Tempes

GTx

User's Guide

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1. Introduction

GTx measures your vehicle's performance (top speed and acceleration for 0-100 km/h and 0-400 m, or for 0-60 mph and quarter mile, or for any given speed range and distance). GTx is also useful for navigation, giving direction and distance to any set destination. GTx runs on Nokia smartphones (S60 3rd/5th edition or Symbian^3) and requires either a Bluetooth GPS receiver or a phone equipped with an internal GPS receiver.

2. Safety and Legal Notices

Obey all laws and speed limits when using GTx. Use GTx for performance measurements only in designated areas, not on streets or highways.

Keep your eyes on the road. GTx records acceleration and speed results automatically for viewing after the run.

Tempes shall not be held liable in any way for any incidental or consequential damages to the vehicle, driver, passengers, and/or other involved parties or property occurring while using GTx.

3. Quick Start Guide

If you use a Bluetooth GPS receiver, pair and bond your phone with the receiver. This is not needed if your phone has an internal GPS receiver. See chapter 5 for details.

In setup [Options / Setup] you can change units from km/h to mph and set acceleration ranges. Note that you must accelerate until the set end speed or distance is reached to get acceleration results.

GTx has three views which can be switched by touching tabs. PERF view is for performance measurements, GOTO view is for navigation and DATA view shows basic GPS data. See chapter 5 for details. Note that display backlight is kept on in PERF and GOTO views when GPS is connected. Switch to DATA view when you want to save battery life.

GTx measures automatically all accelerations between set limits (default limits are 0-100 km/h and 400 m, or 0-60 mph and ¼ mile). Scroll summary results in the PERF view by touching the scrollbar. Detailed results are saved to files [Options / Results].

Store the current location as a navigation destination by touching the navigation circle, or enter latitude and longitude coordinates [Options / Destination / New]. The arrow points to the destination. Scroll destinations by touching the scrollbar. Note that you must move for navigation to work.

4. Principles and Limitations of GPS

The GPS (Global Positioning System) consists of 24 satellites. About 12 GPS satellites can be visible at one time. The GPS receiver of your phone calculates its position using data received from the satellites. Direction data is available only when the GPS receiver is moving. This means that you must walk or drive to use the navigation feature of GTR.

GPS receivers can connect to satellites only when there is a clear view of the sky. Trees and tall buildings can block the view, and signals are rarely received inside a building. Best reception is usually achieved by placing the phone on the front or rear dashboard of a car. Note that heat reflective or heated screens can block GPS signals.

5.   Using GTx

If you use a Bluetooth GPS receiver, pair and bond it with your mobile by switching the GPS receiver on, then starting GTx and following the instructions on the phone's display. You need to type the GPS passcode (given in the GPS receiver manual) when asked.

The GTx status line shows connection and operation status. The GPS receiver usually takes up to a couple of minutes to establish a connection to the GPS satellites if visibility to the sky is available (**Searching satellites ...** is shown in the GTx status line). If navigation data is inaccurate because the GPS receiver cannot connect to the proper number of satellites (due to blocking from high buildings, tall trees etc.), **INACCURATE** is shown in the GTx status line and the current speed is shown in black. Acceleration measurements are disabled if data is inaccurate, but navigation can still be used.

GTx has three views which can be switched by touching the tabs at the top of the views:

PERF is for performance (acceleration and top speed) measurements.

GOTO shows distance and direction to a destination (e.g. car, hotel or geocache)..

DATA shows basic GPS data including GPS compass.

5.1   PERF – Performance Measurements

Performance measurements are fully automatic. your vehicle, wait a couple of seconds and go! GTx status line shows the process (**STOP**, **GO!** or **ACCELERATING**) but keep your eyes on the road. GTx records performance results for viewing after the run. Measurement stops when your vehicle is decelerating.

Performance measurement view (**PERF**, see above) shows acceleration summary results for the selected ranges (e.g. 0-100 km/h and 0-400 m) and the maximum speed during the acceleration (peak speed). The current speed (blue in if accurate) and the maximum speed of the session are also shown. The top row shows the index of selected run, the total number of runs, and the indexes of the best speed and distance acceleration run. If the best speed and distance runs are the same,

only one "best run" index is shown. The results of up to 99 runs can be viewed on the phone display. Select previous and next run by touching the scrollbar.

Note that distance acceleration results are shown only if start speed is zero.

Detailed results are saved to files that can be viewed on the phone's display [Options / Results] and sent to your PC via e.g. email or Bluetooth, or to other phones via e.g. text messages. The result files contain acceleration times for the selected speeds with 10 km/h increments, e.g. 0-10 km/h, 0-20 km/h, … and for distances (if start speed is zero) with 100 m increments, e.g. 0-100 m, 0-200 m, …. If mph unit is selected then acceleration times are for e.g. 0-10 mph, 0-20 mph, … and 0-60 ft, 0-330 ft, 0-1/8 mile, 0-1000 foot and 0-1/4 mile. Peak speed and foreign unit summary (mph or km/h) is also included. The result files are arranged by date and time with the last measurement on top of list. Result file name ("Ss_Ds.txt") consists of speed acceleration time (S s) and distance acceleration time (D s). When you exit from GTx, session top speed (if higher than 40 km/h or 25 mph) and best acceleration results are stored to a file named "Top_T.txt", where T is the top speed. If two files would have the same name, a running number is added to the name. A short comment can be added to the start of a result file. Default comment is the date and time of measurement.

Note that the GTx result files are not deleted automatically if you decide to uninstall the application. Result files are stored in C:\Data\Others\Accelerations\ and you can delete them before uninstalling [Options / Results / Delete all] or afterwards with the standard File Manager application.

Acceleration measurement ends when you decelerate or some problem (e.g. inaccurate GPS data) is detected. Acceleration results are calculated and saved only if the limiting speed or distance is exceeded. If measurement ends for other reason than deceleration, the reason is shown at the end of the result file. Performance measurements are done in the background even if another view (**GOTO** or **DATA**) is used.

Acceleration measurements should be done on a flat and straight track. The weight of the car affects acceleration, so best results can be achieved without passengers and with little fuel in the tank.

5.2   GOTO – Navigation
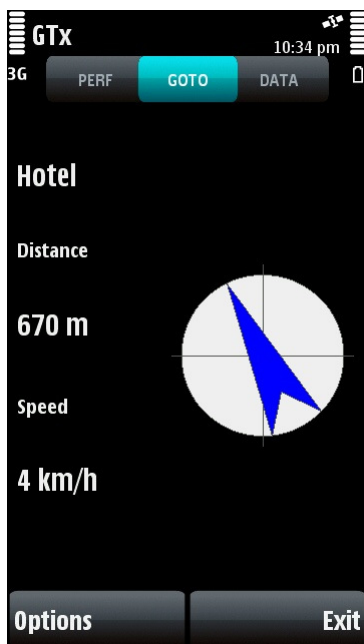
Navigation view (**GOTO**, see above) shows the name of the selected destination, the distance to it and the direction to it with a large arrow. It also shows the current speed. Note that the GPS

receiver can determine direction only if you are moving (the arrow is grayed if the speed is below 2 km/h or 1.5 mph or if direction is very inaccurate).
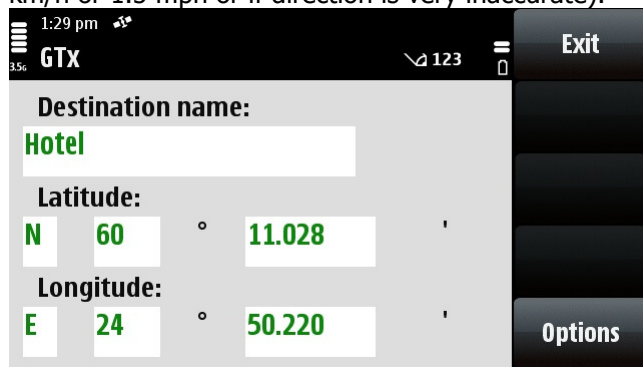
The current location can be set as a destination by touching the navigation circle when GPS navigation data is available. The destination latitude and longitude can also be typed in and the destination name can be edited, see above. Press the # key to get a decimal point. Latitudes and longitudes are in GPS format. Use a conversion calculator (e.g. www.cosports.com/tools/gps_coords.htm) if you need to use other kinds of coordinates. Destinations are arranged alphabetically and can be selected by touching the scrollbar.

For safety reasons the navigation distance and direction indicators are disabled if the speed exceeds 250 km/h or 160 mph.

5.3   DATA – Basic GPS Data
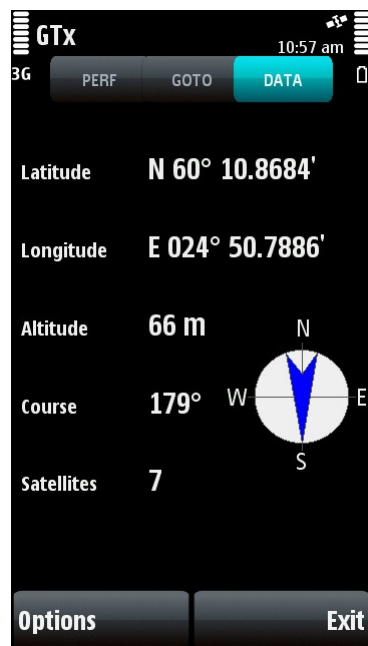
GPS data view (**DATA**, see above) shows the current latitude, longitude, altitude above mean sea level, course in degrees and with an arrow, and the number of GPS satellites being tracked.

6.   Menus

All views have the following common menu items under the **Options** softkey:

Setup		Change units from km/h to mph or vice versa. Also the acceleration speed and distance limits can be changed. Acceleration results are calculated only if speed or distance limit is reached. Distance acceleration results are calculated only if start speed is zero.
	Change	Change the selected item.
	Back	Go back to previous view.
About		Show information about GTx.
Exit		Exit from GTx. A confirmation is required.

The **PERF** view has the following additional menu items:

Results — Manage performance result files.

    Open — View result file using the phone's Notes application. Result file name consists of speed acceleration time and distance acceleration time, or session top speed. Date and time of measurement is shown in file list, and last measurement is on top of list.
The Notes application menu items include the following:

        Send — Send result file to selected destination (destination list depends on phone's capabilities and settings).

        Via message — Send result file via SMS.

        Via mail — Send result file via email.

        Via Bluetooth Send result file via Bluetooth connection.

        Exit — Exit from the Notes application .

    Edit comment — Add or edit a short comment (at most 40 characters) at the start of performance result file, e.g. "Frank's Porsche". Default comment is the date and time of measurement.

    Delete — Delete the selected result file. A confirmation is required.

    Delete all — Delete all result files. A confirmation is required.

    Back — Go back to the **PERF** view.

The **GOTO** view has the following additional menu items:

Destination — Manage navigation destinations.

    New — Add a new destination with name, latitude and longitude. Default name is a running three-digit number. Maximum name length is 20 characters. If GPS data is available, the current location is used as a default latitude and longitude. Edit a field by touching it. Press the # key to get a decimal point. Latitude and longitude are in GPS format (degrees and minutes with a fractional part).

        Save — Save the destination.

        Delete — Delete the destination. A confirmation is required.

        Back — Go back to **GOTO** view without saving changes.

    Open — Open the selected destination for editing.

    Delete — Delete the selected destination. A confirmation is required.

    Delete all — Delete all destinations. A confirmation is required.

The **DATA** view has no additional menu items.

7.   Status Messages

GT status messages are shown on the line above the softkeys. All views (**PERF, GOTO** and **DATA**) have the following common status messages:

Searching satellites ...   GPS receiver is searching for satellites. This could take a couple of minutes if visibility to the sky is available. See chapter 4 if the message prevails for a longer time.

INACCURATE   GPS receiver has found enough satellites for navigation but not enough for performance measurements. If this message prevails for more than a couple of minutes, try to find a better location for the GPS receiver to see a wider part of the sky. See also chapter 4.

The **PERF** view has the following additional status messages:

STOP   Stop the car to start an acceleration measurement.

GO!   Acceleration measurement can be started.

ACCELERATING   Acceleration measurement is in progress.

The **GOTO** view has the following additional status message:

No destinations   There are no saved navigation destinations.