SF-3040 Quick Start Guide

Follow this Quick Start Guide to enable the robust functionality of the SF-3040.

By opening, assembling, and using this product, you agree to the terms of the License Agreement contained in the SF-3040 GNSS Product User Guide.

Important: This device will not track satellites until after the option file is loaded in the receiver. See instructions contained in this guide.

⬚ Consult your dealer to determine if the SF-3040 is fully configured. If it is, the SF-3040 is ready to use. Refer only to these sections: *Connect Equipment* and *Factory Default User Profile*.

⬚ *If the SF-3040 is not dealer-configured, the receiver is not operational until the steps in this guide are performed.*

The supplied SF-3040 Product Configuration USB Flash Drive (PN 82-043000-0001) includes all the files needed to set up the ordered configuration of the SF-3040. It also includes guides with complete product information:

✓ *SF-3040 GNSS Product User Guide*

✓ *StarUtil 3000 User Guide*

✓ *Sapphire Technical Reference Manual*

■ NavCom Customer Support:

Telephone: +1 (310) 381-2000

Web: http://www.navcomtech.com/Contact/ContactSupport.cfm

POWER   USB – COM1   COM2

Connect Equipment

StarUtil 3000 is designed to be operated on a Windows XP operating system.

1. Use one of the two supplied data cables for communications:

   - USB Device cable (PN 96-212238-01): Connect the 7-pin LEMO connector end to the USB-COM1 port on the bottom of the SF-3040. Plug the USB end into the PC.

     Or

   - COM 2 serial cable (optional) (PN 96-212169-01): Connect the 6-pin LEMO connector end to COM2 port at the bottom of the SF-3040. Connect the DB9S end to the PC.

⬚ An optional COM1 serial cable (PN 96-212170-01) is also supported.

⬚ Bluetooth™ connectivity is also available. Refer to the *StarUtil 3000 User Guide* for detailed instructions on connecting a Bluetooth™ device. Loading firmware via Bluetooth is not supported.

⬚ An optional UHF radio modem is also available. Refer to the *SF-3040 GNSS Receiver Product User Guide* for complete instructions.

2. Locate the antenna in an area with a 360° clear view of the sky.

3. Fully charge the battery packs in the supplied battery charger *for at least 12 hours*, regardless of the LED indicator on the charger, prior to first use.

4. Install the battery packs in the side battery slots.

⬚ Refer to the *SF-3040 GNSS Receiver Product User Guide* for complete instructions on charging and installing the battery packs.

⬚ Three optional power cables are also available.

5. Press the On/Off switch 🔘 on the front Indicator Panel to turn on the SF-3040. All front panel LEDs illuminate for 3 to 5 seconds during power-up. The Indicator Panel status LEDs change from **red** to **green**.
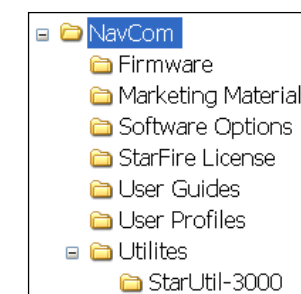
Save Folder/Files to PC

The SF-3040 Product Configuration USB Flash Drive (PN 82-043000-0001) includes the following:

- Root Directory: Software Options File and StarFire License (if purchased)

- NavCom Folder: Includes these sub-folders: Firmware, Marketing Materials, User Guides, User Profiles, Utilities (The contents of the NavCom folder are subject to change.)

6. Plug the SF-3040 Product Configuration USB Flash Drive into the PC.

7. Browse to the USB Flash Drive.

8. Save the Software Options File, StarFire License (if purchased), and NavCom folder to the PC. Create two folders in the NavCom folder for the Options File and StarFire License.
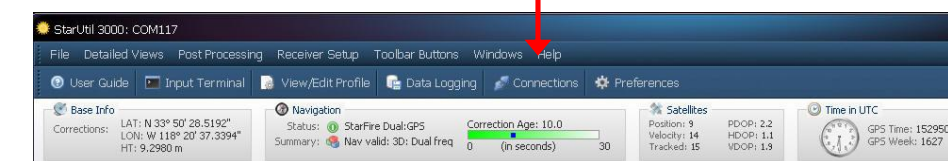

Establish Communications

9. Browse to Navcom\Utilities\StarUtil-3000 on the PC.

10. Ensure that these files are in the StarUtil-3000 folder: "Starutil-3k_v1_0_x.exe", "navcomx1c45x3040.inf" (USB driver), and 96-312007-3001.pdf.

⬚ The USB driver must be in the same folder as StarUtil-3000 for the USB port to auto-recognize the SF-3040.

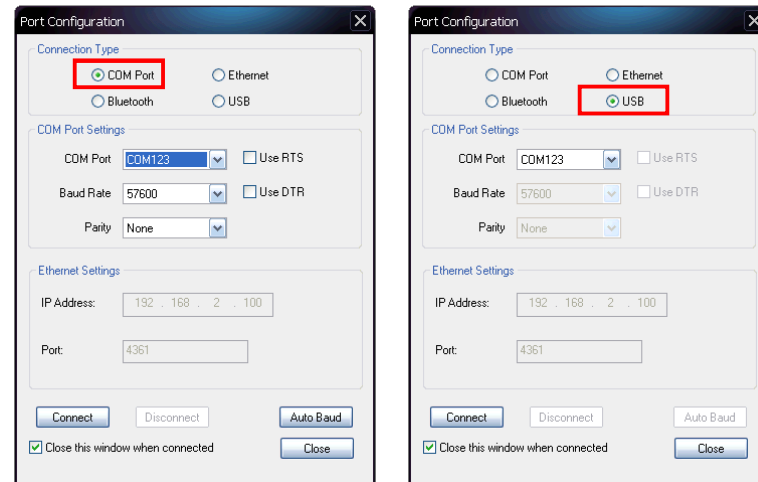11. Double-click "Starutil-3k_v1_0_x.exe" to open the program.

12. Click the *Connections* button to establish communications between the PC and the SF-3040. The *Port Configuration* window opens.

13. Depending on the current *Connection Type*, do not change the default option, *COM Port,* or select *USB* after

reading about the USB driver installation in the *SF-3040 Product User Guide*.

COM Port Settings   USB Settings

14. Set the appropriate options according to the *Connection Type*:

- *COM Port*:
  - *COM Port*: The appropriate PC COM Port
  - *Baud Rate*: 57600 (keep the default)
  - *Parity*: None (keep the default)

Or

- *USB Port*:
  - *COM Port*: The appropriate virtual PC COM Port

15. Click [Auto Baud] to ensure the baud rate is correct for the selected port.

16. Click [Connect].

17. Verify that the SF-3040 is connected to the PC: Messages scrolling in the *Communication* window indicate that the connection is established:

Blue arrows indicate received messages.
Green arrows indicate sent messages.

Upload Software Options

☐ Software Options must be uploaded before the StarFire License (if purchased) is loaded and software updated to ensure proper file-type selection.

Important: This device will not track satellites until after the option file is loaded in the receiver.

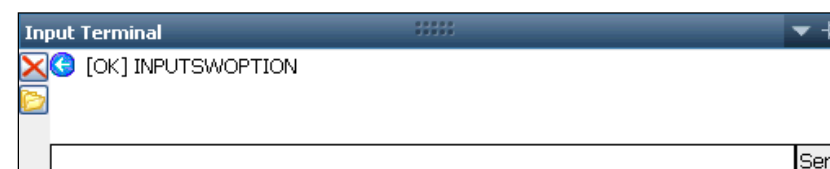18. Select *Software Options* on the *File Upload* window.

19. Click [...] and browse to the NavCom folder on the PC.

20. Select the software options file (the file extension is *.opt). The path to the software options file is displayed in the upload field.

21. Click [Upload]. At the end of the upload, a confirmation box opens. Click *OK*.

☐ The *Input Terminal* window also displays the outcome of the upload. In the example below, the load is successful:

22. Click [↻] on the *Software Options* window to display the loaded software options.

Click the Refresh button

☐ If any of the purchased software options are not displayed in the *Software Options* window, refer to the section "Use the Input Terminal to Upload Software Options" in the *StarUtil-3000 User Guide*.

☐ Also refer to the *Sapphire Technical Reference Manual* for detailed information on the [INPUTSWOPTION] command.
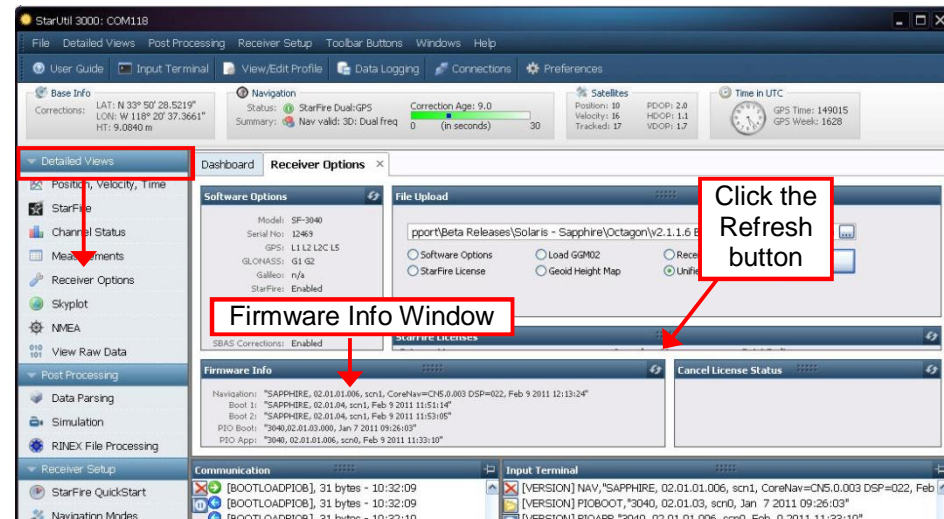
☐ "StarFire: Enabled" indicates that the StarFire *Software Option* is loaded; it does not indicate that a StarFire *License* is installed. Do not close StarUtil-3000. Perform one of these steps after loading the appropriate option file:

- If a StarFire License is purchased, go to the *Upload StarFire License* section.
- If a StarFire License is not purchased, go to the *Factory Default User Profile* section.
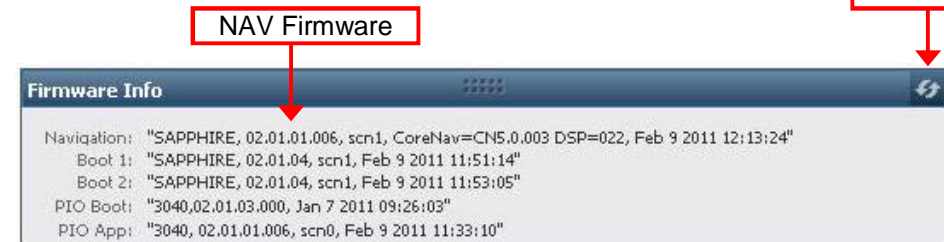
Determine Firmware Versions

The user determines that the firmware installed in the SF-3040 is the most current. The version of the installed firmware is important to the proper operation of the receiver.
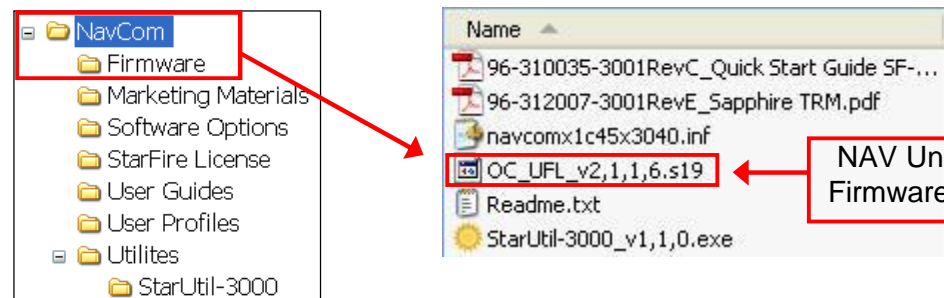
23. On the *Detailed Views* menu, click *Receiver Options* to open the *Receiver Options* tab.

Firmware in Receiver

Firmware Info Window

Click the Refresh button

NAV Firmware

Firmware Info

24. Click (refresh) on the *Firmware Info* window to display the installed options.
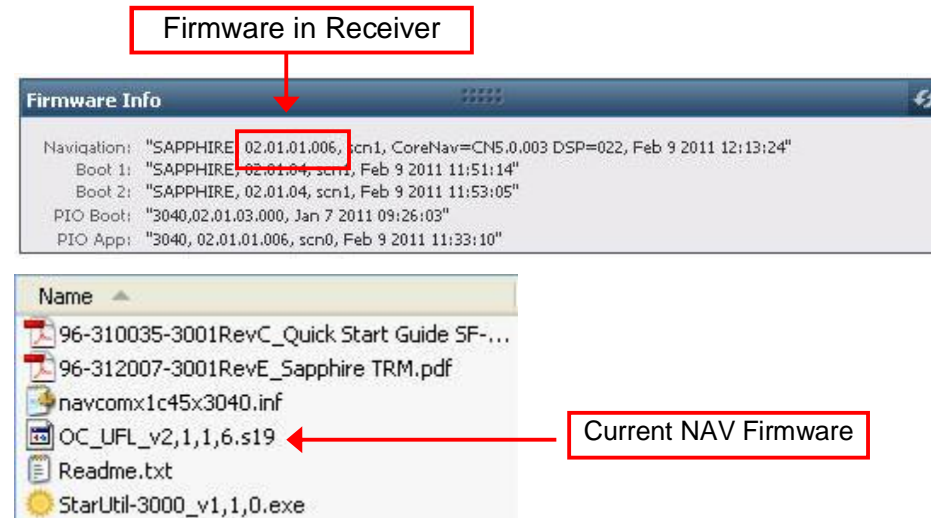
Click the Refresh button

25. Browse to the NavCom\Firmware folder on the PC. The Firmware folder is copied from the SF-3040 Product Configuration USB Flash Drive. It contains the *most current firmware*. The firmware file extension is *.s19.

NAV Unified Firmware File

Open the Readme.txt file for additional information.

The *.s19 file may begin with 'SP' instead of 'OC' after January 2012.

26. Compare the current NAV Firmware version in the Firmware folder with the installed version displayed in the *Firmware Info* window.

Firmware in Receiver

Current NAV Firmware

In the example above, the NAV firmware in the receiver matches the firmware in the folder.
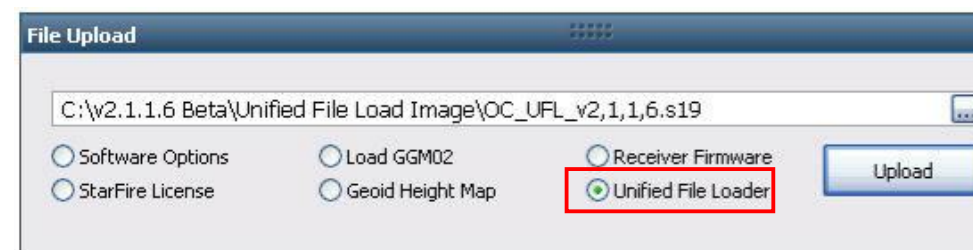
27. Perform one of the steps below:

- If the NAV firmware installed in the receiver is the *most current version*, go to the *Upload StarFire License* section.

- If the NAV firmware installed in the receiver is *not* the most current version:
  - Check the versions of the other firmware.
  - Write down all the firmware that must be updated.
  - Go to the *Upload Firmware* section below.
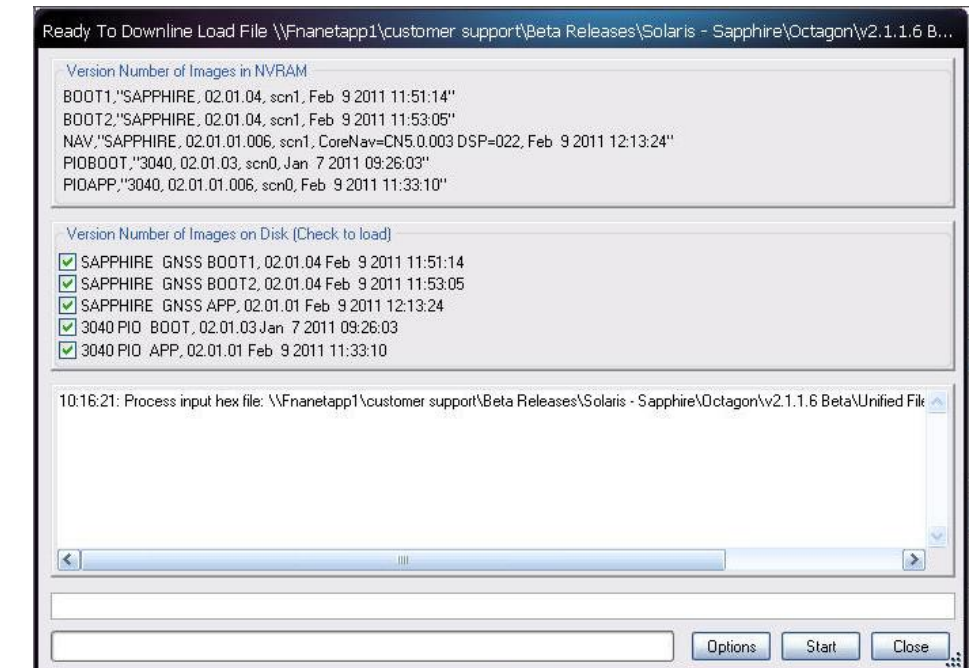
Upload Firmware

Upload a Unified Firmware File

28. Select *Unified File Loader* on the *File Upload* window.

29. Click [...] and browse to the NavCom\Firmware on the PC.

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30. Select the *unified* firmware file (UFL) to upload (the file extension is: *.s19*). The path to the UFL file is displayed in the upload field.

31. Click [Upload]. The files to be uploaded are checked on the *Ready to Downline Load File* window.

StarUtil 3000 will auto-read the reciever and select files to load. Check or uncheck firmware files if necessary (based on existing loaded version numbers).

32. Click [Start] and the upload progress window updates.

33. When the upload is complete, click [Close].

34. If any file fails to upload, verify which files loaded and uncheck those files, then reload the remaining files. If this fails, contact NavCom Customer Support for further guidance.

Do not close StarUtil-3000. Continue to the next section.

Upload the StarFire License

For the initial configuration, the StarFire license must be installed via data cable. Subsequent renewals of the license can be transmitted to the

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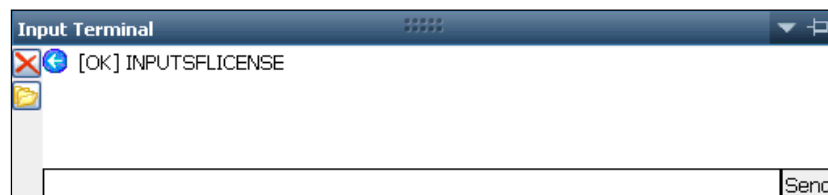receiver via radio broadcast. Refer to the *SF-3040 GNSS Receiver Product User Guide*.

⊡ The receiver must be tracking GPS satellites and providing a valid position solution at the time of the StarFire license upload to accept the license.

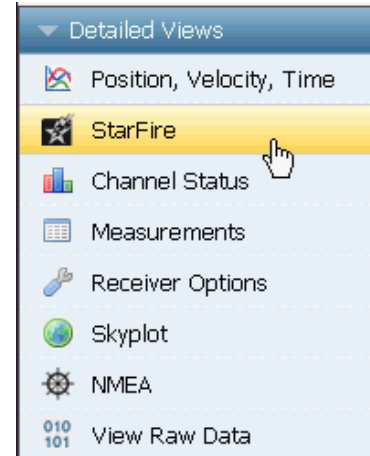35. Select *StarFire License* on the *File Upload* window.

File Upload

G:\NavCom\StarFire License\SN13452-PCS2358.lic [...]

○ Software Options   ○ Load GGM02   ○ Receiver Firmware
● StarFire License   ○ Geoid Height Map   ○ Unified File Loader   [Upload]

36. Click [...] and browse to the NavCom folder on the PC.

37. Select the StarFire license file (the file extension is *.lic). The path to the StarFire license file is displayed in the upload field.

38. Click [Upload]. At the end of the upload, a confirmation box opens. Click *OK*.

⊡ The *Input Terminal* window also displays the outcome of the upload. In the example below, the upload is successful.

Input Terminal
❌🔵 [OK] INPUTSFLICENSE
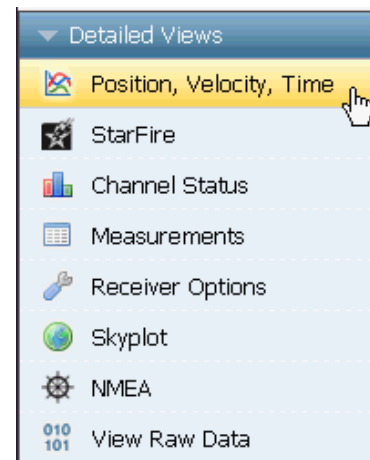   Send

39. Ensure that the purchased StarFire License is loaded. These tabs provide license information:

- *Receiver Options* tab: *StarFire Licenses* and *Cancel License Status* windows
- *StarFire* tab: *License Info* window

⊡ To open the *StarFire* tab, click *StarFire* on the *Detailed Views* menu.

▼ Detailed Views
🗺 Position, Velocity, Time
⭐ StarFire
📊 Channel Status
▦ Measurements
🔧 Receiver Options
🌐 Skyplot
⚙ NMEA
010/101 View Raw Data
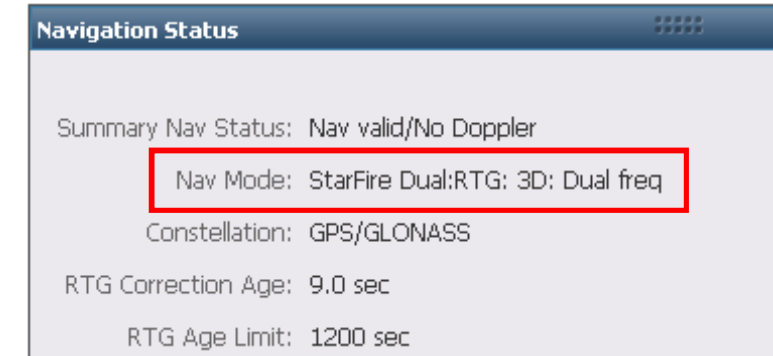
Confirm StarFire Navigation

40. Click *Position, Velocity, Time* on the *Detailed Views* menu to determine if the receiver is navigating in *StarFire* mode. The *PVT* tab opens.

▼ Detailed Views
🗺 Position, Velocity, Time
⭐ StarFire
📊 Channel Status
▦ Measurements
🔧 Receiver Options
🌐 Skyplot
⚙ NMEA
010/101 View Raw Data

⊡ The receiver enters StarFire mode in approximately 3 minutes after it is first turned on; then the convergence period starts.

Newer software versions: The Nav Mode *StarFire Dual:GPS*, indicates that the receiver is navigating in the old StarFire format, accurate to <10cm. The Nav Mode *StarFire Dual:GNSS*, indicates that the receiver is navigating in the new StarFire format which supports GLONASS, accurate to <5cm.

Older software versions: The Nav Mode *StarFire Dual:RTG: 3D: Dual freq*, indicates that the receiver is navigating in StarFire dual frequency with a 3D position fix, which is very accurate. RTG is another term for StarFire.

Navigation Status

Summary Nav Status: Nav valid/No Doppler
Nav Mode: StarFire Dual:RTG: 3D: Dual freq
Constellation: GPS/GLONASS
RTG Correction Age: 9.0 sec
RTG Age Limit: 1200 sec

Factory Default User Profile

Further configuration is not necessary for the initial use of the SF-3040. The receiver is preconfigured with a factory default user profile that includes settings for the various port assignments/parameters, navigation parameters, and output message lists.

⊡ If the SF-3040 does not function properly, refer to these online tools:

- Troubleshooting Guides
- User Manuals

Contact the authorized dealer or NavCom Customer Support.

⊡ If desired, replace the factory default user profile with a predefined profile, or create a profile. Refer to the *StarUtil-3000 User Guide*.