced Roading available**
- **Available for Windows® PC, Windows CE, Windows Mobile®, handhelds or on-board**



Survey with speed and convenience.

Create, edit, upload, and download faster using advanced data management techniques. How many instruments do you use on the jobsite? To simplify your work, Topcon stores configuration files for each instrument. Switching from a Legacy E to a GPT-3100 is a snap—there's no wasted time configuring baud rates and connection settings. Just do it once and store it. Compatibility problems? We know there are several programs that require specific file formats, so we've given TopSURV numerous file formatting export options.

TopSURV is Packed with Features

COGO: There are many COGO and other calculations available in TopSURV. Such as: Inverse, Curves, Offsets and Transformations.

Conveniently Store Configurations: Switch from GPS to Total Stations in a snap. Maintain one job file with both GPS and Total Station raw data. TopSURV has the fast Mode change and Saved Configurations.

Export File Formats: TopSURV is prepared to export many different file formats of raw data, points, lines, or surfaces. Topcon understands that you have many different file export needs.

Roading: With the PRO module of TopSURV, you receive all of the powerful roading functions. Input or import alignments horizontal or vertical, or templates and cross sections.

Survey: Perform a basic point Topo or a more advanced Resection and Find Stationing.

Linework and CAD Interoperability: Collecting linework in the field based on codes and strings speeds up your field and CAD time. Take advantage of these powerful linework options in TopSURV. Export the collected data in many common linework formats.

TopSURV Recommended System Requirements

Operating System	Windows CE 5.0, Windows Mobile 6 or higher
Graphics	320 x 240 min resolution W/H in pixels, 640 x 480 alt resolution
RAM	64 min MB
Disk Space	64 min free in MB, flash (internal) type

Configure Your TopSURV Package

TopSURV TS - Core package comes standard with the following features:

Job	Edit Job	COGO (Coordinate Geometry)
New Job	Points in the Job	Inverse - Point to Point
Open Job	Descriptor Codes in the Job	Inverse - Point to Line
Delete Job	Layers	Inverse - Point to List
Job Information	Linework	Point in Direction
Configure	Area	Intersection
Survey Configurations (TS)	Point Lists	Calculator
Global Settings	Raw Data	Curves - Curve Solver
Backup Options	Images	Curves - 3 Point Curve
Distance Units	Survey/Collect Features	Curves - PI & Tangents
Display Options	Topographic Observation	Curves - Radius & Points
Audible Alarms	Tape Dimension Measurements	Area - By Points
Menu Display Options	Missing Line	Area - Hinge
Import	Stakeout/Navigate Features	Area - Line
From Job	Points	Corner Angle
From Device	Lines	Line Offset
From File	Offsets - Line	Curve and Offset
Export	Offsets - Intersection	Adjust - Rotate
To Job	Offsets - 3 Point Curve	Adjust - Scale
To Device	Offsets - Curve	Adjust - Translate
To File	Offset - Spiral	Adjust - 2D Transform
Setup (Total Station)	Digital Terrain Model	Adjust - Traverse
Occupation / Backsight Setup	Point in Direction	Traverse
Resection	Point List	
Remote Benchmark	Curve	
	Linework	

Advanced Modules for GPS+ and Robotics

Add-on one of the following modules for these additional features:

TopSURV GPS+ Module

Configure
Survey Configurations (GPS)
Coordinate System
Setup (GPS)
Start Base
Localization
Status
Known Point Initialization
Survey/Collect Features
Auto-Topo

TopSURV Robotics Module

Setup (Total Station)
Remote Control
Survey/Collect Features
Auto-Topo

Add TopSURV Pro to Any Package

TopSURV Pro Module (Roading) - Contains the following additional features:

Edit Roads	Stakeout/Navigate Features
Road	Real Time Road
Horizontal Alignments	Road
Vertical Alignments	Slope
Templates	COGO (Coordinate Geometry)
Cross Sections	Road Offset
Survey/Collect Features	
Cross Section	
Find Station	

TopSURV Complete

The Total Package

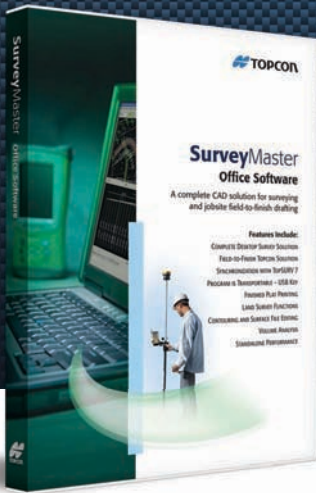
If you want all the features TopSURV has to offer then TopSURV Complete is the package for you. With all the core features of TopSURV TS plus the advanced features included in the GPS+, Robotics and Pro (Roading) modules, surveying and data collection versatility is at your fingertips.

TopSURV Software

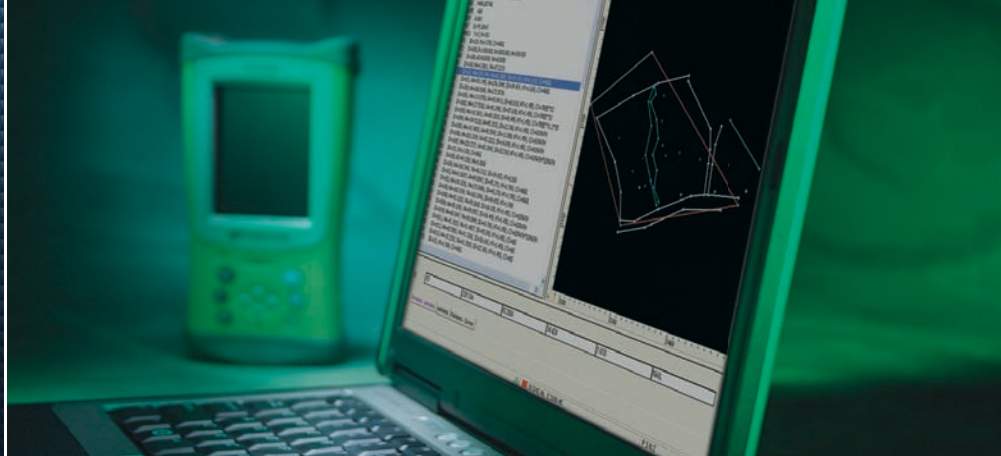
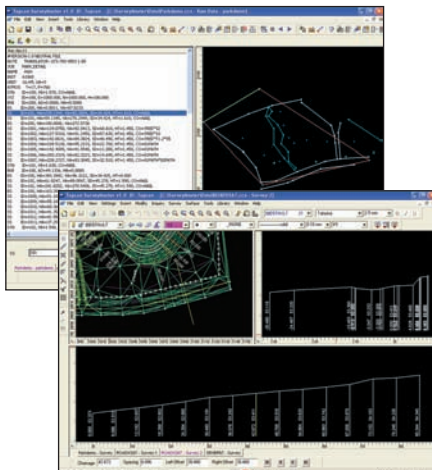
TopSURV Software Only	
Part #	Description
60268	KIT, TOPSURV (BASIC)
60269	KIT, TOPSURV PRO (TS+ROADING)
60270	KIT, TOPSURV ROBOTICS (TS+ROB)
60271	KIT, TOPSURV PRO ROBOTICS (TS+ROB&RD)
60272	KIT, TOPSRV GPS+ (TS&GPS+)
60273	KIT, TOPSURV PRO GPS+ (TS&GPS+&RD)
60297	KIT, TOPSURV COMPLETE(TS&RD&ROB&mmGPS+)
60502	ON-BOARD TOPSURV FOR GTS 900A/GPT-9000A
TopSURV Software Modules	
60299	SW,TOPSURV GPS+ MODULE
60300	SW,TOPSURV ROBOTICS MODULE
60301	SW,TOPSURV ROADING MODULE
60319	KIT,TOPSURV W/GIS

SurveyMaster/SurveyMaster Lite

Cadastral and Construction Surveying Office Software



- **Field-to-Finish Topcon Solution**
- **Synchronization with Topcon TopSURV**
- **Program is transportable – USB key**
- **Finished Plat Printing**
- **Automatic contouring and surface editing**
- **Standalone performance**
- **Extensive Cogo and Land Survey specific routines**
- **Supports AutoCAD DWG/DXF files and MicroStation DGN files**



SurveyMaster

SurveyMaster provides the complete desktop survey solution. Whether it's a simple mortgage survey with a one page print out of the boundary and house, or a complicated multi-surface construction jobsite with roads, utilities, machine control, and buildings, SurveyMaster gives you everything you need to complete a project. From field-to-finish, control the critical data flow from data collection, raw file analysis, engineering design, to final print efficiently with SurveyMaster.

SurveyMaster Lite

SurveyMaster Lite contains land survey specific functionality. Packed with COGO, drafting, survey data editors and adjustments, deed entry, legal description writers, and contouring, SurveyMaster Lite provides all the tools required to produce a final plat whether it is a simple mortgage inspection survey or a complicated A.L.T.A. survey.

Field or Office, SurveyMaster/SurveyMaster Lite are Ready-To-Go

SurveyMaster runs on the USB key, so when you need to move to a different PC or go out into the field, simply take the USB key with you. There's no hassle from PC license files or time consuming updating to several different PCs, just plug in the USB key and you're ready to go.



Extensive COGO and Land Survey Specific Routines

Both SurveyMaster and SurveyMaster Lite provide numerous COGO and survey specific routines. Everyday COGO functions such as bearing/dist intersections, point in direction calcs as well as calculation of point position from offset and distance data are all available. Survey specific tools such as traverse entry/editors, deed entry/editors, legal description writer, point translations, and many more are at your fingertips.

SurveyMaster Recommended System Requirements

Operating System	Windows® 2000/XP/Vista OS
Processor Speed	500 MHz processor or higher
RAM	512 MB RAM
Connectivity	USB2 port for hardware lock

SurveyMaster/SurveyMaster Lite Comparison Chart

Functionality	SurveyMaster	SurveyMaster Lite
Import/Export AutoCAD dwg/dxf files	X	X
Import/Export MicroStation dgn files	X	X
Synchronization with TopSURV	X	X
Raw Data – View, Edit, Process	X	X
Edit Coordinates – In place and editor	X	X
Traverse Adjustments – Least Squares, Compass, Transit	X	X
Traverse Entry/Editors	X	X
Legal Description Writer	X	X
Deed Entry/Editor	X	X
Subdivision Layout	X	X
Drafting Tools – Lines, Arcs, Plines, Polygons, Text, Multi-Line Text, Tables, many more.	X	X
Plotting	X	X
Raw Data Compatibility – most major manufacturers	X	X
DTM Creation/Edit	X	X
Contouring	X	X
3D Viewer	X	X
Alignments	X	
Profiles Create/Edit	X	
Cross-Sections Create/Edit	X	
Automatic Pad Design	X	
Volumes	X	
Advanced DTM Editing Tools	X	
Cut/Fill Color Maps	X	
Advanced Drafting Tools	X	
Background Images	X	
Export 3DMC Files	X (See Topcon SiteMaster for Import of 3DMC Files)	
Export 3DMC Project File	X (See Topcon SiteMaster for Import of 3DMC Project Files)	
Road Design/Editing	See Topcon SiteMaster	
Sewer	See Topcon SiteMaster	
Drainage	See Topcon SiteMaster	
2D to 3D Tools	See Topcon SiteMaster	

SurveyMaster Software

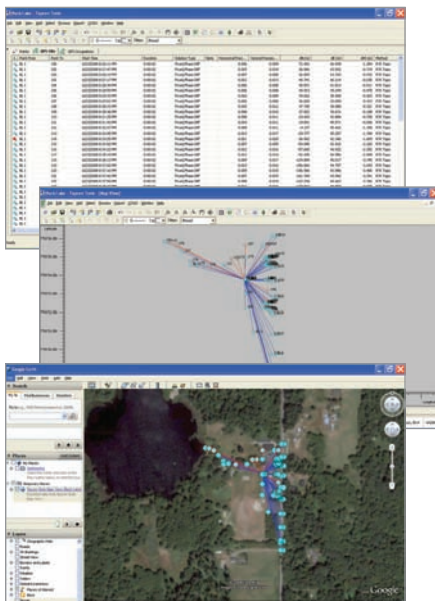
SurveyMaster	
Part #	Description
60723	SurveyMaster Full Installation
60724	SurveyMaster Demo CD
60858	Kit, SurveyMaster Lite Complete
60859	Kit, SurveyMaster Lite Demo

Topcon Tools

Powerful Post-Processing and Adjustment Software



- Supports all Topcon survey instruments and data collectors
- Modular software including Total Station, RTK, Post Processing, GIS, Design, and Imaging
- Easily customizable for your workflow
- Multiple views of your job including Map, Occupation, Google Earth, Tabular, CAD, and 3D



Topcon Tools is a modular product, where each module has its own specific purpose allowing the user to solve different tasks:

- **Post Processing Module** includes the engine for post processing and adjusting GPS+ data.
- **RTK Module** includes functionality for importing, displaying, adjusting, exporting, and reporting RTK data (data collected with RTK surveying using TopSURV or other data collection software).
- **Total Station Module** includes functionality for importing, displaying, adjusting, exporting, and reporting data collected with total stations.
- **GIS Module** a less precise, less sophisticated version of the GPS+ PP module for processing DGPS data.
- **Design Module** includes functionality for working with digital terrain models (surfaces) and creating and editing roads.
- **Imaging Module** includes functionality for working with images, stereopair and scan session.
- **Advanced Module** includes additional options for processing, adjustment, and localization. To use a full-function module (or all modules at a time) the user must have authorization for using appropriate modules. To get authorized, the user can use one of the following: USB dongle or access code for a single computer or license for a set of computers to work in a local net. The DEMO mode allows the user-only view edit and process no more than five points in a job.

Topcon Tools Recommended System Requirements

Operating System	Microsoft Windows® XP/Vista
Processor	Compatible with Intel® Pentium® 1 GHz or faster
RAM	512 MB of RAM (1 GB recommended)
Hard-disk Space	300 MB of available hard-disk space
Monitor	17" or larger monitor recommended, displaying 256 colors
CD ROM	Required
Connectivity	USB2 port for hardware lock

Topcon Tools Software

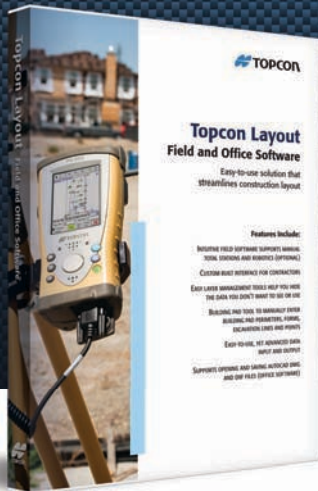
Topcon Tools Hardware Authorizations	
Part #	Description
Original Sales	
29-034012-06	MODULE, TTOOLS TOTAL STA (USB)
29-034013-06	MODULE, TTOOLS RTK (USB)
29-034022-02	MODULE, TTOOLS POST PROC (USB)
29-034016-09	MODULE, TTOOLS POST PROC & ADV (USB)
29-034017-06	MODULE, TTOOLS GIS (USB)
29-034025-02	MODULE, TTOOLS GIS PRO (USB)
29-034018-02	MODULE, TTOOLS DESIGN
29-034020-02	MODULE, TTOOLS TOTAL STA, DES, & IMAGING (USB)
29-034016-01	MODULE, TTOOLS COMPLETE (USB)
Topcon Tools Software Authorizations	
Original Sales	
pswd 29-034012-01	MODULE, T TOOLS TOTAL STA
pswd 29-034013-01	MODULE, TTOOLS RTK
pswd 29-034014-01	MODULE, TTOOLS POST PROC
pswd 29-034016-08	MODULE, TTOOLS POST PROC & ADV
pswd 29-034017-07	MODULE, TTOOLS GIS
pswd 29-034025-01	MODULE, TTOOLS GIS PRO
pswd 29-034018-01	MODULE, TTOOLS DESIGN
pswd 29-034020-01	MODULE, TTOOLS TOTAL STA, DES, & IMAGING
pswd 29-034016-01	MODULE, TTOOLS COMPLETE

Topcon Tools Network Authorizations	
Part #	Description
Original Sales	
pswd 29-034012-10	MODULE, TTOOLS NETWORK TOTAL STA
pswd 29-034013-10	MODULE, TTOOLS NETWORK RTK
pswd 29-034022-10	MODULE, TTOOLS NETWORK POST PROC
pswd 29-034016-10	MODULE, TTOOLS NETWORK POST PROC & ADV
pswd 29-034023-10	MODULE, TTOOLS NETWORK GIS
pswd 29-034025-10	MODULE, TTOOLS NETWORK GIS PRO
pswd 29-050417-10	MODULE, TTOOLS NETWORK DESIGN
pswd 29-034020-10	MODULE, TTOOLS NETWORK TOTAL STA, DES, & IMAGING
pswd 29-034028-10	MODULE, TTOOLS NETWORK COMPLETE
Topcon Tools Authorization Upgrades	
Original Sales	
pswd 29-050409-01	MODULE, TTOOLS ADV POST PROC
pswd 29-034026-01	MODULE, TTOOLS GIS HIGH ACC
pswd 29-034027-07	MODULE, TTOOLS IMAGING

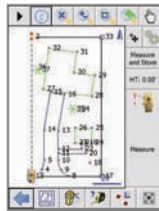
* 2nd License Options are available.

Topcon Layout

Easy-to-use Field Software Solution that Streamlines Construction Layout



- **Intuitive field software supports manual total stations and robotics (optional)**
- **Custom built interface for contractors**
- **Easy layer management tools help you hide the data you don't want to see or use**
- **Building pad tool to manually enter building pad perimeters, forms, excavation lines and points**
- **Easy-to-use, yet advanced data input and output**



Topcon Layout field software is where the real work begins. Not only can you import projects that were prepared on the desktop, you can easily enter plan features from paper plans directly onsite. Topcon Layout field software can then be used to help you locate points on the construction site when using instruments such as the GTS-230W or GTS-100N Series total stations. After construction you can perform as-built surveys and create stakeout tolerance reports.

Simple User Interface for Total Stations

- Drive robotic total stations with the optional robotic module
- Turn measurements from total stations into graphical data
- Zero Plate reduces the potential for angular mistakes

Live Map with Touch Selection

- Touch any point or line on the map and press the Stake button to layout the point
- Touch any line to quickly calculate offsets

Fast Plan Entry

- Directional arrows for entering fast plan line jogs
- Plans are stored as figures that can be sent out to DXF files

Quick Dimensions

- Click the Tape Measure icon to quickly get the dimension between points
- View the summary of multiple point selections

Topcon Layout Recommended System Requirements

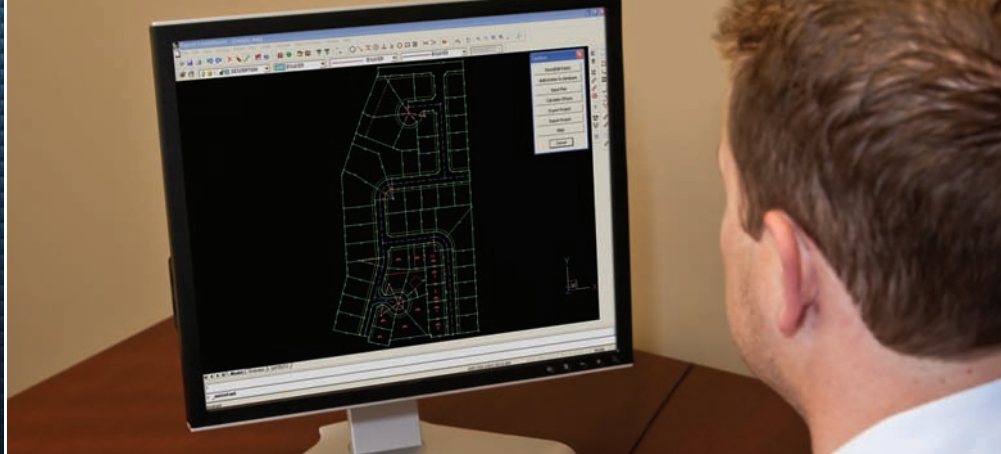
Operating System	Windows CE 5.0, Windows Mobile 6 or higher
Graphics	320 x 240 min resolution W/H in pixels, 640 x 480 alt resolution
RAM	64 min MB
Disk Space	64 min free in MB, flash (internal) type

Topcon Layout

Part #	Description
99-090001-01	KIT, Topcon Layout (DVD & TLS)
99-090001-03	KIT, Topcon Layout Robotics (DVD, TLS, & TLR)
99-090001-05	KIT, Topcon Layout Robotics with LayoutMaster (DVD, USB, TLS, & TLR)

Topcon LayoutMaster

Easy-to-use Office Software Solution that Streamlines Construction Layout



- **Custom built interface for contractors**
- **Easy layer management tools help you hide the data you don't want to see or use**
- **Building pad tool to manually enter building pad perimeters, forms, excavation lines and points**
- **Easy-to-use, yet advanced data input and output**
- **Supports opening and saving AutoCAD DWG and DXF files**

Work with Computer Design Files

Topcon LayoutMaster installs on any desktop PC. With it, you can prepare your stakeout projects by importing CAD drawings produced by engineers and architects, or when no digital CAD drawings are available, you can manually input the data simply from paper plans. Easily coordinate objects, compute offset stakes, and transfer the projects to Topcon Layout field controller software for stakeout.

Digital Plans Made Easy

With LayoutMaster from Topcon, you can easily use digital files. Quickly generate points and coordinates of stakeout points. Use the easy routines to generate a northing, easting, and elevation for each plan point. Put down that calculator, because Topcon LayoutMaster has the routines you need to deal with digital files.

Building Calculations

Easily perform the building calculations you need. Whether you are double checking building dimensions from the architectural plans, or manually entering your own building plans, Topcon LayoutMaster will make your job start faster. Compute areas, points, and lines from objects and points. Calculate offset lines from known building dimensions or lot lines. Then simply transfer your job data into a Topcon Layout field controller.

Topcon LayoutMaster Recommended System Requirements

Operating System	Windows® XP/Vista OS
Processor Speed	500 MHz processor or higher
RAM	512 MB RAM
Connectivity	USB2 port for hardware lock

Topcon LayoutMaster

Part #	Description
99-090001-02	KIT, Topcon LayoutMaster (DVD & USB)
99-090001-04	KIT, Topcon Layout with LayoutMaster (DVD, USB, & TLS)
99-090001-05	KIT, Topcon Layout Robotics with LayoutMaster (DVD, USB, TLS, & TLR)

GRS-1

Dual Frequency RTK GNSS Receiver and Field Controller



- **GNSS (GPS + GLONASS) 72 channel RTK Satellite Receiver**
- **GSM and CDMA internal cellular**
- **806 MHz XScale processor**
- **Windows Mobile® 6.1 Operating System**
- **2.0 megapixel camera**
- **256 MB SDRAM, 1 GB Flash**
- **Internal magnetic compass**
- **Built-in Bluetooth® wireless technology and Wireless LAN connectivity**

All-in-one Handheld GNSS Receiver and Field Controller

Topcon's GRS-1 is the world's first fully integrated, dual-constellation, network-enabled RTK rover system. It is an all-in-one handheld GNSS receiver and field controller with high-speed processor, increased memory, built-in camera and compass. Also integrated into the new system are SD memory card slot, optional internal GSM or CDMA modem, and connectivity via Wireless LAN and Bluetooth® wireless technology.

Small in size and weight, yet fully integrated with all the features you need.

The GRS-1 (Geodetic Rover System) was designed with two primary system design goals: smaller size and weight, and lower cost. The new receiver has DGPS capability with internal L1 antenna for use in the GIS and navigation space. Then add the PG-A1 external antenna and connect to your local GNSS network via the internal modem, and instantly move to dual-frequency, dual-constellation GNSS centimeter RTK accuracy! The GRS-1 can also be used as a static post processed receiver system.

Expansion Connector

Weatherproof expansion port allows for the addition of the RH-1 unit. The RH-1 will allow the GRS-1 to communicate with radio-based base stations for RTK operation. It is compatible with all previous radio types that are currently in use with Topcon GNSS systems. This includes Digital UHF, Spread Spectrum, and FCS enabled UHF radios from all previous Topcon systems.

GRS-1 Specifications	
WAAS/EGNOS	Yes
Processor Speed	806 MHz
Operating System	Windows Mobile® 6.1
Data Update Rate	Up to 100 Hz
GNSS Receiver	GPS + GLONASS
Cellular Capability	Internal GSM or CDMA
Input/Output	Bluetooth®, USB, Serial, ANT, and Power
Wireless LAN Connectivity	Standard (Internal, 802.11.b)
Built-in Camera	2.0 Megapixel
Magnetic Compass	Internal, 4 degree accuracy

GRS-1 Instruments & Accessories

GRS-1 Precision RTK GPS Only Rover Kits	
Part #	Description
99-084501-01	GRS-1 Precision RTK GD kit w/o modem
99-084501-03	GRS-1 Precision RTK GD kit w/GSM modem
99-084501-25	GRS-1 Precision RTK GD kit Verizon w/CDMA modem
GRS-1 Precision RTK GPS+ GLONASS Rover Kits	
99-084501-30	GRS-1 Precision RTK GGD kit w/o modem
99-084501-31	GRS-1 Precision RTK GGD kit w/GSM modem
99-084501-33	GRS-1 Precision RTK GGD kit Verizon CDMA modem
GRS-1 Receiver OAF Options	
27-080501-01	OAF, GRS GPS L2
27-080501-02	OAF, GRS GLONASS L2
27-080501-03	OAF, GRS RTK 5Hz Position & Raw
27-080501-04	OAF, GRS RTK 10Hz (upgrade from 5Hz)
27-080501-05	OAF, GRS RTK 20 Hz (upgrade from 10 Hz)
27-080501-06	OAF, GRS RTK 50 Hz (upgrade from 20 Hz)
27-080501-07	OAF, GRS RTK 100 Hz (upgrade from 50 Hz)
RH-1 Radio System	
99-080521-21	RH-1 w/Digital UHF
99-080511-01	RH-1 w/FH915
99-080517-01	RH-1 w/Satel
99-080510-01	Battery holder
HiPer Ga Base Stations	
99-864807-01	HIPER-GA GD RTK BASE KIT, 5HZ
99-864807-02	HIPER-GA GGD RTK BASE KIT, 5HZ
GRS-1 Optional Accessories	
14-008148-01LF	Cigarette Lighter adapter
60700	BC-30D dual battery charger
60565	Battery, Li-Ion BT-66Q
30-090002-01	GRS cable pole clamps
14-008158-02	Cable, External Antenna
30-030102-01	GMS-2 Bracket
01-844201-02	PG-A1 Antenna w/o Cables



*RH-1 w/ Digital UHF
Part # 99-080521-21*



*BC-30D Dual Battery
Charger
Part # 60700*



*BT-66Q Battery
Part # 60565*



*GRS Cable Pole Clamps
Part # 30-090002-01*



*PG-A1 Antenna
w/o Cables
Part # 01-844201-02*

GRS-1 Field Software Options

Field Software	
	TopSURV <ul style="list-style-type: none"> • Large Graphical User Interface (GUI) • Graphical Stakeout • Map View data collection • Fast job management and storage
	<p><i>See page 38 for more details.</i></p>

GR-3

G3 Enabled GNSS Receiver



- **G3 Satellite Tracking (GPS, GLONASS, Galileo)**
- **Advanced rugged system design**
- **Bluetooth® wireless technology**
- **72 Universal Tracking channels**
- **Optional internal GSM/GPRS cellular communication**



Track all Three Satellite Positioning Systems

G3 is the first technology to combine all three satellite positioning systems – GPS, GLONASS, and the European Galileo system. In addition to adding the Galileo system to Topcon's industry leading GPS+GLONASS technology, the G3 chip technology incorporates all the planned signal modernization of the GPS and GLONASS satellite systems. Topcon's systems will track all available positioning satellite signals, available now or planned for the future!

G3 technology from Topcon ensures our users that a system they invest in today will still be fully operational far into the foreseeable future, eliminating the need to buy a new receiver as the new signals come on line. Only Topcon offers the Universal Tracking Technology found in the G3 receiver system, demonstrating clear technology leadership.

Modern Design

Offering advanced design features not found in other receivers, the GR-3's modern design provides the flexibility and ease-of-use you demand. Bluetooth® wireless technology provides GR-3 users with the advantages of a completely cable-free system setup, with any Windows CE field controller. With rugged magnesium I-beam construction for unbeatable strength and durability, the GR-3 also boasts easily accessible SD card memory and dual hot-swappable batteries for unlimited continuous operation.

GR-3 Specifications	
Signals Tracked	
GPS	L1, L2, & L5 carrier, CA, L1 P, L2 P, L2C
GLONASS	L1, L2, & L5 carrier, L1CA, L2CA, L1 P, L2 P
GALILEO	E2-L1-E1, E5, E6
Optional Radio Type	Integrated Tx/Rx 915MHz Spread Spectrum
Cellular Communications	Integrated via SIM Card, GSM/GPRS
Memory	Internal, Removable SD Memory Card
Shock Rating	2 meter pole drop

GR-3 Instruments & Accessories

GR-3 RTK Systems & Rovers	
Part #	Description
Spread Spectrum Systems & Rovers	
99-054902-08	Dual GR-3, 915, w/Std G3 Options, 1.5 Mile Range
99-054902-22	Dual GR-3, 915, w/Std, G3 Options, Unlimited Range
99-054902-09	Dual GR-3 w/GSM, 915, w/Std G3 Options
99-054901-08	Single GR-3, 915, w/Std G3 Options, 1.5 mile range
99-054901-22	Single GR-3, 915, w/Std G3 Options, Unlimited Range
99-054901-09	Single GR-3 w/GSM, 915, w/Std G3 Options
UHF Systems & Rovers	
99-054902-16	Dual GR-3, UHF, w/Std G3 Options, 1.5 Mile Range
99-054902-11	Dual GR-3, UHF, w/Std G3 Options
99-054902-12	Dual GR-3 w/GSM, UHF, w/Std G3 Options
99-054901-16	Single GR-3, UHF, w/Std G3 Options, 1.5 Mile Range
99-054901-11	Single GR-3, UHF, w/Std G3 Options
99-054901-12	Single GR-3 w/GSM, UHF, w/Std G3 Options
99-054902-15	KIT,DUAL GR3 DIGITAL MOD W/VERIZON CDMA
99-054902-14	KIT,DUAL GR3 DIGITAL MOD W/SPRINT CDMA
99-054901-15	KIT,SINGLE GR3 DIGITAL MOD W/VERIZON CDMA
99-054901-14	KIT,SINGLE GR3 DIGITAL MOD W/SPRINT CDMA
UHF Systems - Radio Configuration Kits	
Important: Configuration kits are required for each UHF receiver. Kits contain receiver power cable, antenna, & radio config file.	
29-054902-01	Dual Configuration Kit, GR-3, 440-470MHz
29-054902-03	Dual Configuration Kit, GR-3, 410-440MHz
29-054901-01	Single Configuration Kit, GR-3, 440-470MHz
29-054901-03	Single Configuration Kit, GR-3, 410-440MHz
Base & Rover Accessory Kits	
99-054906-01	GR-3 Base Accessory Kit
99-054906-02	GR-3 Rover Accessory Kit
G3 OAF Options	
27-050903-01	OAF, G3, GLONASS L1, L2 Tracking
27-050916-01	OAF, G3 Unlimited Range, Per Receiver
27-050908-01	OAF, G3, RTK 10Hz
27-050908-02	OAF, G3, RTK 20Hz
27-050902-01	OAF, G3, GPS L5 Tracking
27-050904-01	OAF, G3, Galileo Tracking
GR-3 Power Options	
02-850901-01	Lithium ION GR-3 Rechargeable Battery Pack
01-050911-01	GR-3 Battery Recharger Cradle
02-850904-01	AA Battery Holder For GR-3
14-008016-03	Cable, Power, Receiver to SAE
14-008052-01	Cable, Power, Charger
14-008072-02LF	Cable, Power, Cradle to Receiver or RE-S1
22-034101-01	Power Supply w/ 48" Safeco Conn
14-008023-01	Cigarette Lighter to SAE Cable
14-008025-01	Alligator Clips to SAE Cable
14-008022-01	SAE to SAE Extension Cable

GR-3 Platform Options	
Part #	Description
99-054906-01	GR-3 Base Accessory Kit
99-054906-02	GR-3 Rover Accessory Kit
55501	Tribrach 20 w/ Optical Plummet
51861	Tribrach Adapter Model S2
51940	Plug Adapter
22-050501-01	2M Fixed Height Tripod
02-850905-01	GR-3 Quick Disconnect Assy
22-050908-01	2M pole, Fixed Height, For GR-3
GR-3 Communication Accessories	
14-008005-03	Cable, Rec to Serial DB9
14-008070-01	Cable, ODU-4/USB-A (2.0M)
99-054901-27	U.S. GSM Upgrade kit, GR-3 915
99-054901-29	U.S. GSM Upgrade kit, GR-3 UHF
99-054901-31	KIT, UPGRD GR3 DIG UHF TO UHF VERZN CDMA
99-054901-32	KIT,UPGRD GR3 DIG UHF TO UHF SPRINT CDMA
GR-3 Accessories	
22-050902-01	Tape, 3M Measuring
22-050903-01	Bag, 4x8x2 Cable
22-050904-01	Carrying Case, Single GR-3
22-050905-01	Carrying Case, GR-3 Base + Rover
30-030012-01	Antenna, Rubber Duck 915 RTNC
30-070003-01	UHF Antenna, 410-440MHz
30-050503-01	UHF Antenna, 440-470MHz



GR-3 Battery Recharger Cradle
Part # 01-050911-01



AA Battery Holder for GR-3
Part # 02-850904-01



GR-3 Quick Disconnect Assy
Part # 02-850905-01



Bag, 4x8x2 Cable
Part # 22-050903-01



Tribrach Adapter Model S2
Part # 51861

HiPer Ga

Economical RTK Positioning Solution



- **Innovative, cable-free system design**
- **GPS and GLONASS satellite system tracking**
- **Advanced digital radio communications system**
- **Integrated Bluetooth® wireless technology**
- **Powerful 40-channel GNSS board operating at up to 20Hz**
- **User selectable and upgradable internal memory**
- **Rugged, waterproof, field-proven system design**

All-in-one Design

Built on Topcon's field-proven, reliable HiPer series platform, the HiPer Ga RTK receiver offers the latest in advanced technology and sophisticated design at an extremely affordable price. Like Topcon's other popular HiPer series receivers, the HiPer Ga features an "all-in-one" design eliminating the hassles of hauling around multiple components and cables vulnerable to loss, breakage, and the everyday punishment of the job site.

State-of-the-art Digital Radio

The HiPer GA features Topcon's new, state-of-the-art digital radio. As with current cellular technology, digital radios have replaced outdated analog systems because of their superior signal quality, robust performance, and advanced interference suppression.

Upgradability

In addition, the HiPer Ga features GPS satellite tracking capability standard, with the added bonus of optional GLONASS satellite tracking upgradability via OAF activation code. Software-based OAF upgradability means there's no hardware changes or modifications required. In most cases, your local Topcon dealer can upgrade your HiPer Ga while you wait.

HiPer Ga Specifications	
Tracking Specifications	
Tracking Channels, standard	40 L1 GPS (20 GPS L1+L2 on Cinderella* days)
Tracking Channels, optional	20 GPS L1+L2 (GD), GPS L1 + GLONASS (GG), 20 GPS L1+L2+GLONASS (GGD)
Signals Tracked	L1/L2 C/A and P Code & Carrier and GLONASS
Radio Specifications	
Modem Type	Internal Digital UHF TX/RX/DSP
Power Output	1.0W/0.25W (selectable)
Frequency Range	410 – 470 MHz programmable
Memory and Recording	
Internal Memory	Up to 128 MB
Data Update Rate	Up to 20 times per second (20Hz)
Data Type	Code and Carrier from L1 and L2, GPS and GLONASS

* Cinderella feature activates GGD reception at GPS midnight every other Tuesday for 24 hours.

HiPer Ga Instruments and Accessories

RTK Receiver Systems	
Part #	Description
RTK Systems	
99-864805-01	HiPer Ga System, GD, 5Hz RTK, TX/RX
99-864805-02	HiPer Ga System, GGD, 5Hz RTK, TX/RX
	Note: Both "system" receivers are TX/RX and can work with external cell modems.
Rover Kits	
99-864805-03	HiPer Ga Rover, GD, 5Hz RTK, RX only
99-864805-04	HiPer Ga Rover, GGD, 5Hz RTK, RX only
	Note: When purchased separately as rovers, HiPer Ga receivers are only able to receive RTK corrections via the internal radio. To activate the TX on the internal radio or to work with external cell modem or external radio, you must add the TX option (27-040811-01).
Receiver Configuration Kits (Required)	
29-044802-01	Dual Configuration Kit, HiPer Ga/Gb, 440-470MHz, U.S.
29-044802-03	Dual Configuration Kit, HiPer Ga/Gb, 410-440MHz, U.S.
29-044801-01	Single Configuration Kit, HiPer Ga/Gb, 440-470MHz, U.S.
29-044801-03	Single Configuration Kit, HiPer Ga/Gb, 410-440MHz, U.S.
HiPer Ga Power Options	
14-008016-03	Cable, Power, Receiver to SAE
14-008052-01	Cable, Power, Charger
22-034101-01	Power Supply w/ 48" Safeco Conn
14-008023-01	Cigarette Lighter to SAE Cable
14-008025-01	Alligator Clips to SAE Cable
14-008022-01	SAE to SAE Extension Cable
HiPer Ga Platform Options	
51861	Tribrach Adapter Model S2
51940	Plug Adapter
55501	Tribrach 20 w/ Optical Plummet
22-050501-01	2M Fixed Height Tripod
30-034004-01	Heads Up Bubble
22-006004-01	Litepole (Composite Rod)
HiPer Ga Communication Accessories	
14-008005-03	Cable, Rec to Serial DB9
14-008031-01	Cable - Receiver to USB
27-040811-01	TX radio option OAF for HiPer Ga series
99-864806-04	TRL-35 - HiPer Ga/Gb Add-on Special * (when added to a HiPer Ga or Gb system order. Does NOT include radio configuration kit.)
28-034012-02	Airlink Modem Comms Kit w/o modem (CDMA,GSM compatible)
28-034009-01	Kit, GSM Nextel Pouch & Cable
28-034009-02	Kit, GSM Motorola V60G Pouch & Cable
HiPer Ga Other Options and Accessories	
22-050902-01	Tape, 3M Measuring
9060-1339	Shipping Case, Single HiPer
9060-1346	Shipping Case, Dual HiPer Lite+
30-050503-01	UHF Antenna, 440-470MHz
30-070003-01	UHF Antenna, 410-440MHz
7010-0816	Manual, HiPer Ga/Gb Operating



*Tribrach Adapter Model S2
Part # 51861*



*Cable, Power, Receiver
to SAE
Part # 14-008016-03*



*Tribrach 20 w/ Optical
Plummet
Part # 55501*



*Shipping Case,
Single HiPer
Part # 9060-1339*



*Litepole (Composite Rod)
Part # 22-006004-01*



*2M Fixed Height Tripod
Part # 22-050501-01*



*Tape, 3M Measuring
Part # 22-050902-01*



*UHF Antenna, 440-470MHz
Part # 30-050503-01*

HiPer Lite+

Completely Cable-free, Integrated GPS+ RTK System



- **Super-fast and easy base station setup**
- **Cable-free rover works with Bluetooth® wireless technology equipped field controllers**
- **Integrated spread spectrum interference-free radio**
- **40-channel, dual-frequency GPS plus GLONASS availability**
- **Exclusive AMR and Co-op Tracking™ technology**

Dual-Constellation! GPS + GLONASS!

Topcon has designed a complete, integrated RTK Base and Rover system that is completely cable free. No more cables to break, and no more wasted time with a difficult base receiver setup. That's why we call this system HiPer Lite+. Less equipment to carry into the field, and less to forget back at the office!

Advanced Internal Radio Technology

The secret to HiPer Lite+ is the advanced internal radio technology that has allowed Topcon to create an integrated system. The design incorporates a high performance 915 MHz Spread Spectrum radio that provides superior interference-free communications up to 1.5 miles on your job site.

40 Channel Dual-frequency GPS+ Technology

HiPer Lite+ incorporates Topcon's advanced 40 channel dual-frequency GPS+ technology, the Paradigm™ Chip, and offers all the Topcon advances in tracking technology such as Co-Op™ tracking and Advanced Multipath Reduction (AMR).

HiPer Lite+ Specifications	
Tracking Specifications	
Tracking Channels, standard	40 L1 GPS (20 GPS L1+L2 on Cinderella* days)
Tracking Channels, optional	20 GPS L1+L2 (GD), GPS L1 + GLONASS (GG), 20 GPS L1+L2+GLONASS (GGD)
Signals Tracked	L1/L2 C/A and P Code & Carrier and GLONASS
Radio Specifications	
Modem Type	Spread Spectrum
Power Output	1.0W/0.25W (selectable)
Frequency	915 MHz
Memory and Recording	
Internal Memory	Up to 128 MB
Data Update Rate	Up to 20 times per second (20Hz)
Data Type	Code and Carrier from L1 and L2, GPS and GLONASS

* Cinderella feature activates GGD reception at GPS midnight every other Tuesday for 24 hours.

HiPer Lite+ Instruments and Accessories

HiPer Lite+ RTK Systems and Rovers	
Part #	Description
RTK Systems	
99-844802-07	HiPer Lite+ Basic, 1Hz, GD
99-844802-05	HiPer Lite+ Basic, 1Hz, GGD
99-844802-08	Kit, HIPER LITE+ GD PRO
99-844802-06	KIT, HIPER LITE+ GGD PRO
Rover Kits	
99-834802-05	HiPer Lite+ Rover Kit, 1Hz, GD
99-834802-06	HiPer Lite+ Rover Kit, 1Hz, GGD
99-834802-07	HiPer Lite+ Rover Kit, 10Hz, GD
99-834802-08	HiPer Lite+ Rover Kit, 10Hz, GGD
HiPer Lite+ Power Options	
14-008016-03	Cable, Power, Receiver to SAE
14-008052-01	Cable, Power, Charger
22-034101-01	Power Supply w/ 48" Safeco Conn
14-008023-01	Cigarette Lighter to SAE Cable
14-008025-01	Alligator Clips to SAE Cable
14-008022-01	SAE to SAE Extension Cable
HiPer Lite+ Platform Options	
51861	Tribrach Adapter Model S2
51940	Plug Adapter
55501	Tribrach 20 w/ Optical Plummet
22-050501-01	2M Fixed Height Tripod
30-034004-01	Heads Up Bubble
22-006004-01	Litepole (Composite Rod)
HiPer Lite+ Communication Accessories	
14-008005-03	Cable, Rec to Serial DB9
14-008031-01	Cable - Receiver to USB
Network OAFs - Allows Lite+ receiver to connect with cell modem to a network	
27-050002-01	Unlimited Range RTK 511-Rover
27-050004-01	All Ser Activ. 511/EXT PDL-Rover
HiPer Lite+ Other Options and Accessories	
22-050902-01	Tape, 3M Measuring
9060-1339	Shipping Case, Single HiPer
9060-1346	Shipping Case, Dual HiPer Lite+
30-030012-01	Antenna, Rubber Duck 915 RTNC
7010-0557	Manual, HiPer Lite Operator's



*Tribrach Adapter Model S2
Part # 51861*



*Cable, Power, Receiver
to SAE
Part # 14-008016-03*



*Tribrach 20 w/ Optical
Plummet
Part # 55501*



*Shipping Case,
Single HiPer
Part # 9060-1339*



*Litepole (Composite Rod)
Part # 22-006004-01*



*2M Fixed Height Tripod
Part # 22-050501-01*



*Tape, 3M Measuring
Part # 22-050902-01*



*Antenna, Rubber Duck 915 RTNC
Part # 30-030012-01*

GB-1000/GB-500

Advanced Design Modular GPS+ Receivers



- **Dual-frequency, dual-constellation GPS+ receiver board design**
- **Rugged, compact housing**
- **Complete user customization and upgradability**

GB-1000 Features

The GB-1000 offers a built-in LCD display and operation panel. This display and interface is ideal for checking satellite and receiver status, initializing RTK base operation, or managing static surveying operations. The GB-1000 also provides a Compact-Flash memory card slot and advanced communication support. With USB, serial, and Ethernet connections, nearly all communication links are supported including LAN, WAN, and Internet connectivity.



GB-500 Features

The GB-500 provides a simple MINTER display with LEDs providing satellite tracking, battery, and recording status. Both receivers hold two removable Li-Ion handy-cam batteries that you can hot-swap for constant operation, or use optional external power.

GB-1000 and GB-500 Specifications	GB-1000	GB-500
Tracking Specifications		
Tracking Channels, standard	40 L1 GPS (20 GPS L1+L2 on Cinderella* Days)	
Tracking Channels, optional	20 GPS L1+L2, GLONASS	
Signals Tracked, standard	20 L1/L2, C/A, P-Code, Full Cycle Carrier	
Measurement Modes	Static/Rapid Static, RTK Kinematic (Continuous mode and Stop & Go mode)	
Ports		
	3 Serial Ports 1 USB 1 Ethernet (10BASE-T) 1 Ext. Power 1 Antenna	3 Serial Ports 1 USB 1 Ext. Power 1 Antenna

* Cinderella feature activates GGD reception at GPS midnight every other Tuesday for 24 hours.

GB-1000/GB-500 Instruments and Accessories

GB-1000 Receivers and RTK Base Kits	
Part #	Description
RTK Base Kits	
99-854402-05	GB-1000 RTK Base kit, 5Hz, GD, w/digital TRL-35 radio
99-854402-06	GB-1000 RTK Base kit, 5Hz, GGD, w/digital TRL-35 radio
Radio Configuration Kits (REQUIRED w/Base Kit purchase)	
29-054903-01	35W Radio Configuration Kit, 410MHz to 430MHz
29-054903-02	35W Radio Configuration Kit, 430MHz to 450MHz
29-054903-03	35W Radio Configuration Kit, 450MHz to 470MHz
Add a HiPer GA or GR-3 UHF Rover kit to a GB-1000 base kit to purchase a complete RTK system.	
GB-500 Receivers and RTK Base Kits	
RTK Base Kits	
99-854502-16	GB-500 RTK Base kit, 5Hz, GD, w/digital TRL-35 radio
99-854502-17	GB-500 RTK Base kit, 5Hz, GGD, w/digital TRL-35 radio
Radio Configuration Kits (REQUIRED w/Base Kit purchase)	
29-054903-01	35W Radio Configuration Kit, 410MHz to 430MHz
29-054903-02	35W Radio Configuration Kit, 430MHz to 450MHz
29-054903-03	35W Radio Configuration Kit, 450MHz to 470MHz
Add a HiPer GA or GR-3 UHF Rover kit to a GB-500 base kit to purchase a complete RTK system.	
GB-1000/GB-500 Power Options	
14-008016-03	Cable, Power, Receiver to SAE
14-008052-01	Cable, Power, Charger
22-034101-01	Power Supply w/ 48" Safeco Conn
30-000077-01	33AH Rechargeable battery
14-008023-01	Cigarette Lighter to SAE Cable
14-008025-01	Alligator Clips to SAE Cable
14-008022-01	SAE to SAE Extension Cable
GB-1000/GB-500 Platform Options	
51861	Tribrach Adapter Model S2
51940	Plug Adapter
55501	Tribrach 20 w/ Optical Plummet
22-050501-01	2M Fixed Height Tripod
30-034004-01	Heads Up Bubble
22-006004-01	Litepole (Composite Rod)
GB-1000/GB-500 Communication Accessories	
14-008005-03	Cable, Rec to Serial DB9
14-008031-01	Cable - Receiver to USB
14-008066-01 (GB-1000 only)	Cable, GB1000 Event Marker/PPS
14-050402-01	Cable, GB-1000/500 Antenna
GB-1000 Other Options and Accessories	
22-006011-32 (GB-1000 only)	Card, Flash Memory 32 Mb IND
22-006011-512 (GB-1000 only)	Card, Flash Memory 512 Mb IND
22-006011-001 (GB-1000 only)	Card, Flash Memory 1GB
22-050902-01	Tape, 3M Measuring
9060-1345	Case, GB-1000/HiPer+ Shipping
31-050402-01 (GB-1000 only)	Manual, GB-1000 (English)
31-050506-01 (GB-500 only)	Manual, GB-500 (English)



*Tribrach Adapter Model S2
Part # 51861*



*Cable, Power, Receiver
to SAE
Part # 14-008016-03*



*Tribrach 20 w/ Optical
Plummet
Part # 55501*



*Tape, 3M Measuring
Part # 22-050902-01*



*Litepole (Composite Rod)
Part # 22-006004-01*



*2M Fixed Height Tripod
Part # 22-050501-01*



*Cable, GB-1000/500
Antenna
Part # 14-050402-01*

PG-A1

High-Precision, Lightweight GPS+ Antenna

This dual-frequency, dual-constellation, geodetic antenna clearly demonstrates Topcon's antenna expertise is world class. With precision micro-center antenna technology, you have the best design available to achieve the highest horizontal and vertical accuracies. The integrated ground plane also helps eliminate errors caused by multipath.

The PG-A1 antenna is designed to accompany the Topcon modular receivers such as the GB-1000, GB-500, Legacy-E+, and Odyssey-RS as well as the ground breaking GRS-1.



PG-A1 Specifications

Frequency	Dual Frequency GPS + GLONASS
Weight	492g
Dimensions	141.6 x 141.6 x 53.7mm
LNA Gain	30 ± 2dB
Environmental	Waterproof
Shock Resistance	2-meter Pole Drop

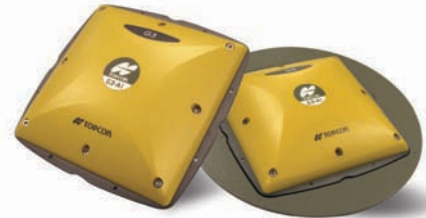
PG-A1

Part #	Description
01-844201-11	PG-A1 Antenna w/Groundplane, w/o cable
01-844201-02	PG-A1 Antenna w/o Cables

G3-A1

Micro Centered GPS+ Antenna

A multiple GNSS constellation antenna, the G3-A1 delivers outstanding GPS L1, GPS L2, GPS L5 signal reception as well as GLONASS L1 and L2 bands and Galileo.



G3-A1 Specifications

Size	141.6 x 141.6 mm (without Ground Plane)
Environmental	
MIL-STD-810F: Temperature (Methods 501.4, 502.4)	Operating Range: -50°C to +70°C Storage Range: -55°C to +85°C
Humidity	95% (Method 507.4)
Waterproof	IEC 60529 IPX5
Dustproof	IEC 60529 IP6X

G3-A1

Part #	Description
99-057002-01	G3-A1 Antenna w/GP, no cable
04-840202-01	G3-A1 dome cover only

GPS Cables and Field Accessories

Cables	
Part #	Description
14-004001-02	Cable, TNC to Amphenol 90
14-004001-04	Cable, TNC to Amp 90 230 mm
14-008005-03	Cable, Rec to Serial DB9
14-008006-02	Receiver to PC Parallel Cable
14-008016-03	Cable, Power, Receiver to SAE
14-008016-04	Ref. Station Power Cable (Receiver to SAE)
14-008017-01	2.3 A*H Battery Clip to SAE Cable
14-008022-01	SAE to SAE Extension Cable
14-008023-01	Cigarette Lighter to SAE Cable
14-008025-01	Alligator Clips to SAE Cable
14-008031-01	Cable - Receiver to USB
14-008042-01	Cable, GNSS Antenna, 90 Degree 1.1m
14-008044-01	Cable, Rover Radio Antenna 1.1m
14-008051-01	PZS-1 - Leg E/Ody E/GB Series cable
14-008052-01	Cable, Power, Charger
14-038001-01	Cable, Odyssey-E to Total Station
30-000048-01	PDL Antenna, 2.4dBi, 410-430MHz
30-000048-02	PDL Antenna, 2.4dBi, 430-450MHz
30-000048-03	PDL Antenna, 2.4dBi, 450-470MHz

GPS+ Field Accessories

Part #	Description
20-000010-01	Case Base Kit
20-000011-01	Case Rover Kit
20-000014-01	Fanny Pack
9060-1339	Shipping Case, Single HiPer
20-034002-01	Case, HiPer-2 w/Foam Insert
20-034003-01	Case, Odyssey-E
22-001001-01	2.3*H Leadacid Rech RG Bat
22-001002-02	2.3 A*H Battery Charger - 220V
22-001004-02	LI-Ion Battery Charger
22-006003-01	Litepole (Aluminum Rod)
22-006004-01	Litepole (Composite Rod)
22-050001-01	GPS Backpack w/adjustable Pole
22-006007-01	Bipod (Aluminum)
22-034101-01	Power Supply w/ 48" Safeco Conn
22-034102-01	1.83 - 2.0M Lazer-Zone composite rover rod
22-034103-01	.5 Meter Composite rod extension
22-034104-01	Lazer-Zone accessory bag
30-000002-01	Legacy-E/H Tripod Mount
30-000059-01	Bungee Strap for Backpack
30-002003-01	Maximizer Antenna Mount
30-003010-01	Hi Rod
30-030101-01	Odyssey-E Pole Mount Bracket
30-034004-01	Heads Up Bubble
22-050501-01	2M Fixed Height Tripod



*Tribrach 20 w/o Optical Plummet
Part # 55502*



*Tribrach Adapter Model - 2
Part # 51851*



*Rotating Tribrach Adapter Model 4
Part # 51841*



*Rotating Tribrach Adapter Model 5
Part # 51842*

PacCrest Communication Accessories

Part #	Description
30-000038-01	Pacific Crest Tripod Antenna Mast
30-000044-02	PDL DGPS Rover Kit (0W) 430-450MHz
30-000045-01	PDL DGPS Repeater Kit (35W) 450-470MHz
30-000045-03	PDL DGPS Repeater Kit (35W) 410-430MHz
30-000046-01	PDL Integrated UHF Receiver 450-470MHz
30-000048-03	PDL Antenna, 2.4dBi, 450-470MHz
30-000050-01	PacCrest PDL Topcon Rover Cable (2 meter)
30-003011-01	JPS SpSp Whip Antenna (5 dB Gain)
30-003012-01	Whip Antenna Pole Mount
30-003015-01	JPS SpSp Whip Antenna Cable & Mount (1.5 meter)
30-003016-01	SPSP Whip Antenna Cable/Mount Kit
30-004101-01	Integrated UHF Rubber Duck Antenna 450-470MHz

Tribrachs and Tribrach Accessories

Part #	Description
55501	Tribrach 20 w/ Optical Plummet
55502	Tribrach 20 w/o Optical Plummet
60063	Tribrach 5
60178	Tribrach 5 w/ Optical Plummet
22-006008-01	Tribrach
51841	Rotating Tribrach Adapter Model 4
51842	Rotating Tribrach Adapter Model 5
51851	Tribrach Adapter Model - 2
51852	Tribrach Adapter Model 2/30" Vial
51861	Tribrach Adapter Model S2
51862	Tribrach Adapter S2 w/ vial 30"
22-006009-01	Tribrach Adapter

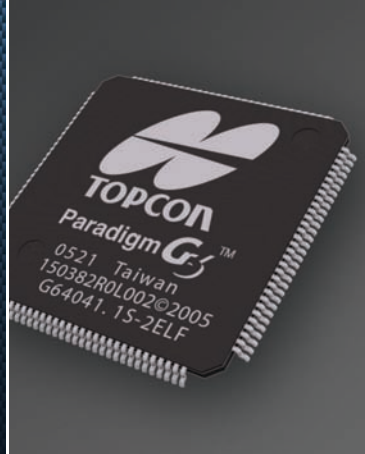
All tribrachs are sold without carrying case. Please order case separately, if required.

Tripods

Part #	Description
Wood Tripods	
59005	TP-5 WOODEN HD OR TRIPOD-22513
59010	TP-10 WOOD EXT LEG
59073	TP-73 QR WOOD TRIPOD W/PVC
Aluminum Tripods	
59071	TP-71 QR ALUM.TRIPOD-MED DUTY
59101	TP-100D DOME ALUM EXT LEG TRIP
59111	TP-110D DOME HVY DUTY ALUM TRI
59110	TP-110 HVY DUTY ALUM EXT TRIPO
57032	TRIPOD TP-100 EXT LEG 5/8-11QR

NET-G3A

Reference Station Receiver



- **Paradigm-G3® Chip – Triple Constellation Technology**
- **Super low power consumption**
- **144 Universal Channel Satellite tracking**
- **Superior signal tracking and performance**
- **100 percent compatible with all signals for both existing and future planned satellite navigation systems**

Complete Signal Tracking Technology for Now and Into the Future

The NET-G3A, incorporating Topcon's G3 chip technology, is the World's First reference receiver to provide Universal Signal Tracking – all signals from all three global satellite positioning constellations (GPS-GLONASS-Galileo). Using a unique patented technology, the NET-G3A incorporates 144 Universal Tracking Channels, capable of tracking all signals from all satellite systems that are currently in use and planned for the future.

Through simple firmware changes, the selection of which signals and codes tracked can be changed very easily. Should new signals or frequencies be added or changed in the future, they can be accommodated through receiver firmware only, without expensive and inconvenient hardware changes.

NET-G3A Specifications

Tracking Specifications

Number of Channels	144 Universal Channels
Signals Tracked:	
GPS	L1, L2, & L5 carrier, CA, L1 P, L2 P, L2C
GLONASS	L1, L2, & L5 carrier, L1CA, L2CA, L1 P, L2 P
GALILEO	Galileo*
Antenna Type	CR-G3 Choke ring, G3-A1 Geodetic

Communications

TCP/IP Address	Up to 5 different address ports standard
NTRIP	Client and Server functionality
Ports	4 Serial, 1 USB, 2 Power, 1 Ethernet
HTML Web User Interface	Web User Interface access via Internet Explorer, Firefox, and Opera

* The NET-G3A receiver tracks the GIOVE-A and GIOVE-B test satellites and is intended for evaluation purposes only.

NET-G3A Basic System

Part #	Description
99-064711-02	KIT, NET-G3A w/Standard Options
Comprised of:	
01-064711-01	KIT, NET-G3A Boxed + 1GB
27-064711-01	OAF, Bundle NET-G3A Std Options

TopNET

Reference Station Software Suite



- **Supports GNSS operation**
- **Scalable solution in both functionality and geographic coverage area**
- **Functionality for Continuously Operating Reference Stations (CORS) to modeled network data corrections easily added**

TopNET CORS: Entry level CORS (Continuously Operating Reference Station) product providing advanced support for Post Processed Geodetic and Mapping Surveys. RTK (single baseline vectors) service is possible via UHF radio(s) broadcasting from each reference station.

TopNET RTK: Advanced CORS and RTK (single base) data services offers the same features as TopNET CORS plus rover communications by cellular/internet.

TopNET +: Full suite of GNSS Reference Network management tools builds on TopNET-N (software module used to network reference stations) by adding Network RTK (modeled solution) to the data services available. Extends traditional RTK capabilities and significantly improves initialization times when the rover is long distance from the nearest reference station.

TopNET Comparison Chart			
Functionality	TopNET CORS	TopNET RTK	TopNET +
TopNET-S Module	X	X	X
TopNET-R Module	X	X	X
TopNET-N Module		X	
TopNET-V Module			X
Accounting Module		X	X
Download Center	X	X	X
Remote Firmware Upgrade	X	X	X
Complete Receiver Control	X	X	X
Cellular Connection		X	X
RTK Correction		X	X
Automatic Selection of Closest Reference Station to a Rover Receiver		X	X
Selection of a Specific, User Selectable Reference Station		X	X
Incorporation of Third Party Reference Stations		X	X
Network RTK Correction			X

TopNET Kits	
Part #	Description
29-050011-01	KIT, TOPNET CORS SOFTWARE
29-050012-01	KIT, TOPNET RTK N=4 SOFTWARE
29-050013-01	KIT, TOPNET RTK RS ADD-ON (5+)
29-050014-01	KIT, TOPNET RTK UPGRD, N=4
29-050421-01	KIT, TOPNET RTK N=1 SOFTWARE
29-060001-01	KIT, TOPNET NETWORK RTK, BASE PKG, N=4 SOFTWARE
29-060002-01	KIT, TOPNET NETWORK RTK RS ADD-ON
29-060007-01	KIT, RTK TO NETWORK RTK UPGRADE RS ADD-ON

CR-G3 Choke Ring

Triple Constellation GPS+ Antenna

The Topcon CR-G3 all-weather, newly designed choke ring antenna provides GPS L1, GPS L2, GPS L5 signal reception as well as GLONASS L1 and L2 bands and Galileo for precision geodetic applications including GNSS reference networks and infrastructure monitoring.



CR-G3 Choke Ring Specifications

Environmental

MIL-STD-810F: Temperature (Methods 501.4, 502.4)	Operating Range: -50°C to +70°C Storage Range: -55°C to +85°C
Humidity	Fully Sealed and Waterproof
Waterproof	IEC 60529 IPX7
Dustproof	IEC 60529 IP6X

CR-G3

Part #	Description
Antenna Kits - GPS+ Dual Frequency	
01-044301-01	Assy, CR-G3 Choke Ring Antenna
Antenna Kits - G3 and L5 Compatible	
99-057007-01	CR-G3 Choke-ring antenna, no cable
99-057005-01	CR-G3 Choke-ring antenna, w/30 meter cable
99-057004-01	CR-G3 Choke-ring antenna w/dome, no cable
99-057006-01	CR-G3 Choke-ring antenna w/dome & 30 meter cable
Antenna Cables	
14-008082-01	CR-G3 antenna cable, LMR400, N-N, 30M
14-008082-02	CR-G3 antenna cable, LMR400, N-N, 60M
14-008096-01LF	CR-G3 antenna cable, LMR600, N-N, 100M
99-060001-01	CR-G3 dome cover kit

G3-A1

Micro Centered GPS+ Antenna

A multiple GNSS constellation antenna, the G3-A1 delivers outstanding GPS L1, GPS L2, GPS L5 signal reception as well as GLONASS L1 and L2 bands and Galileo.



G3-A1 Specifications

Size	141.6 x 141.6 mm (without Ground Plane)
Environmental	
MIL-STD-810F: Temperature (Methods 501.4, 502.4)	Operating Range: -50°C to +70°C Storage Range: -55°C to +85°C
Humidity	95% (Method 507.4)
Waterproof	IEC 60529 IPX5
Dustproof	IEC 60529 IP6X

G3-A1

Part #	Description
99-057002-01	G3-A1 Antenna w/GP, no cable
04-840202-01	G3-A1 dome cover only

TopNEXT

GNSS Reference Station Network



- **Dual-frequency, dual-constellation GNSS reference station receivers**
- **Reference Station Coordinates have been professionally surveyed and adjusted by geodetic surveyors**
- **All network reference stations are continuously monitored**
- **Direct connection to the National Spatial Reference System**
- **Reliable 24/7 operation**

Cooperative Geodetic Reference Network reliably delivers precision real-time GNSS data where you need it, when you need it.

TopNEXT GNSS Reference Network Real-time Data Services Explained

TopNEXT DGPS

Real Time, differential GPS corrections (DGPS) are computed and broadcast from each reference station. GIS and mapping customers will be connected automatically to the nearest reference station to maximize accuracy potential.

RTK

The Real Time Kinematic (RTK) service will automatically connect your rover to the nearest reference station using the low bandwidth, industry standard RTCM 3.0 data format.

Network RTK

TopNET collects data from all the available reference stations and forms a correction field, where precise values can be calculated at any point inside the field.

From these corrections and user's coordinates sent by the rover (standard NMEA-0183 GGA message), TopNET simulates a reference station receiver located close to the rover. The generated data are sent to the rover using the industry standard RTCM 3.0 data format and used for obtaining precise solutions.

TopNEXT Subscriptions

On-Line Subscription Service

visit www.topconpositioning.com for details

DGPS, RTK, Modeled Network Solutions

Depending on location: daily, weekly, monthly, quarterly or annual subscriptions are available.

For general inquiries regarding:

- The TopNEXT Real Time Network
- Reference network products
- Hosting a Coop Real Time Network

Contact: TopNEXT@topcon.com

GLS-1500

Compact, Operator-friendly Laser Scanner



- **Compact all-in-one design**
- **Precise Scan Technology**
- **Hot-swappable, on-board Li-ion batteries**
- **Class 1 invisible, eye-safe, pulse laser**
- **Built in 2.0 megapixel digital camera**
- **Wireless LAN & USB connectivity**
- **Dual Axis compensators**
- **30,000 points/second scan rate**
- **1100 ft (330m) maximum range at 90% reflectivity, 500 ft (150m) maximum range at 18% reflectivity**

All-in-one Design

Topcon's GLS-1500 laser scanner leaves nothing behind—except the competition. The operator-friendly design allows for quick and hassle-free setups which saves time and improves productivity. With batteries and data collector on-board, Topcon's GLS-1500 is lightweight and cable-free. Transportation is a cinch. While other laser scanners take two people to unload, set up, operate, and load, the GLS-1500 is a one man instrument.

On-board Data Collection

The GLS-1500 has an on-board data collector with an LCD display and a 21-key keyboard. This gives the scanner the freedom to function as a stand-alone laser scanner with no connection to a computer.

Eye-safe and Efficient

Use the GLS-1500 anywhere without worrying about damaging the eyes of a passerby. The GLS-1500 uses an invisible, Class 1, eye-safe laser. Scan near airports, busy traffic, and populated areas with no effect to the people or the environment. In addition, the use of a Class 1 invisible laser offers the benefit of low power consumption. With lower power consumption, the GLS-1500 can operate at longer times with fewer battery changes.

GLS-1500 Specifications

System Performance

Maximum Range at specified reflectivity	1100 ft. (330m) at 90%, 500 ft. (150m) at 18%
Single Point Accuracy	Distance: 0.16 in. from 1ft. to 500 ft. (4mm from 1m to 150m)
Dual Axis Compensators	Angle (vertical): 6" Accuracy, Angle (horizontal): 6" Accuracy

Laser Scanning System

Laser Class	Class 1
Scan Rate	30,000 points/second
Field-of-view (Per scan)	Horizontal: 360° (maximum), Vertical: 70° (maximum)
Color Digital Imaging	2.0 megapixels digital camera

Electrical

Power Supply	On-board Lithium-ion battery BT-65Q x4, Approx. 4.0 hours per 4 pcs, Hot-swap (2 by 2)
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Scanning Control

Equipment for Controlling	On-Board computer (stand-alone) or PC
Communication Method for PC	Wireless LAN

GLS-1500 Instruments & Accessories

GLS-1500	
Part #	Description
60861	GLS-1500 Laser Scanner
60860	GLS Backpack
GLS-1500 Accessories	
60805	Target Tilting Board Large
60804	Target Tilting Board Medium
60700	BC-30D (120V) DUAL Charger
60487	BT-65Q Battery
60806	Target Small, pack of (10)
60807	Target Medium, pack of (10)
60808	Target Large, pack of (10)
60801	Target Small Magnet Quantity (1)
60802	Target Medium Magnet Quantity (1)
60803	Target Large Magnet Quantity (1)
60243	CABLE, F-25 USB
60809	Tripod, Wood Dual Clamp
60810	Tripod, Alum, Extra Elevate
60811	Tripod, Giant Elevate



*BC-30D (120V)
Dual Charger
Part # 60700*



*BT-65Q Battery
Part # 60487*



*Cable, F-25 USB
Part # 60243*



*Tripod, Wood Dual Clamp
Part # 60809*



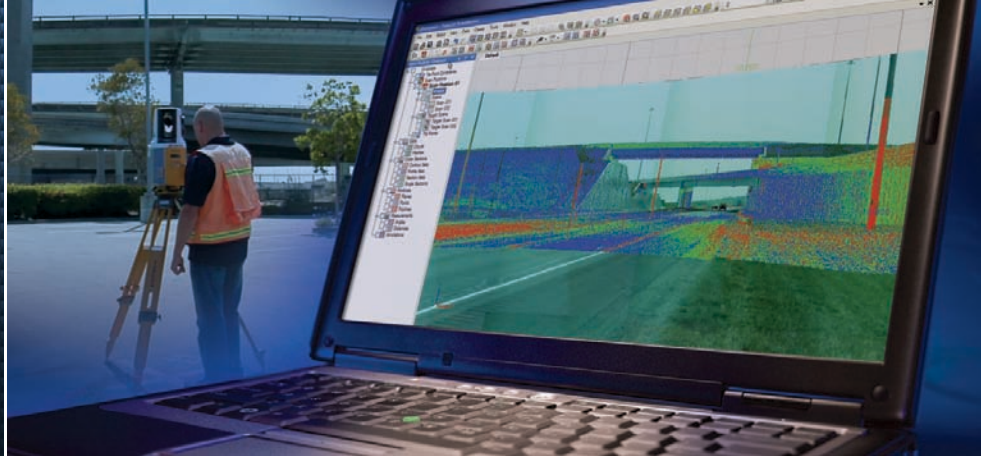
*Tripod, Alum, Extra Elevate
Part # 60810*



*Tripod, Giant Elevate
Part # 60811*

ScanMaster

3D Point Cloud Acquisition/Manipulation Office Software



Mass 3D Point Cloud Acquisition and Manipulation

ScanMaster has been optimized to quickly acquire and manipulate 3D point cloud data. Stream live video to set up the desired scan area and obtain the 3D point cloud data you need.

Traverse and Back Sight Capabilities

With the ability to quickly traverse and back sight, ScanMaster streamlines the process of aligning data captured from multiple occupations into a single coordinate system.

Image Capture and Live Video Feed

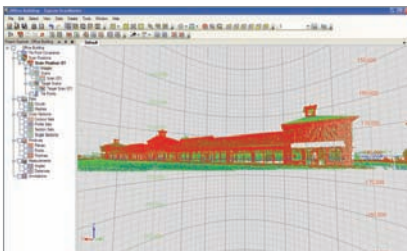
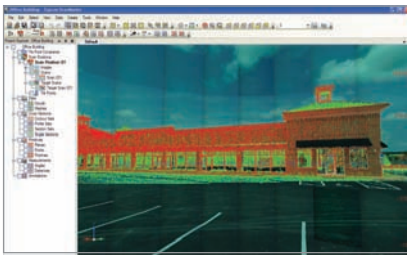
ScanMaster uses images to streamline data acquisition. Images can also be used to apply RGB data and texture map scanned data. In addition, ScanMaster can stream a live video feed from the GLS-1500 Scanner via WLAN to a remote PC.

Target Scans and Tie-point Registration

With the ability to precisely locate centers of retro reflective targets, ScanMaster offers a flexible and highly accurate alternative to traditional orientation techniques.

Create Mesh Objects and Annotations

ScanMaster can quickly create mesh objects. These mesh objects are triangulated surfaces that pass through a section of data points, that can be used to create cross-sections and profiles. ScanMaster can also quickly annotate desired information such as angles and distances.



ScanMaster Required System Requirements

Processor Speed	Intel® Core™ 2 Duo @ 2.00GHz required (2.66GHz recommended)
RAM	1 GB required (2+ GB recommended)
Video Card	Discreet video card with 128 MB of memory and with full support for DirectX 9.0c, vertex and pixel shaders v2.0 required (Nvidia or ATI discreet video card with 256+ MB of memory recommended)
Wi-Fi	802.11g Wi-Fi adapter
USB	USB 2.0 port

ScanMaster

Part #	Description
60787	ScanMaster Office Software

[illegible]

NOTES:

[illegible]

NOTES:

[illegible]



Productivity Powered by Learning

Topcon University is a world-class training program dedicated to the education of Topcon customers about today's technology and methods. Our slogan, "Productivity Powered by Learning," illustrates the fundamental mission of TU: to provide the training required so that everyone can get the maximum productivity and efficiency out of Topcon products and systems. The more you and your crew know about your equipment, the more productive and profitable your work becomes.

Training programs and materials vary according to the type of equipment or software and must also provide a variety of learning options for students. From simple quick-start guides that can be printed and taken to the field, to online, on-demand training modules, to instructor-led classroom training, there are training options to fit almost any system requirement or learning style. Providing world-class comprehensive training is our on-going mission, and we are hard at work developing new material constantly.

Online, Interactive Training – With busy and ever-changing work schedules, today's surveyor needs flexibility, and TU Online provides just that. We have extensive on-demand training modules on our online training portal that allow you to learn when you want, and at your own pace. Never miss out on training again, or have to juggle an already full schedule to get to class. TU Online (www.topconuniversity.com) is the focal point of all training programs and materials and also allows access to other information to maximize your learning experience. Here you will find volumes of helpful information including:



www.topconuniversity.com

- On-Demand Learning Portal
- Instructor-led Training Course List
- Product Manuals & Information
- Training Videos
- TU-Live Webinar Archive
- TU Calendar of Events
- TU Approved Software & Firmware Downloads
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- And much, much more!

One annual subscription gets you all of this:

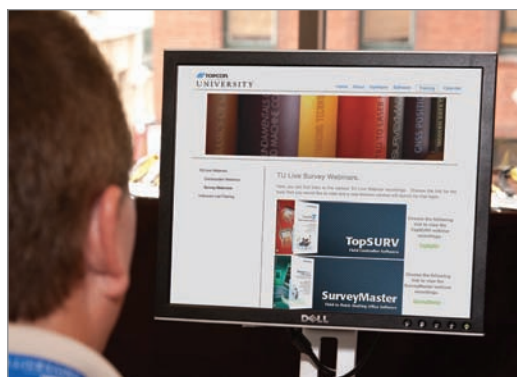
- Unlimited access to Topcon University Online training materials
- Invitations to our weekly webinar series
- Discounted rates on instructor-led training
- Firmware and Software updates, through Topcon University Online

Subscription packages vary by the number of enrollees per organization. Contact your local dealer, and make sure that you secure the benefits of Topcon University at the same time you receive your new instrumentation and software.



► Why should YOU enroll?

It is commonly recognized that with technology solutions, users frequently understand and use just a fraction of the power available. The best way to take advantage of these advances to build your success is through professional, comprehensive training. The goal of Topcon University is to help you unlock the power that Topcon has built into its solutions. Enroll with Topcon University today, and discover how much more productive you can be!



► TU Live Webinar Series

The Topcon University staff hosts weekly short-course webinars to cover important product topics and information. Each course will consist of a 20-30 minute webinar focused on a particular topic followed by an open question and answer period. Each webinar should take 40-45 minutes depending on questions. Missed the webinar? Don't worry! Each weekly webinar will be recorded and available for playback anytime on the TU web site. A significant archive of these short course webinars on specific product information is already available anytime to our enrollees for their reference and education, along with the other TU courses. For webinar schedules, please go to www.topconuniversity.com.

► Instructor-led Training Programs

Topcon University has assembled several instructor-led training programs for our customers. Each course comes complete with training materials for the students. A calendar of these programs is always available at www.topconuniversity.com. Additional programs that fill a specific training requirement can also be designed to meet your individual needs. Simply contact your local dealer to determine what can be put together depending on time and resource constraints. Training programs can be tailored to end-user requirements.



Enroll Today!

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UNIVERSITY



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