User Guide

Version 1.0

Contents

1. DISCLAIMER / TERMS OF SERVICE

Disclaimer for ExtGPS Application later referred as Software. This material, including, but not limited to, documentation and/or any related computer programs, is protected and copyright controlled by Symarctic Solutions Ltd referred as Company.

By installing Software you automatically accept these terms of service. Before Software installation it's assumed by Company that these terms are fully read and understood.

Using the Software impacts the phone battery consumption, and with some phone models the increased battery consumption may heat the phone when Software is used continually for longer periods of time. Company is not liable for any such impact of use of the Software. Software shares location data which is get from phone's built-in positioning system, accuracy of location is not better than what is provided by phone and location data can be incorrect and inaccuracy.

Company is not liable for any direct, indirect, incidental, misuse, mal-functionality, compatibility, special or consequential damages or costs of or inability to use the Software.

You may not distribute or sublicense software to any other party without written license agreement with Company. There is no guarantee and no warranty.

By using the Software you accept the Software "as is" and understand that the Software may contain errors.

2. GENERAL INFORMATION

2.1. Introduction

Purpose of this document is to describe the basic usage of ExtGPS application. ExtGPS is an application that allows end users to share their mobile's built-in GPS module via Bluetooth and/or USB connection. Location details received from GPS are shared as NMEA data.

2.2. Working configuration

The current version of application supports following Nokia mobile platforms that include GPS support:

- S40 platform from 6th Edition onwards and
- Symbian S60 mobiles from 3rd Edition onwards

MUST have requirements for the application to work properly on device are:

- **Bluetooth** and/or **USB** connectivity
- built-in **GPS** module
- JAVA runtime supports J2ME MIDP version **2.0** and **CLDC-1.1**

Application has been primarily tested and developed by using following platforms/devices (the actual device support is not limited to models below):

- S40 6th Edition (Nokia 2710-c2)
- S60 3rd Edition FP1 (Nokia 6210 Navigator, E71)
- S60 3rd Edition FP2 (Nokia E5, N96)
- S60 5th Edition (Nokia 5800 Express Music)
- Symbian^3 / Anna update (Nokia N8, E7, E6)

3. BASIC USAGE - SHARING GPS

Following steps-by-step guide will introduce how to use the application for the first time and how to start GPS sharing.

STEP 1: Launch the application

After successfully installing the packet from store, start the Symarctic ExtGPS application from the application grid. First the application will show a splash screen and after a while an application Disclaimer dialog is shown.

STEP 2: Start position sharing

After user has accepted the disclaimer dialog, application initiates with a permission query to allow position sharing. After user has authorized the sharing with "Yes" button, the application will start the position sharing service.

Main view is activated and position search is ongoing. Bluetooth and USB connectivity status are also updated based on status and device details.

Below is an example when GPS is searching the position and Bluetooth is in discoverable state, means that other devices can found it and create a connection and finally PC is connected via USB-cable and ExtGPS is ready to share NMEA data when position is received.

ExtGPS shares data when position is received and Bluetooth or/and USB is successfully connected. After this it is possible to use this received NMEA data with your software if it supports Bluetooth or USB connection to read position data from.
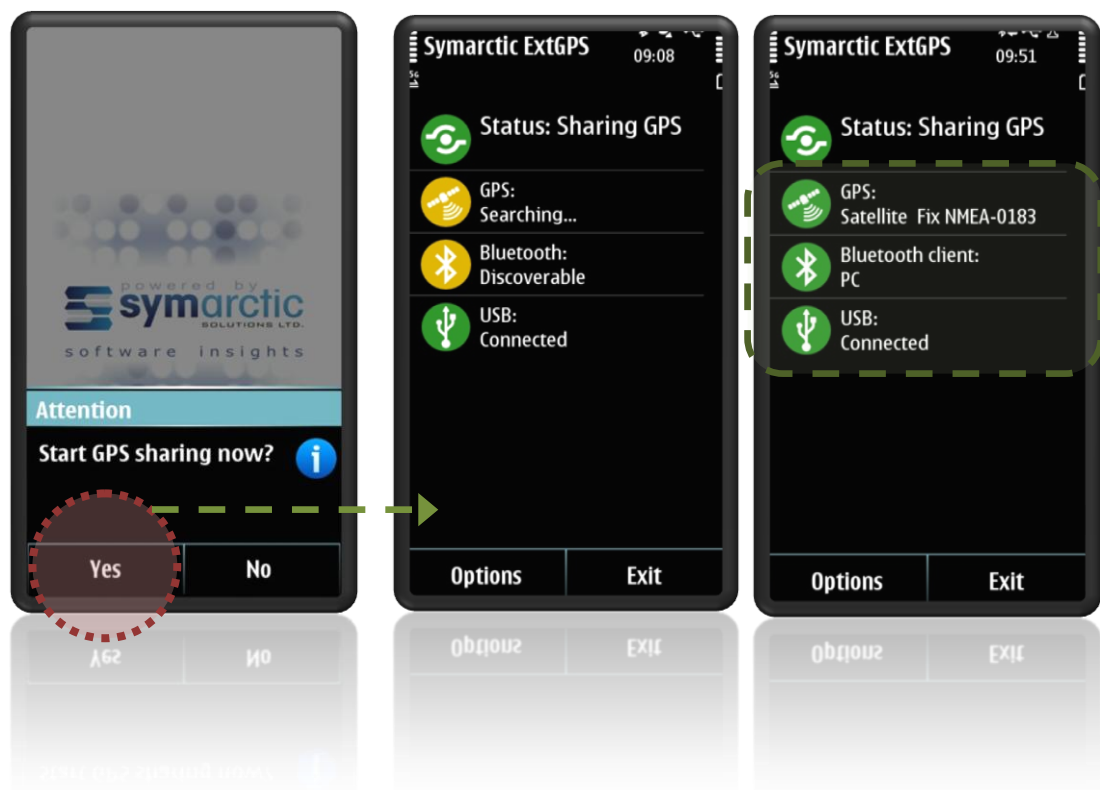
4. APPLICATION FEATURES

All features of ExtGPS are quite simple and easy to use and also the application lifecycle is quite straight-forward. The main user interface is used to show status general service status and also the status details for all sub-systems: GPS, Bluetooth and USB.

4.1. Idle state

Application is in "idle" state (no services are running) when ExtGPS is started without automatic sharing, or user has ended the sharing session.

4.2. Start and Stop service

When ExtGPS is launched from the application grid, the application prompts an automatic query to start GPS sharing, as described in previous chapter, although it is not mandatory to start GPS sharing immediately after the application launch. If user does not start immediately then the idle screen is shown. Now GPS sharing can be started and stopped when user selects command from application menu.
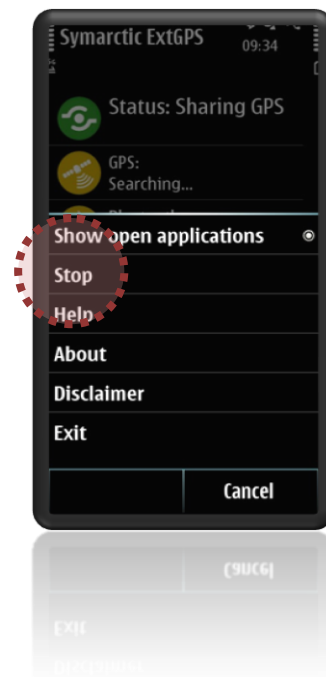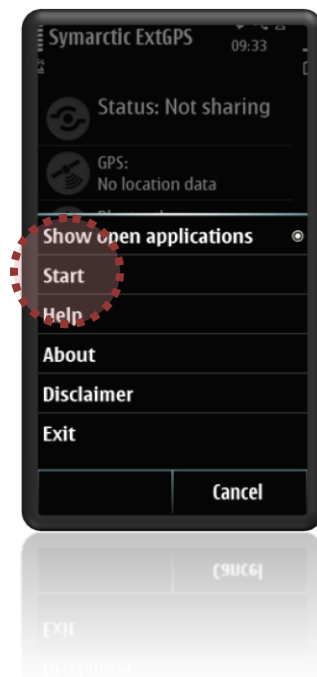
4.3. Positioning

Check that your mobile phone is equipped with built-in GPS and positioning methods are activated. If GPS positioning is not activated, then the position cannot be shared.

The screenshot below illustrates the situation when GPS positioning services was disabled from the mobile.
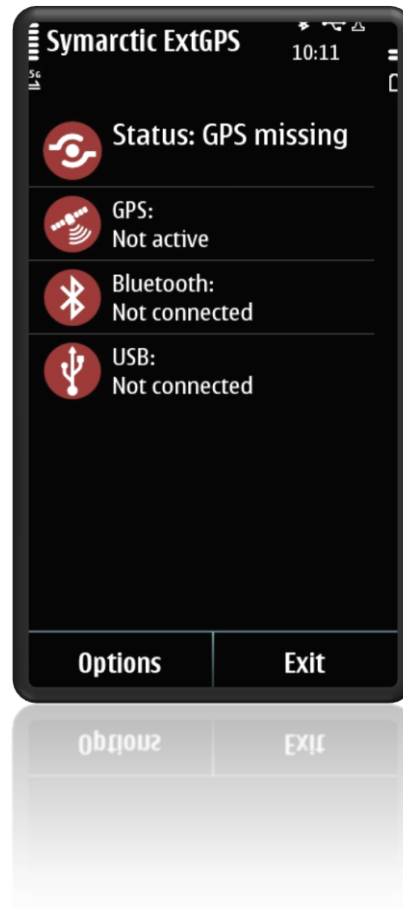
Tip: Check the positioning methods on your device and activate positioning for Integrated GPS.

4.4. Bluetooth connectivity

ExtGPS will not share data until Bluetooth (or USB) is connected and GPS sharing is activated. Additional Bluetooth activation query is shown right after the GPS sharing has been started if the BT is switched OFF. In general the Bluetooth can be activated from the system settings.

Notice! *Some mobile phones will show query like below to turn on the Bluetooth and some phones will just skip it.*

After Bluetooth has been activated the ExtGPS sets mobiles Bluetooth to discoverable state and yellow icon with text **"Bluetooth: Discoverable**" is shown on user interface. After sharing has been started and remote device has been connected successfully, the Bluetooth icon will be green and status text is: **"Bluetooth: <remote device name>".**

Bluetooth client can be changed during the runtime without first closing the sharing session. Just disconnect the remote device and use another Bluetooth device. Bluetooth will be changed back into discoverable state if the client connection is lost.

If the Bluetooth has been deactivated from device, then interface will show red BT icon with text: **"Bluetooth: Not available".**

4.5. USB connectivity

ExtGPS will not share data until USB (or BT) is connected and GPS sharing is activated. After sharing has been started, the USB icon will be green and status text is: ***"USB: Connected".***

If mobile supports USB connectivity then user needs to know the actual port number which is managed by PC's operating system. To get the correct port number, please check your PC's device manager and validate that mobile is recognized properly. Then use your GIS software and select USB communication port for source of NMEA data.

Notice! *ExtGPS will show red icon with text* ***"USB: not connected"*** *if USB-cable is not connected/not recognized or it is unsupported in your mobile phone. Check example screenshots below.*
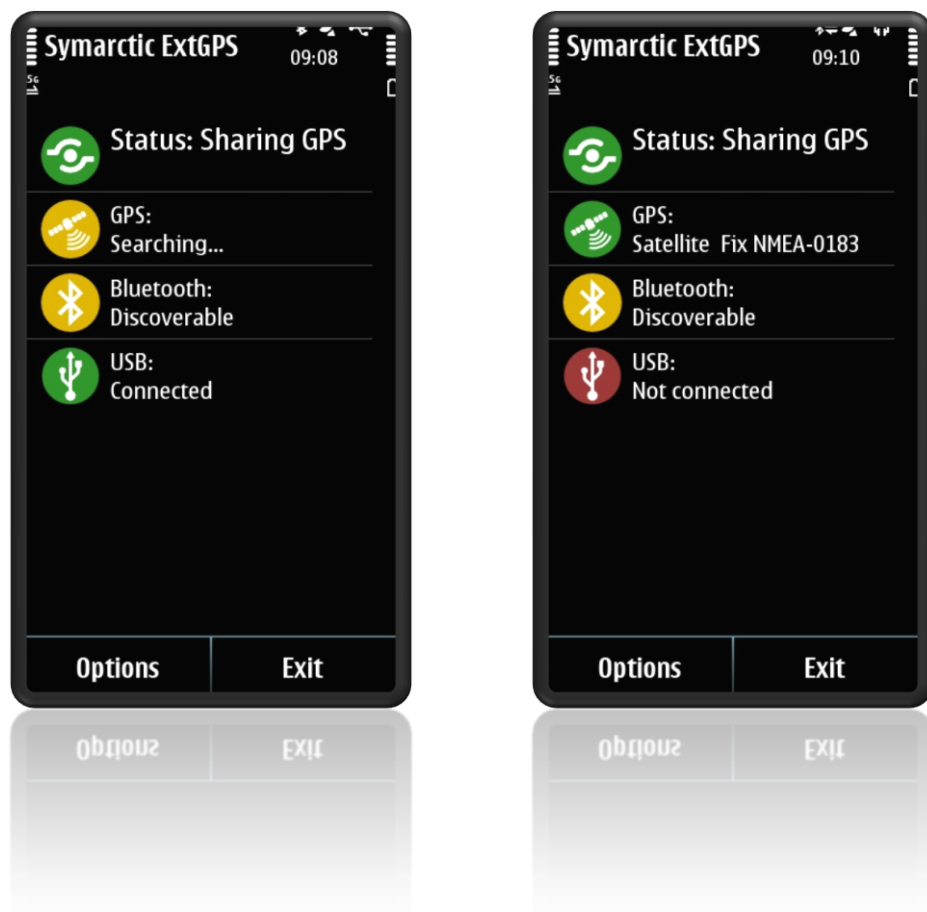
5. TIPS AND TRICKS

5.1. Home screen

Shorten the time to access ExtGPS by inserting the shortcut to home screen. Although it *should be noted that home screen is not necessarily supported in all devices.*

5.2. Bluetooth pairing

When using Bluetooth, check that the devices can be paired together before trying to share GPS data. When devices create an authenticated pair, the ExtGPS should be usable. With some device configurations it seems to be hard to get Bluetooth configuration work successfully.

5.3. Speed-up positioning

In some mobile phones the initial positioning can take a lot of time. To be able to get position faster first ensure that the mobile has a clear "view" to the sky.

It is also possible to speed-up the positioning by using advanced network positioning mechanisms that mobile supports, an example of these mechanisms are AGPS, 3G network based or Wi-Fi/Network.

Notice: if network assisted positioning has been used; it may cause extra costs from network operator side for applications end user.

*Do not use external Bluetooth GPS positioning while ExtGPS is used to share GPS data.*
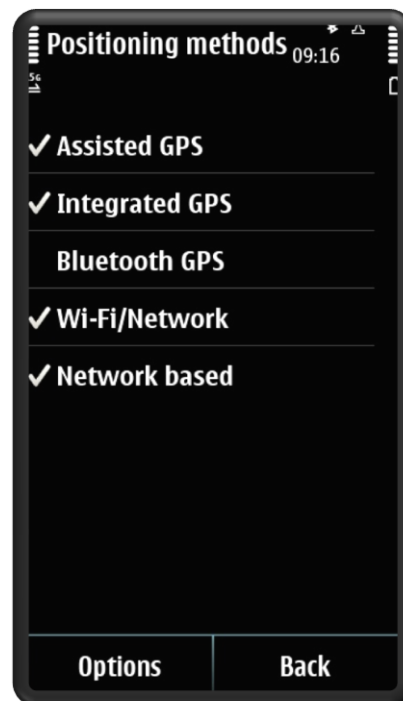
5.4. Bluetooth communication with PC

To share positioning data over the Bluetooth quickly, create a trusted Bluetooth pair with the mobile, so that communication starts without security pin code query.

To be able to communicate with mobile you need to find the Serial port (SPP) 'Symarctic ExtGPS' COM(xx) and use those details with your GIS software. The correct serial port can be fetched from the device manager of your PC or via Bluetooth settings.
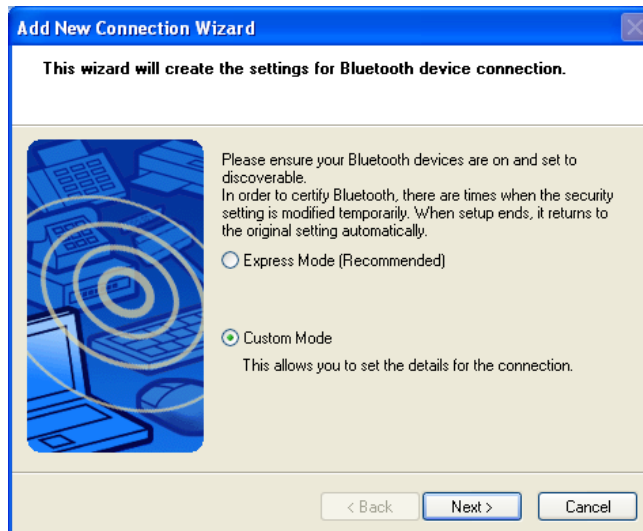
Below is a screenshot where E7 BT service discovery results are shown and Symarctic ExtGPS is found.
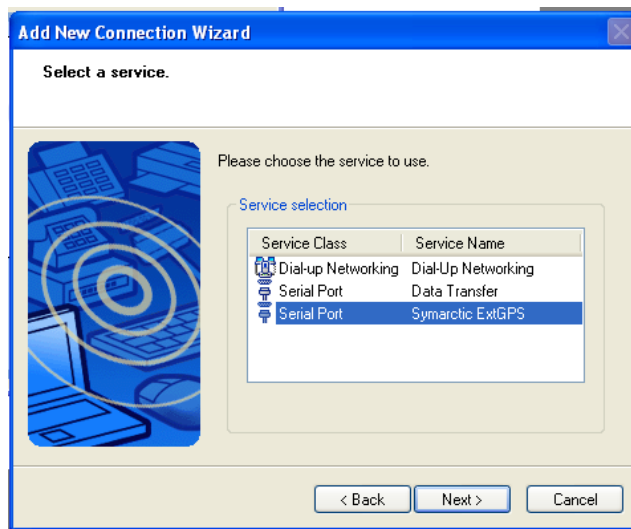
Select Symarctic ExtGPS and click next, after that "COM46" is automatically defined to be used for communication.
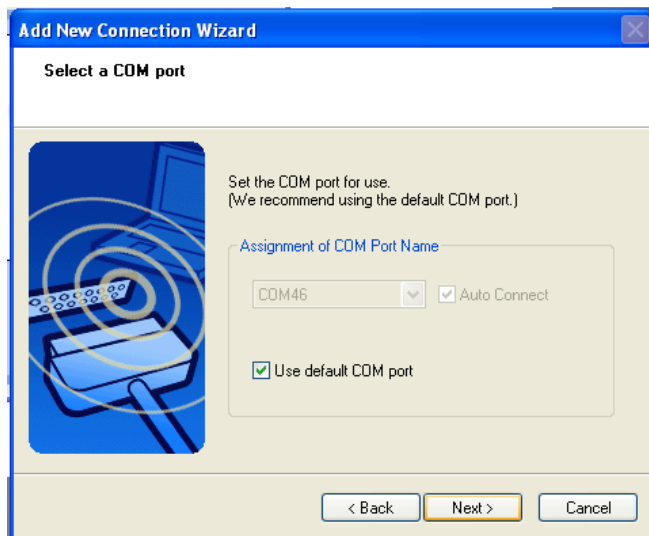
Then just click next and finish the wizard. Communication via Bluetooth COM port is now ready.

Notice! ExtGPS will recognize Bluetooth client when user connects to service via COM-port. If normal Bluetooth connection is done between devices and ExtGPS service is not used: ExtGPS UI will show Bluetooth in discoverable mode.

Now start/connect your positioning software and start use GPS data which is received via Bluetooth link. Below is a screenshot from telnet application.

5.5. USB communication with PC

To be able to connect mobile phone with PC via USB, it is mandatory that the PC has a suitable device drivers installed for target device (Nokia PC suite).

Connect mobile with USB-cable and select "PC Suite" mode or equivalent selection to create a connection from mobile to PC.

NOTICE! *S40 USB-connectivity*

On some S40 devices it seems to be a problem to maintain USB-status permanently. Also there seems to be problems to get status information when USB-cable is removed and also a notification when data writing has failed.

If you're using S40 device, make sure you have connected the device via USB-cable and that your operating system recognizes the device and when using the ExtGPS via USB, it is highly recommended to close PC Suite/Ovi Suite.

Example configuration with Windows

Start the GIS application that you like to use and use the connected serial COM port to receive the GPS data. In this example, Nokia 2710 mobile communicates via COM19-port. Below is a screenshot from telnet application that catches data from COM19.
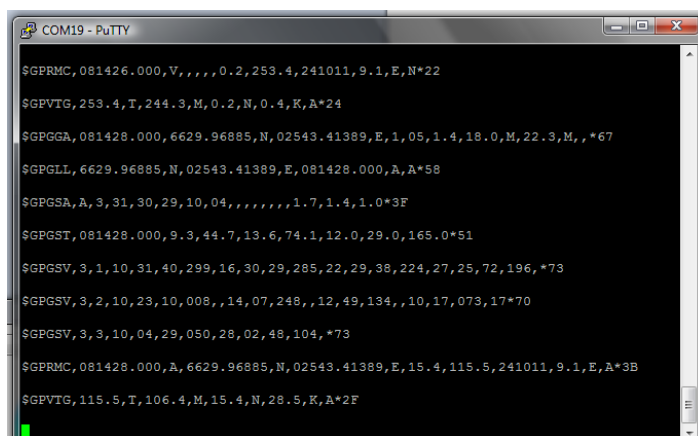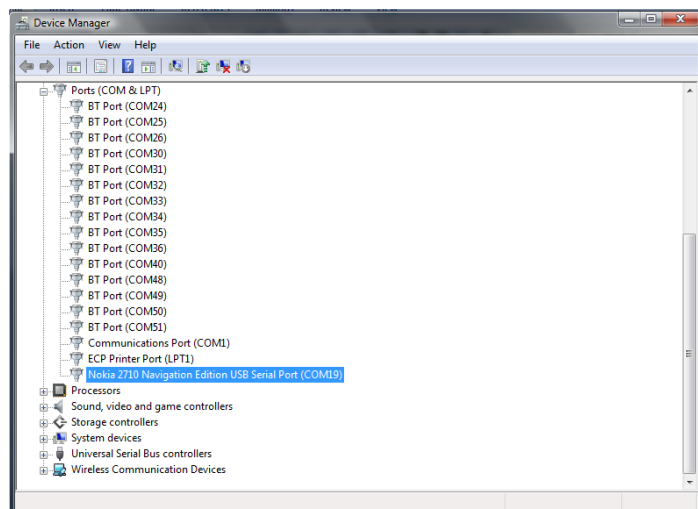
5.6. Close USB debugging tools

It is a known issue that debugging tools reserves USB-connectivity if those tools are running on the mobile device. In this case there might be a problem for ExtGPS to recognize USB-cable connection. USB will maintain status"Not connected" even though the cable is plugged-in.

To make sure that ExtGPS work properly, please stop all debugging tools or uninstall them.

Tip: When USB-cable is connected to mobile, there might be an information note on the screen:"...debugging via USB is available" (or similar). In that case, stop debugging tool and run ExtGPS again.

6. KNOWN ISSUES

6.1. USB reconnection

If USB-cable is removed while GPS sharing session is active, it will not end the sharing with Bluetooth (if also connected), but sharing via USB-cable will be stopped.

If you plug-unplug-plug the USB-cable during the sharing session, ExtGPS will not start sharing data again. To restart share again, session needs to be stopped and started again: in some devices there might be a problem with starting it again. Workaround if USB-cable detection fails; please restart the ExtGPS with USB-cable connected.

S40 devices might not update USB status correctly if USB-cable is removed.

6.2. Orientation switch during splash screen

In rare cases the application can be stopped into splash screen if the orientation of mobile device changes and the initial query dialog is not yet shown.

6.3. Application close

It has been notice that some devices running with Symbian^3 may close the ExtGPS application even though the application is in idle state and reconnection is made to serial port profile that has been previously used to share GPS data.

This behavior has not been noticed with earlier version of S60 devices or with S40 devices.

6.4. Exit

In some rare situations USB connection may hang the application even if sharing has been stopped and UI is updated to idle state. Then it seems that Exit command doesn't do anything. Workaround for current version is that USB-cable is unplugged.