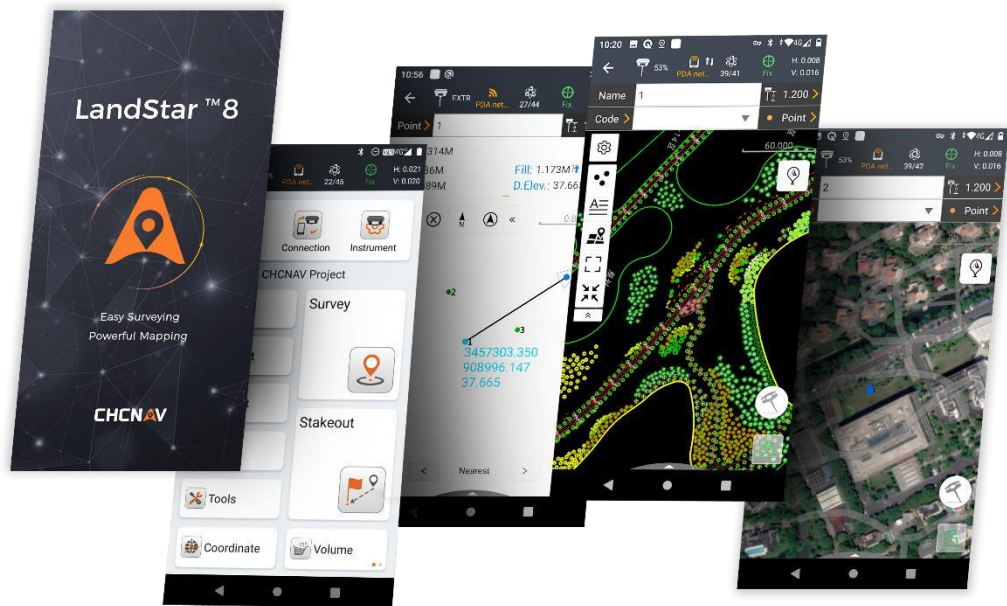




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Make your work more efficient

1. What is LandStar™ 8?

The LandStar™ 8 is a fully featured and intuitive field data collection Android App designed for high precision surveying, stakeout, mapping, GIS data collection, road stakeout and pipeline surveying.



LandStar™ 8 software makes your work more efficient from field-to-finish!

2. How to update to LandStar™ 8?

- ☐ Method 1: Go to About interface, tap **Check for Update**, the LandStar™ 8 version will pop up, tap **Update Now** to update the software to the latest version.
- ☐ Method 2: Download **CHCNAV Installation Manager** from Google Play Store and then upgrade to LandStar 8 via **CHCNAV Installation Manager**.
- ☐ Upgrading from LandStar 7 to LandStar 8 is free, and for new users you can apply for a 3-month free trial!

3. How to register LandStar™ 8?

- ☐ Online registration is available on the "About" page.
- ☐ Name, email address and country are required to receive an activation email.
- ☐ Activate the link in your email, then return to the "About" page to get the temporary code or input the pre- code to get a permanent code.
- ☐ The temporary code can be requested three times, each code can be used for one month.
- ☐ If you change your device, you must unbind your old device and re-register the new one.

4. What are the key features of LandStar™ 8?

USER-FRIENDLY OPERATION

- ☐ New layout with large map window and sharp graphics makes it easier for users to work mapbased.
- ☐ **Video Help** in different localized languages are provided to facilitate users to quickly master the skills of using the software.
- ☐ Modular design provides the flexibility to meet the needs of users in different industries with a wide variety of features.
- ☐ The new **Simple Style** allows new users to get familiar with the software quickly.

START SURVEYING IN A FRACTION OF SECONDS

- ☐ Projects can be sorted by name or when last edited, so that users can find historical projects quickly.



- When copying projects, users can copy control points or enter points from old projects easily.
- When creating a project, users can easily copy the coordinate parameters in another handheld controller using **QR Code**.
- Users can view the project properties and modify the project name.
- Users can more easily apply RTCM broadcast messages (1021-1027) for datum transformation, and the LandStar™ 8 displays parameter reception status in real-time.
- Users can dynamically update coordinate system, geoid model and other coordinate parameters by **Localization Packages**.
- Provide **Guide-Style Site Calibration** interaction design, easy for non-expert to use.

ADVANCED DISPLAY OF BASE MAPS

- LandStar™ 8's proprietary **MetaCAD™** graphics engine opens DWG and DXF base maps faster, with smoother rendering and an improved user experience.
- When staking out, the base map can be automatically rotated with the direction of the handheld controller, easier to find staked out points.
- Smart Drawing functions include **Quick Code** for one-click feature coding to automatically create line features to increase project productivity.
- Support to open external reference files, automatic recognition of CAD length units, and allow editing of CAD drawings in the field.
- Select points or lines to stake from the map instead of selecting from a list.

EXTENDED CLOUD CONNECTIVITY

- LandStar™ 8 is designed around an integrated cloud-based architecture, supporting project backup, collaborative work, data storage, and many other valuable features.
- Its **Remote Support** function helps the office helpdesk resolve user issues and provide personalized technical assistance.
- With the **Sharing Code** feature, users can quickly transfer project data between office computers and field controllers or between different field controllers to further enhance work efficiency.

EXTENSIVE IMPORT AND EXPORT DATA FORMATS

- Import from DXF, SHP, KML, KMZ, CSV, DAT, TXT and CGO formats.
- Export to DXF, SHP, KML, KMZ, RAW, HTML, CSV, DAT, TXT formats.
- Customized import and export contents in CSV, DAT or TXT formats.



STANDARD CGD CORRECTION FILE

- Proprietary CHCNAV CGD file for grid and geoid correction. The reference grid, plane grid, and height geoid files are integrated into one CGD file, and each CGD file name corresponds to the coordinate system.
- Multiple grid formats are available, GGF, BIN, GRT DAT, DATCZ, GRD, GSF, GRI and ASC formats.

CORRECTION REPEATER FUNCTION

- Easy to rebroadcast correction data from RTK network or radio mode to other rovers via radio.

5. What can I do with LandStar™ 8?

LandStar™ 8 is suitable for multiple applications.

- Connect with a CHCNAV GNSS receiver to provide a solution to land surveying applications. Point surveying, point stakeout, line stakeout and surface stakeout are all available. Powerful online and offline maps provide a superior field experience.
- With a CHCNAV GNSS receiver and the LandStar™ 8 road feature, you can move into the road design and road stakeout applications. LandStar™ 8 supports horizontal alignment, vertical alignment, slope and structure, as well as LandXML.
- Based on LandStar™ 8's custom GIS attributes, you can support the most standard GIS applications. LandStar™ 8 can collect not only basic GIS attributes such as name, code, height, but also image, voice and video. The **Quick Code** feature allows users to simultaneously survey polylines and polygons while sharing data points to ensure project requirements are met.
- Surveying underground pipelines is simple using the integrated data from the GNSS receiver and the pipeline detector. Users can store high accuracy pipeline coordinates with attributes for export to SHP/CSV files.
- Building on existing surveying and marine mapping applications, LandStar™ 8 also integrates positioning, routing, navigation, sounding, and data export into a single operation using GNSS receiver and echo sounder data. Users can obtain high-accuracy coordinates, depth, seabed elevation, surface elevation and QA for export to CSV files.



6. What types of devices are supported by LandStar™ 8?

- GNSS receiver: i90, i83, i80, i73+, i73, i70, i50, E91, E90, iBase, X6, X91+, X900+, M6, M5
- Controller: HCE600, HCE320, LT700 series, LT600 series android smartphone, or handheld controller
- GIS collector: LT700H, LT600T
- Total Station: Leica TS30/TS15/TS11, Leica TPS1200+
- Pipeline detector: VIVA X-METROTECH vLocPro2
- Laser rangefinder: Leica Disto 810/510, SNDWay, Bosch GLM 50 C, Bosh GLM 120 C □ Echo
sounder: Hydrolite DFX/ TM, NMEA DPT/ DBT

7. What types of base maps are supported by LandStar™ 8?

- Online map: OSM, BING, WMS/WFS, Google Image map
- Offline map: KML, KMZ, DXF, DWG, ESRI SHP, TIFF, MBTILES, JPG
- Points and lines in DXF/DWG files can be selected to stakeout

8. Does LandStar™ 8 support landscape display modes?

- LandStar™ 8 supports both portrait and landscape display modes
- Devices with Android OS must have version 6.0.1 or higher

9. How many languages are supported in LandStar™ 8?

- LandStar™ 8 supports 30 languages:
 - Arabic
 - Bulgarian
 - Chinese (Simplified)
 - Chinese (Traditional)
 - Croatian
 - Czech
 - English
 - Finnish
 - French
 - German



- Greek
- Hungarian
- Italian
- Japanese
- Kazakh
- Korean
- Laotian
- Malaysian
- Mongolian
- Persian
- Polish
- Portuguese
- Russian • Slovak
- Spanish
- Swedish
- Thai
- Turkish
- Ukrainian
- Vietnamese

10. What can I do with CHCNAV cloud in LandStar™ 8?

- In LandStar™ 8, you can upload or download projects, coordinate systems, code list and work mode list.

11. Do you have proprietary data formats?

- HCN/HRC: Internal GNSS data formats, specific to CHCNAV.
- CRS: CHCNAV coordinate system files. In ASCII format, it can be shared with other CHCNAV software.
- CGD: CHCNAV standard correction file. Contains the datum grid, the plane grid and the geoid model in one file.
- The file name corresponds to the coordinate system.



12. What types of communication modes can I use?

- Connection to GNSS receiver: Wi-Fi, Bluetooth, Demonstration
- Data link methods: Internal Radio, External Radio, Receiver network, PDA network
- Internal UHF protocols: CHC, Transparent, TT450s, SATEL_3AS, PCC4FSK
- Network protocols: APIS, NTRIP, TCP Direct
- Support: Visit the QR code in **About** to visit CHCNAV's website and Facebook

13. Does LandStar™ 8 support voice or sound prompt function?

- LandStar™ 8 supports voice and sound prompts
- In the GIS attributes, you can record a voice as an attribute.
- You will get a warning when the receiver battery is low.
- You will get a warning when the receiver is out of the survey boundary you defined.
- You will get a warning when the solution type has changed. For example, from fix to float, from float to autonomous.
- You will get a warning when you connect to the receiver or disconnect from the receiver.

14. Does LandStar™ 8 support surface stakeout?

- LandStar™ 8 supports surface stakeout
- You can use 3D DXF, LandXML and HCT files
- You can see the real-time cut/fill value in the field
- You can check the result before store point
- You can get the detail report which contains surface name, design height, real height, cut/fill value.

15. What can I do with LandStar™ 8's GIS features?

- You can define your attributes in LandStar™ 8
- You can use attributes with integer, decimal, text, date types
- You can use image, voice, video as the attributes
- You can edit your feature shapes in map edit page
- You can use gestures to quickly adjust feature shapes
- You can add features on images, like JPEG, TIFF, SIT



- You can import SHP files as base map and select points or lines to stakeout □ You can export your points into SHP files

16. How can I share my data?

- You can use CHC Cloud to share your data.
- You can use Gmail, WhatsApp, Google Drive, Skype to share your data.
- You can share your projects, coordinate systems, points, work modes, codes, reports and results.
- You can use a cable to connect to your PC and share data.

17. Can I use SD card to transfer data?

- Yes, you can.
- You can import data from SD card, and export data to the SD card.
- Note that LandStar™ 8 does not support the creations of new project in the SD card directly.

18. What can I do with the controller's keyboard?

- You can use the APP button to start LandStar™ 8 directly.
- You can use the keyboard to enter data.
- You can set buttons to measure points, stakeout previous and next points

19. What's the relationship of LandStar™ 8 and GNSSTool?

- Prior to version LandStar™ 7.3.3, GNSSTool was a must-use application for connecting your device
- Starting with version LandStar™ 7.3.3, you can use LandStar™ to connect directly to your device.

20. How to import codes from a file?

It is possible to import a code file in CSV format. The format of the CSV file is as follows: Name, DrawingType, Describe, SymbolID, SymbolSize, IsColorByLayer, SymbolColor, LayerName, LayerColor, LineStyle.

The name is mandatory, the others are optional

21. How to use LandStar™ 8 on Android 10 and above devices?



Copy the LandStar.apk file from your PC to an Android 10 and above handheld controller and install it directly on the controller. Android 10 and above controllers and LandStar™ 8 must be connected to the Internet at least once a week, otherwise it will show offline.

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