



# LAND-PAK

- Rugged, reliable Land Survey solution
- Easy-to-use FieldGenius controller software
- Office CAD & GNSS post process software
- Built-in UHF radio link
- Ultra RTK (GPS + Glonass & Galileo ready)
- GSM 3G Network RTK support
- Lifetime StarFire license
  - 10cm standalone operation
  - RTK Extend™ through base station outages
- Removable SD card for static survey
- 3 year warranty



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# LAND-PAK



## LAND-PAK

The LAND-PAK system provides an unprecedented level of performance and flexibility by including both RTK and StarFire capabilities as standard. Ultra RTK™ provides cm level performance up to 40 km from the base station while StarFire provides decimeter operation anywhere, anytime without the need for a base station. With NavCom's patented RTK Extend™ feature, users can work in challenging environments and maintain RTK-level accuracy even during base station radio outages.

LAND-PAK includes, as standard, easy to use controller, office and GNSS post processing software, the SF-3040 GNSS receiver along with all the necessary hardware and accessories making it a complete turn-key land survey solution. The rugged, waterproof and shock proof design coupled with hot swappable batteries ensures continuous operation in the harshest of environments.

UHF and GSM communication links with support for multiple RTK formats allows the LAND-PAK rover to work with a variety of base stations and RTK networks. The Sapphire™ GNSS technology with multi-constellation (GPS, Glonass and Galileo ready) support and superior signal sensitivity allows operation even in shaded environments.

Quick setup, ease of use and superb performance allows LAND-PAK to meet the needs of even the most demanding surveyor.

### FEATURES

- Integrated UHF and GSM support
- Bluetooth® Cable free, all-on-the pole design
- Multi-constellation support (GPS, Glonass and Galileo ready)
- Ultra RTK (up to 40K baseline)
- Network RTK with support for multiple message formats
- Built-in StarFire receiver with lifetime license
- StarFire 10cm standalone accuracy
- RTK Extend™ – Coast through base station outages
- Dual hot swappable batteries for continuous operation
- SF-3040 GNSS receiver operates as a base or rover
- Water proof and shock resistant
- 3 year warranty

# All The Right Tools Included



## LAND-PAK System

### SF-3040 Receivers (Qty 2) Included

- L1, L2, G1, (G2 or L5) Navigation 5Hz
- StarFire Enabled
- Lifetime StarFire License
- RTK including Network RTK
- RTK Extend

### Receiver Accessories Included

- USB Configuration Flash Drive
- 1 Watt UHF 403-473Mhz (Qty 2)
- UHF Module Antenna
- Li-Ion Batteries (Qty 4)
- SD Memory Cards (Qty2)
- USB Device Cable, 6ft
- COM1 Serial Cable, 6ft
- Battery Charger, Dual Bay (Qty 2)

### Hardware Accessories Included

- Aluminum Rover Pole
- Clamp & Pole Clamp for Controller
- Wood & Fiberglass Tripod
- Fiberglass Extension Rod
- Tribrach w/ optical plummet
- Fixed Tribrach Adapter
- GPS Pocket Rod/Tape Measure
- Hard Shell Transit Case
- Canvas Tripod Bag

### LAND-PAK Controller and Software Included

- NavCom Nautiz X7 Controller Kit

### Software Included

- NavCom FieldGenius Survey Software
- NavCom SurveyCAD 2011
- NavCom StarPoint Post Processing Software

## LAND-PAK Network Rover

### SF-3040 Receivers (Qty 1) Included

- L1, L2, G1, (G2 or L5) Navigation 5Hz
- StarFire Enabled
- Lifetime StarFire License
- RTK including Network RTK
- RTK Extend

### Receiver Accessories Included

- USB Configuration Flash Drive
- Li-Ion Batteries (Qty 2)
- SD Memory Cards (Qty1)
- USB Device Cable, 6ft
- COM1 Serial Cable, 6ft
- Battery Charger, Dual Bay (Qty 1)

### Hardware Accessories Included

- Aluminum Rover Pole
- Clamp & Pole Clamp for Controller
- GPS Pocket Rod/Tape Measure
- Hard Shell Transit Case

### LAND-PAK Controller and Software Included

- NavCom Nautiz X7 Controller Kit

### Software Included

- NavCom FieldGenius Survey Software
- NavCom SurveyCAD 2011
- NavCom StarPoint Post Processing Software

**LAND-PAK**  
More  
Your Complete Survey System

# LAND-PAK TECHNICAL SPECIFICATIONS

## PERFORMANCE<sup>(1)</sup>

- Multi-constellation Support  
Multi-frequency GNSS SBAS GPS, Glonass and Galileo ready StarFire, WAAS, EGNOS, MSAS & GAGAN
- Accuracy (RMS)  
RTK: <40km  
RTK Extend (<15min)  
StarFire  
Static (post processed)  
Velocity  
0.01ms  
Horizontal / Vertical  
1cm + 0.5ppm / 2cm + 1ppm  
3cm + 1ppm / 6cm + 2ppm  
<10cm / <15cm  
5mm + 0.5ppm / 10mm + 0.5ppm
- Position & Raw data rates  
1Hz, 5Hz, 10Hz

## COMMUNICATIONS

- Integrated UHF radio  
1 watt, 403-473MHz
- GSM 3G  
Integrated in the controller
- Ports  
2 x RS232, USB 2.0 (Host or Device), Bluetooth™
- Data message formats  
Differential Correction  
RTCM 2.3 and 3.1, SBAS, and StarFire (proprietary)
- RTK Correction  
CMR/CMR+, RTCM, NavCom Proprietary UltraRTK™
- Memory  
Removable 2 GB SD card

## ENVIRONMENTAL

- Power  
Batteries Li-Ion 2.2 Ah 7.4v  
External Power Nominal 12v DC, 0.5A (9-32v range)
- Temperature (ambient)  
Operating -20° to +45° C (-4° to +113° F)  
Storage -40° to +85° C (-40° to +185° F)
- Enclosure  
IP66 (waterproof/dustproof)  
Shock resistant (2m pole drop)  
FCC / CE
- Certifications

## CONTROLLER

- Type  
Nautiz X7
- Display  
Sunlight readable, Color LED / Touch screen, VGA resolution (480x640)
- Operating system  
Windows® Mobile 6.1
- Communication  
PAN: Bluetooth 2.0 + EDR
- WLAN:  
Integrated 802.11b/g  
GSM/UMTS (HSDPA/EDGE)  
5600 mAh Li-ion battery pack  
4 GB iNAND Flash  
Integrated 3MP camera & LED Flash  
-30 C to +60 C  
Waterproof (IP67), Shock/vibration resistant (MIL-STD-810G)  
FCC / CE
- Battery
- Storage
- Camera
- Temperature
- Enclosure
- Certifications

<sup>(1)</sup> Performance dependent on location, satellite geometry, atmospheric conditions and GNSS corrections. Technical specifications subject to change at NavCom's discretion

## LAND-PAK DATA COLLECTOR SOFTWARE

### NAVCOM FIELDGENIUS KEY FEATURES

- Modern Windows Interface with Smart Menus, Smart Objects, Incredible Graphics
- Real-Time Drawing Generation with Automatic Linework
- Enter, edit, and stake points
- Built in COGO - Intersections, Inversing, Traversing
- DXF Import of Background and Coordination of lines, arcs, polylines and points
- 3D Data View with Dynamic Zoom, Pan, Scroll
- Import/Export DXF, ASCII or FBK for painless Autodesk import of raw data, points and linework
- Automatic Geodetic Transformations
- One Button File Transfer to Desktop Systems
- RTK network support via GSM
- StarFire support
- Support for total stations

## LAND-PAK DESKTOP SOFTWARE

### NAVCOM SURVEYCAD 2011 KEY FEATURES

- Enhanced Point Cloud Visualization and Manipulation - Powerful graphics and point cloud engine that is highly optimized for viewing and working with large data sets.
- Integrated Survey, Design and CAD Functions - Download, Calculate, Design, Draft, Check and Print - all incorporated into a productive field-to-finish package
- Powerful Survey Calculations - Cogo, coordinate transformations, Multi-point averaging, cluster analysis, right of ways, areas, fixed areas, mass intersections, multiple perpendicular ties and stake computations
- Complete Traverse or Network Adjustments - Angle Balance, Transit, Compass, Crandall's Classical Methods, Vertical Balance, Full 3D Least Squares Adjustment and Reprocessing & pre-analysis

- Active Drawing Technology - Enables verification, editing, printing and manipulation of data in the drawing, in the coordinate and traverse databases, and during COGO calculations
- Powerful DTM Contouring/Modeling Volumes - 3D rendering and Virtually unlimited point capability
- Complete Site Design - Ponds, ditches, stockpiles, slopes and Horizontal and Vertical Alignments, Cross Sectional Templates for road design

## LAND-PAK GNSS POST PROCESSING SOFTWARE

### NAVCOM STARPOINT KEY FEATURES

- Base Station data
  - Utilize data from a dedicated or nearby base station
  - Automatically searches the internet and downloads data from a nearby base station(s)
- Coordinate System
  - 62 standard datums and 22 standard ellipsoids predefined
  - 12 different map projection templates including full support for the US State-Plane coordinate system
- Rigorous Automated Processing Engine
  - Static
  - Rapid static
  - Stop and go
  - Kinematic
  - Semi-kinematic
  - OTF (for single and dual frequency receivers)
- Quality Control
  - Editing of GNSS data file properties
  - Graphical representations of phase or code residuals
  - Graphical tools to help analyze cycle-slip occurrences in data
  - Loop closure utilities for users creating networks of baselines
  - Common vector analysis
  - Least Squares Adjustment to adjust network of baselines



A John Deere Company

20780 MADRONA AVENUE, TORRANCE, CA 90503 USA

WWW.NAVCOMTECH.COM • SALES@NAVCOMTECH.COM

TEL: +1 310 381 2000 • FAX: +1 310 381 2001

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