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Software Release Notice

V3.2.9 Software Ensemble for RT-3010, RT-3020, SF-2040, SF-2050 NCT-2030M; *Serial Numbers <5000* and NCT-2000 Series Products

*** Warning ***

1. This software build will only function in products containing the NCT-2000D GPS engine. Products equipped with the newer NCT-2100D GPS engine will operate on v4.2.20, which is a co-release software ensemble with this version.
2. **Important** - Update the receiver with a consistent ensemble of software and to use only the latest versions of the Install and StarUtil programs included in this release.
3. **Always install the new software ensemble via COM 2 and power cycle the receiver after installing the software.**
4. **Always install the new software and software options/licenses with the antenna connected and in an area where the receiver has the ability to track satellites.**
5. **Force the Install program to load all versions of software** including the GPS engine, IOP and LBM (LBM for the SF product line only), even if the load boxes are not checked by default.
6. Use of the *Install* utility is recommended for installation of the new software. However, if using StarUtil to load software individually, follow this load sequence: 1) LBM (SF- models), 2) IOP (where applicable), and 3) GPS Engine. ***Failure to load new software in this order may result in receiver communication failure.***
 - a. The IOP and LBM software must be loaded at 19200 baud. The GPS engine can be loaded at baud rates up to 115200 baud.
7. To optimize performance when using the receiver with an external RTK communication device, it should be connected to COM2, and the controller to COM1.

8. **The receiver controller software may need updating** to function properly with this new release and to enable some of the new features.

New Messages and Features

This software version was previously released with LBM v3.4. This release is being updated in November, 2009 to include LBM v3.8 which updates the European and African satellite service frequency change that took place in September 2009.

This software ensemble incorporates several new features and enhancements. The capability to track signals from 6 StarFire satellites with improved licensing options is the primary feature enhancement in this package. (Additional changes are further described later in this notice.) As a result, new NavCom binary messages were added, plus additional fields were added to some of the existing messages. Accompanying this notice is an updated Technical Reference Manual (TRM), and the StarUtil User Guide that reflect these changes. A list of the new and modified messages along with a summary of the changes is contained in the Technical Reference Manual. System integrators need to review the message changes to see if any modifications are needed to the controller software they supply as part of the end user solution.

Install Makes Updating Software Easy

The new Install program automatically determines what software modules in the receiver require updating, and performs the update process. Additionally, the Install program can display and update the StarFire license and GPS receiver options.

NavCom RTK receivers utilize two processors, one in the GPS engine module and a second in the I/O processing (IOP) module. In the StarFire models, there is a third processor in the L-band module (LBM) that processes the StarFire measurements. The software upgrade package includes new software for each of the three modules. If you are receiving the software upgrade package via E-mail, then the zip file will be included as an attachment.

- ☐ *Create a new separate folder for this ensemble. This will 1) ensure that all of the correct software is in one location, 2) there is no mixing of old and new software, and 3) it affords the ability to “back-track” to the previous version.*

Software “ZIP” File Contents

The update “ZIP” file includes the following:

Program	Version/Date	Comments
Release Notes v3.2.9a Ensemble.PDF	Dated 16 Nov 2009	Description of improvements and bug fixes (This document)
Readme.TXT	Dated 16 Nov 2009	Update instructions and a list of files
SLv3,2,9.bin	Version 3.2.9	GPS engine software - NCT-2000D models
IOPv3,0.hex	Version 3.0	IOP software
LBMv3,8.hex	Version 3.8	LBM software
StarUtil_v100_5_7.exe	Version 100.5.7	StarUtil program – NCT-2000D models
Install_v1_6.exe	Version 1.6	Install program
Install.ini	Dated 16 Nov 2009	Install initialization file – must reside in the

		same directory as the Install program
RinexUtil_v1.25.exe	Version 1.25	Binary to RINEX conversion program

Documentation

The Technical Reference Manual, Product User Guides, and the StarUtil User Guide have been revised with major changes for this release. The Install Manual has not changed for this release. The latest versions of the Product User Guides, Install User Guide, StarUtil User Guide, and Technical Reference Manual will be available on the NavCom's web site at:

<http://www.navcomtech.com/Support/DownloadCenter.cfm?category=manuals> once the software is officially released.

<i>Manual</i>	<i>Part Number</i>	<i>Revision</i>	<i>Description</i>
StarUtil User Guide.pdf	96-310008-3001	F	Revised StarUtil User's Guide
Install Manual.pdf	96-310012-3001	C	Install User's Manual
Technical Reference Manual.pdf	96-312001-3001	J	Revised Technical Reference Manual

Software Changes/Improvements

The following sections describe the changes and improvements to each of the software modules included in the ensemble.

GPS Engine Software

This GPS Engine release of software provides the following list of changes, improvements, and features incorporated since the previous formal release of v3.1.17:

V3.2.9

- StarFire™ Network Expansion
 - The StarFire network was expanded to 6 satellites from 3 in January 2008. The new software provides additional functionality and flexibility to make use of the additional available satellite signals.
 - GGA record, field 14 updated to reflect new satellite constellation and ID structure
- CMR Type 0 Corrections
 - Corrections implemented to resolve an interfacing issue with the Applanix POS-MV product line.
- VRMS / HRMS Reporting
 - Corrections implemented to resolve an error in reporting estimated position accuracy

- RTCA/DO-229D Signal Tracking Improvement
 - Automatically tracks new WAAS satellites – PRNs 135 and 138
 - Automatically tracks EGNOS satellites – PRNs 120 and 131
 - Updates added to track MSAS satellites automatically – PRNs 129 and 137
 - GAGAN satellite may be manually tuned – PRN 127
- General enhancements
 - Fixed problem on PRN-1 that had potential to impact vertical accuracies
 - Fixed a problem (Mode 10 failure) that in rare conditions caused the receiver to stop calculating positions, requiring the unit to be power-cycled
 - Updated RTK-Extend implementation.
 - Updates for tracking and applying corrections to PRN-32
 - Resolved CMR correction input fault (Type 0)
 - Fixed a NMEA defects in RMC and VTG

I/O Processor (IOP) Software

This IOP release of software provides the following list of changes, improvements, and features incorporated since the previous formal release of v3.0:

- No changes were made to the IOP software.

L-Band Module (LBM) Software

This LBM release of software provides the following list of changes, improvements, and features incorporated since the previous formal release of v1.5:

V3.4

- Network Expansion
 - The StarFire network was expanded to 6 satellites from 3 in January 2008. The new software provides additional functionality and flexibility to make use of the additional available satellite signals.
 - New licensing modes introduced, including Run-time licensing and Point-Radius licensing
 - [Future user StarFire license requests must include the LBM software version and serial number \(found on the D0 screen\) in order to receive the correct license code](#)

- New satellite ID structure
- Added User Defined Satellite and removed Alternate Satellite functionality
- Instituted a new geofence definition which adheres more precisely to the coastline

V3.8:

- Updated frequency table for the satellite located at 25.5 degrees East servicing Europe, Middle East and Africa. The frequency change is mandated by NavCom's satellite service provider.

StarUtil Software

This StarUtil release of software provides the following list of changes, improvements, and features incorporated since the previous formal release of v100.4.14:

- Changed the program name to StarUtil-2000, as reminder that this version supports the NCT-2000D based products.
- Corrected displayed label of Altitude and Height on B1 Solution screen.
- Fixed a bug that caused occasional failure to log and "Access Violation"
- Added new dialogs to support new LBM features
 - Define Satellite
 - Cancel SF License
 - 0xD2
 - 0xDB
 - -0xDD
 - Added code to support loading of new StarFire license

RINEXUtil Software

This RINEXUtil release of software provides the following list of changes, improvements, and features incorporated since the previous formal release of v1.21:

- Added support for SF-2110 based products

If you have any questions regarding the installation or use of the software upgrade package please contact NavCom Customer Support at customerservice@navcomtech.com or by phone at +1 310.381.2000.