TDS GTNXi XPlane

User’s Manual for XPlane 11 and XPlane 12

Embrace a New Level of Innovative Avionics: The GTN Xi 750/650 touchscreen.

Using a large, very high-resolution display, offering you unparalleled vivid, ultra-high resolution terrain mapping, advanced graphical flight planning capabilities, updateable Navigraph navigation database, worldwide geo-referenced charts part of Navigraph and many more features, all available at a virtual touch. The GTN Xi will bring a new level of modernism to your XPlane experience.

Revision 2 - February 2025

Introduction

The TDS GTNXi puts safety first, as both an intuitive safety navigation device, along with beautiful, modern mapping features. It includes ultra-high-resolution mapping, terrain information, mapping features: water bodies, political borders, roads, cities.

Worldwide navigation data is included: airports, waypoints, VOR/NDBs, custom waypoints, visual reporting points, airport diagrams including taxiways. To better assist in flying the perfect navigation procedure, geo-referenced charts can be displayed, or can be incorporated into the map mode. The TDS GTNXi XPlane features full updateable Navigraph Navigation Database and Navigraph Worldwide charts as default features!

Being designed from the ground up as a plug-in that runs inside XPlane 11 or XPlane 12, the TDS GTNXi offers the ability to run as a 2d pop-up inside XPlane as well as outside of XPlane in almost any XPlane aircraft, there is no need for dedicated Virtual Cockpit integration. In addition, at the same time, the TDS GTNXi can be run as a Virtual Cockpit integrated in select aircraft.

TDS GTNXi includes full Virtual Cockpit support for add-on aircraft integration in both drawing the LCD display as well as mouse clickspots! A full list of compatible aircraft can be found here:

https://tdssim.com/gtnxixplvcintegration

The TDS GTNXi is more than a GPS unit, it is also an audio panel, giving you the ability to tune COM and NAV frequencies, retrieve the most used frequencies, decode the Morse code identifier (some features are only available in the GTNXi 750). On top of this, both the GTNXi 750 and GTNXi 650 include a full ADS-B transponder which communicates with XPlane.

The TDS GTNXi is used to help you get familiarized with the real GTN Xi system. A very important feature is the ability to control the default XPlane Autopilot by using the NAV function, fly autopilot-coupled IFR approaches in both lateral and vertical modes, including fully coupled LPV approaches.

Realism Note
This software is designed for entertainment use ONLY, it is not designed as a flight training device, even though the quality of the product is exceptional and the fidelity of each key, knob, and digital touchscreen functionality are made to resemble a real GPS unit.

Product Features

The TDS GTNXi is a plugin of XPlane, able to communicate with XPlane 11 or XPlane 12.

Two GTNXi's units included: GTNXi 750 and GTNXi 650

Included in the TDS GTNXi XPlane product are both the GTNXi 750 and GTNXi 650, which can be displayed at the same time, both communicating with XPlane.
The TDS GTNXi offers two individual GTNXi units, thus offering the user the ability to select dual GTN750Xi, dual GTN650Xi or a combination between the two (750Xi and 650Xi).
There is also the ability to change the master device from the first to the second GTNXi unit when flying, enabling you to have one flight plan on the first GTNXi unit and another flight plan on the second GTNXi unit.

Autopilot

The TDS GTNXi is able to couple to the default XPlane autopilot and send roll and pitch commands. This includes fully autopilot coupled LPV approaches.

Radios/Audio Panel

The TDS GTNXi is able to control the XPlane COM and NAV radio frequencies.
Additionally, the GTNXi 750 has an integrated Audio Panel, offering you the ability to control audio navigation sources.

Unprecedented mapping

The TDSGTNXi has an unprecedented, high resolution map, including the ability to display color terrain, airport diagrams, water bodies, borders and other navigation information data.

Databases/Navigation Charts

The TDSGTNXi has full support for the Navigraph updateable navigation database (AIRAC) as well worldwide Navigraph Charts. Both features are part of the base TDS GTNXI XPlane. More information on Navigraph support can be found in the dedicated section.

Weather

The TDS GTNXi supports the display of Live Worldwide METAR at any airport. To display METAR, from the Home page, access Waypoint Info/Airport/WX Data. An internet connection is required. No login/account linkage is needed.

At this point, the TDS GTNXi does not support display of simulator precipitation of the weather radar. This will be re-analyzed once the XPlane 12 SDK will allow for this.

Crossfill

Crossfill between individual GTNXi units is not implemented at the time of writing, but it is also not ruled out as a future feature.The flight plan must be inserted/updated individually into each GTNXi unit.

ADS-B Traffic Page

The TDS GTNXi has a state of the art ADS-B transponder, giving you the ability to display XPlane targets (as part of XPlane ATC AI Traffic) on the dedicated traffic page as well as on a main Map overlay.
In addition, multiplayer online traffic data as part of xPilot(Vatsim)/PilotEdge targets are displayed.

TAWS - Situational Awareness

Selection of desired TAWS types:

- TAWS-A
- TAWS-B
- Terrain Proximity
- HTERRAIN Proximity
- HTAWS-B

Ability to select between Female and Male voices.

Additional Features

- Selected Altitude Range Arc - Receives data from the Flight Simulator Autopilot Altitude Selector Knob and displays the projected range arc on where you will reach the specified altitude, in both climb and descent.
- Dimmable Display - Easily customisable from the GTNXi interface
- Ability to modify sound volume - Easily customisable from the GTNXi interface

Simulator Requirement:

The TDS GTNXi XPlane is compatible with XPlane version 11.50 (64 bit) or higher and XPlane version 12.1.0 (64 bit) or higher XPlane is a registered trademark of Laminar Research

Minimum System Requirements:

PC running Microsoft Windows 10 64 Bit Version 1909 (November 2019 Update), Intel Core i5-12600K or AMD Ryzen 5 3500, 16GB RAM, NVIDIA GTX 2070 or AMD Radeon RX 5700 XT with at least 4GB Memory, HDD Space: 6GB

Installation Instructions

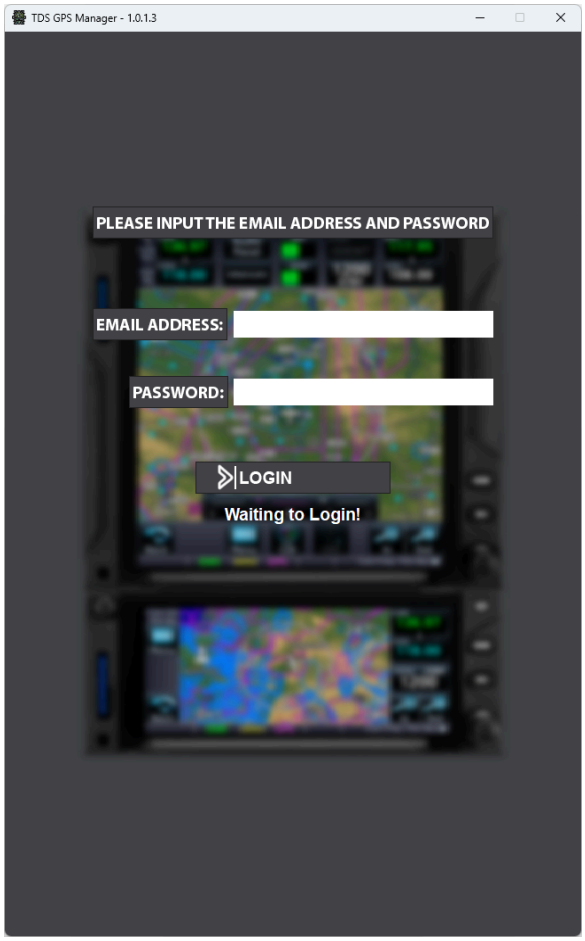
The TDS GTNXi can be easily downloaded and installed by following these simple instructions:

All download/installation procedures are performed via the proprietary TDS GPS Manager application. The application can be downloaded from the sales website, after purchasing the product.

Important Note: TDS GPS Manager version 1.0.1.3 or higher is required for an XPlane installation. In case you have an older version of the TDS GPS Manager, please download the latest one from the TDS Sim Software website/My Account section

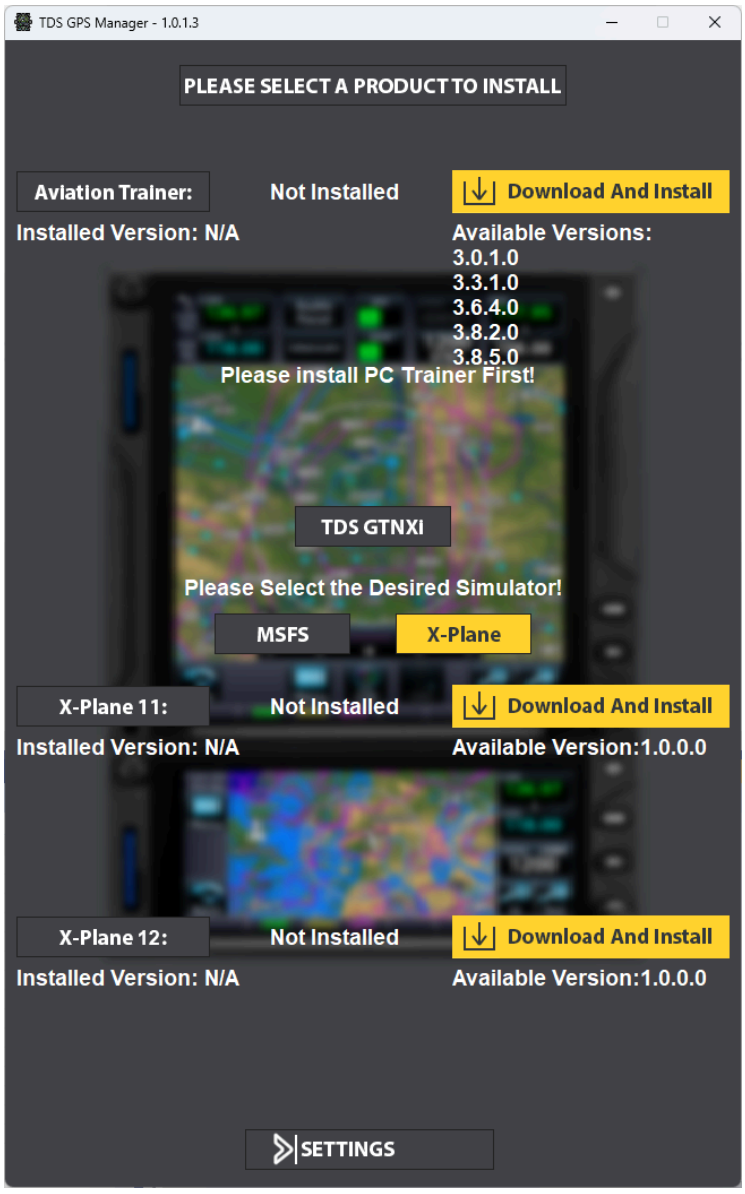
After the application is downloaded, run the executable from the Downloads folder or the selected download location, file name:
TDSGPSManager.exe

A login screen will be presented where the user has to input the login credentials (email address/password) which were used to register on the sales website, before purchasing the TDS GTNXi.



In case you do not remember the login credentials, please visit the My Account section of the sales website for more information:
http://www.tdssim.com

After successfully logging on, the GTNXi page will display. The first step is to install the required PC Trainer, this is done by pressing the Download and Install button.



Step 1: Installation of the PC Trainer

The first step is to download the PC Trainer, please wait for the download to complete, a progress percentage will be displayed on the screen.

After the download has completed, the installation will start automatically, press Next to advance through the installation screens in order to complete the installation of the PC Trainer.
Once the PC Trainer installation is complete, the actual GTNXi PC Trainer component will download. After it has downloaded, the installation for this component will start, press Next to advance.

A complete PC Trainer installation can be confirmed by the version number on the left side of the interface and the yellow button displaying Reinstall.

A copy of the PC Trainer will be saved in this location:

C:\ProgramData\TDS\Trainers

Step 2a: Installation of the TDS GTNXi XPlane 11

To download and install the TDSGTNXi for XPlane 11, select the XPlane tab, then press the yellow Download and Install button to the right of the XPlane 11 label. The entire procedure is done automatically, at the end of the installation a message box will appear, confirming the installation status.

Step 2b: Installation of the TDS GTNXi XPlane 12

To download and install the TDSGTNXi for XPlane 12, select the XPlane tab, then press the yellow Download and Install button to the right of the XPlane 12 label. The entire procedure is done automatically, at the end of the installation a message box will appear, confirming the installation status.

Each XPlane installation has two parts, the GTNXi Services Plugin and XPlane Plugin

The default installation directory of the GTNXi Services Plugin:

C:\ProgramData\TDS\GTNXi\XPlane11
or
C:\ProgramData\TDS\GTNXi\XPlane12

File name: TDSGTNServices.dll

In case the Windows ProgramData directory has been moved to a different location, you can access the TDS GTNXi installation folder by running the Run command(Windows + R key on the keyboard) and typing:

%PROGRAMDATA%\TDS\GTNXi\XPlane11
%PROGRAMDATA%\TDS\GTNXi\XPlane12

The default installation directory of the XPlane Plugin:
X-Plane 11\Resources\plugins\TDSGTNXi\64
or
X-Plane 12\Resources\plugins\TDSGTNXi\64

File name: win.xpl

Navigraph Support

Updating and using the Navigraph navdata

The TDS GTNXi XPlane offers support for Navigraph navdata, so you will always be able to fly using current navdata. There are no limitations to the Navigraph navdata as opposed to the already supplied TDS GTNXi navdata, which will ensure that the best possible experience is offered to TDS GTNXi users.

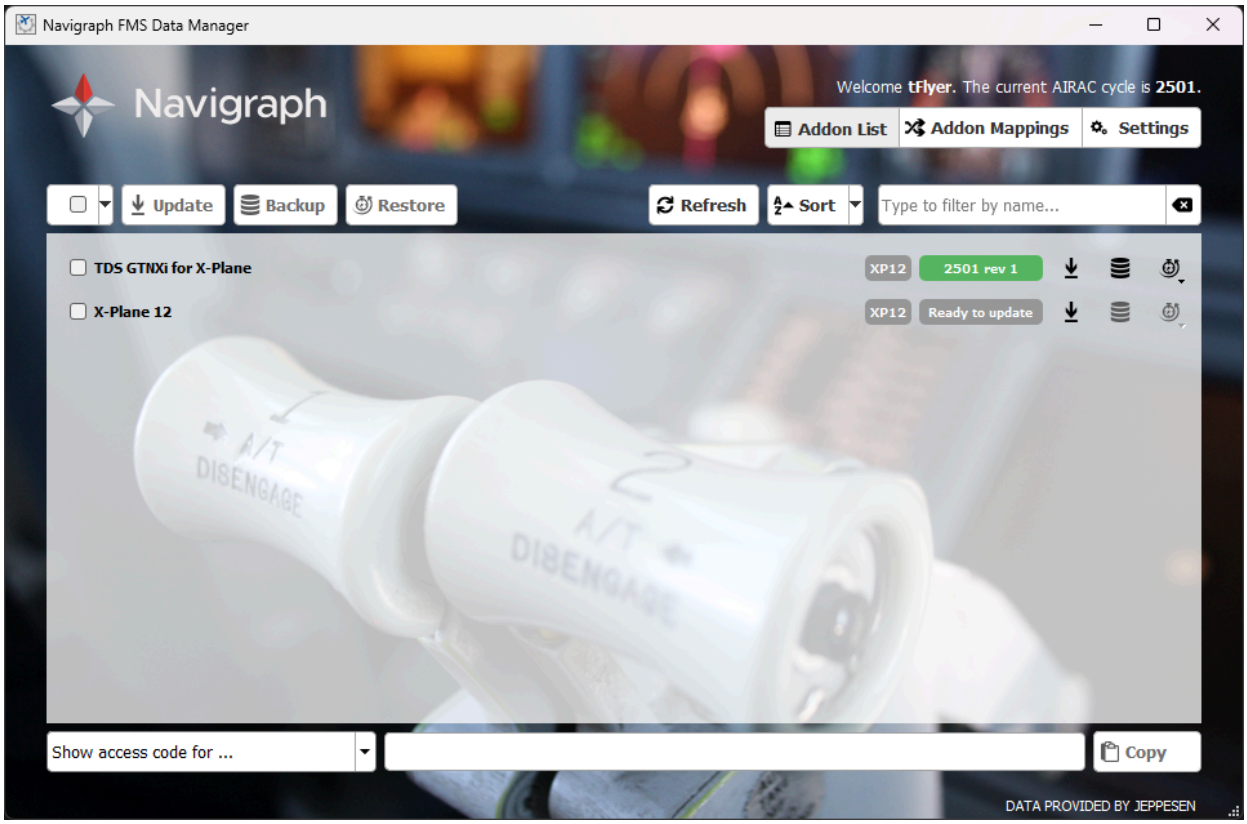
Important Note: An active Navigraph Unlimited or Navigraph Basic subscription is required, which can be obtained from:

https://navigraph.com/

The TDS GTNXi comes preloaded with the Navigraph AIRAC cycle 2302 (February 2023). Updating to the latest AIRAC cycle is performed from the Navigraph FMS Data Manager, which can be obtained from here:

https://navigraph.com/downloads

After downloading and installing the Navigraph FMS Data Manager, add the TDS GTNXi for XPlane from the Addon Mappings: Add button, then the TDS GTNXi is found in the Addon List tab:



Important Note: In order to update the navigation database in the TDS GTNXi, XPlane needs to be closed.

Upon XPlane startup of the TDS GTNXi plugin, the database loading takes about 10 seconds, during this time the TDS GTNXi screens will be black .

After the database has been loaded, the correct AIRAC cycle can be confirmed from the startup - Database Info page, as pictures below.

The top row of the database info will change to **Navigraph DB** if the Navigraph navigation database is used and has correctly loaded; if the PC Trainer database is used, the database name is: **Navigation**

If the TDS GTNXi is already started and in the Home page, the database cycle can be confirmed from the System - System Status - Database Info section.

Even though navigation databases do not expire or automatically disable themselves in the TDS GTNXi, we strongly encourage using up to date navigation data for the best possible experience.

The location of the Navigraph database is:

C:\Users\%username%\AppData\Roaming\TDS\GTNXi\Database\XPlane

Where **%username%** is your username.

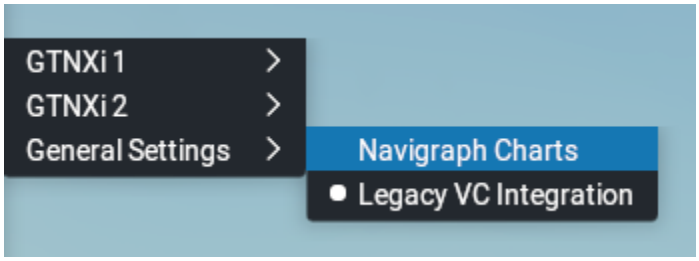
File name: **NavigraphDB.dat**

By manually renaming/removing the NavigraphDB.dat file, the PC Trainer database will be used. This process must be performed with XPlane closed.

Note: The XPlane 11 and XPlane 12 versions of the TDS GTNXi utilize the same navigation database.

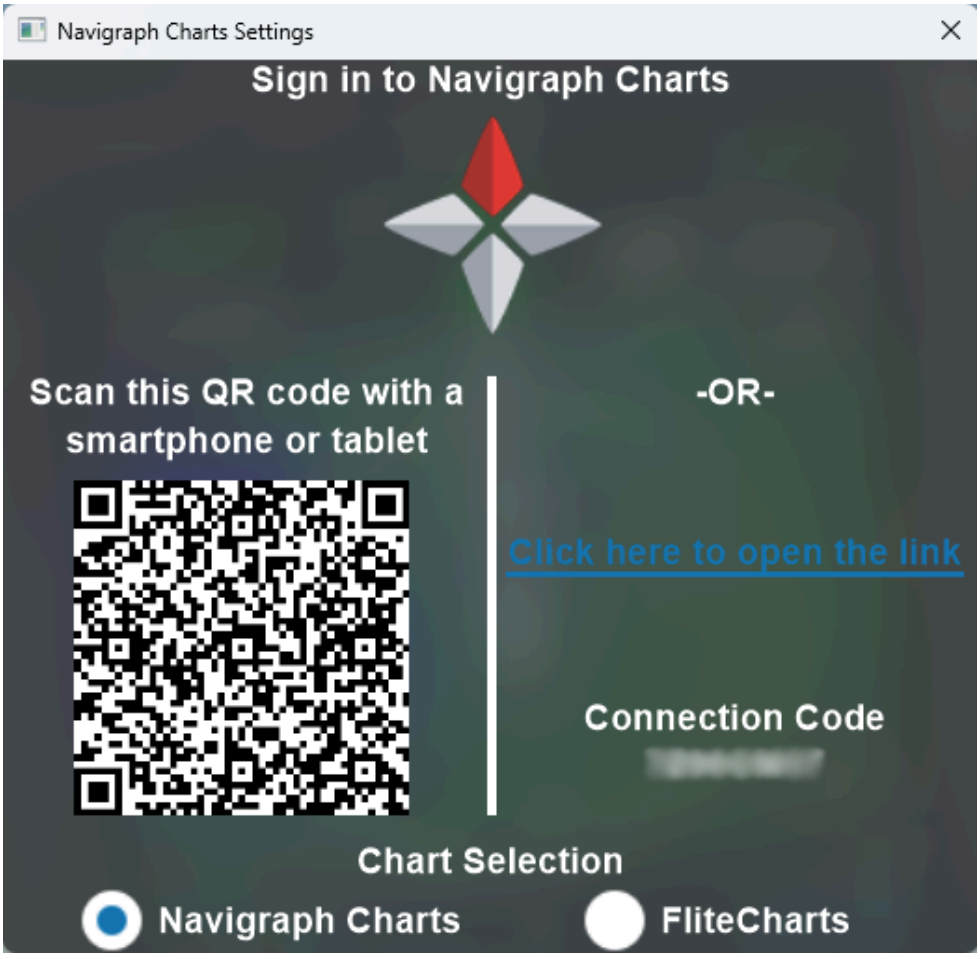
Connecting to Navigraph Charts

Connecting to Navigraph Charts needs to be done from inside XPlane while in flight; via the menu: TDS GTNXi /General Settings, **NAVIGRAPH CHARTS** window, as pictured below.



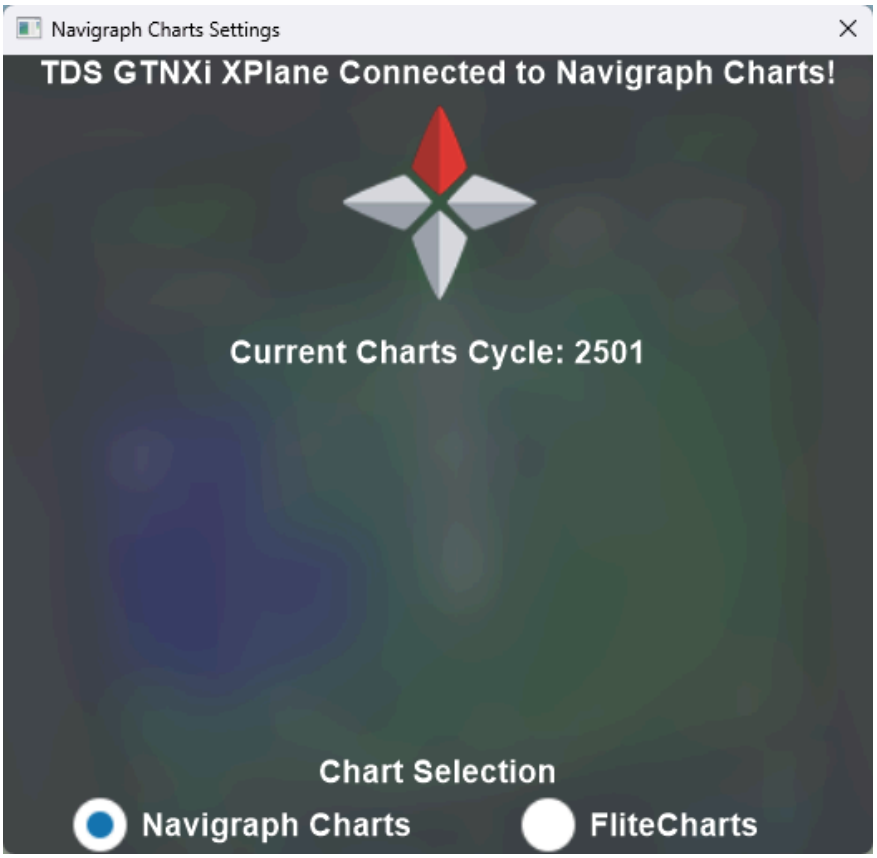
Important Note: An active Navigraph Unlimited subscription is required, which can be obtained from Navigraph:

https://navigraph.com/



There are two connection options available: scanning the provided QR code with a phone/tablet and then logging in to the Navigraph Account or clicking on the link to the right side and logging in to the Navigraph Account, then approving the TDS GTNXi.
The connection code is provided in case a manual input is needed due to unforeseen circumstances, but it should not be used as the link generated by us contains all this information, in order to facilitate a connection to Navigraph.

Once a connection to Navigraph has been established, the **NAVIGRAPH CHARTS** window will display the Navigraph logo as well as the current charts cycle. The connection token is saved between TDS GTNXi sessions, so there is no need to reconnect each time you start the TDS GTNXi. The time that the connection token can be used depends on the Navigraph server.

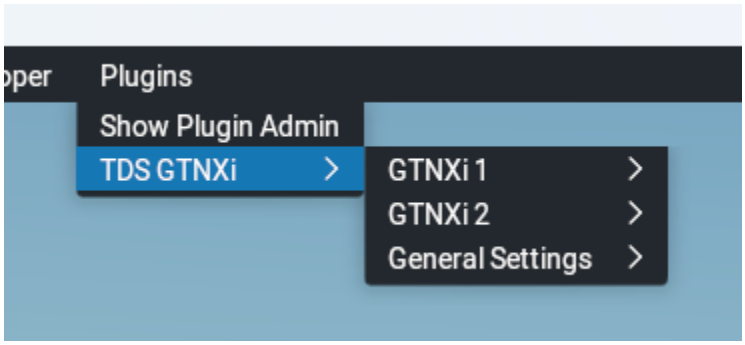


The Chart Selection option on the bottom of the interface allows for selection of the default FliteCharts, in case the user does not have a Navigraph Unlimited subscription. While we strongly advise using up to date navigation data and charts, this option is available for those wanting to use the provided North American FliteCharts. While the selection between the two options can be done in flight, we recommend making the selection before flight and keeping the selection within the flight.

Important Note: As in real life, charts can only be displayed on GTN750Xi units. The 650Xi units being smaller in size, do not support charts.

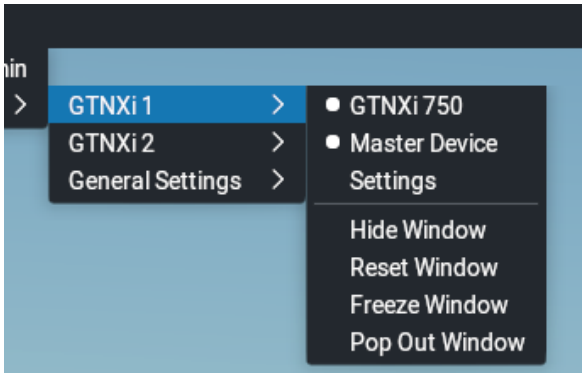
Running the TDS GTNXi inside XPlane

After the TDSGTNXi for XPlane has been installed in the desired simulator, an XPlane Plugins menu item named TDS GTNXi will be populated. This is the main interface with the TDS GTNXi and should be used to display or configure the actual GTNXi Units.



There are two GTNXi units available, independent of each other. Each GTN Xi unit can be configured to a 750Xi (or its variant: 725) or to a 650Xi (or its variants: 635, 625)

Once a GTNXi unit has been selected, the 2d pop-up will be displayed on the main GTNXi screen, with Unit 1 having the default position in the top left corner of the main XPlane window and Unit 2 having the default position in the top right corner of the main XPlane window.



Options of the GTNXi Unit

Each GTNXi can have different configurable options, they are described below:

Unit Type:
Clicking on the Unit Type (GTNXi 750) in this example, will close and disable the unit, thus offering the possibility to change the desired type to any other GTNXI unit or to close the desired unit.

Master Device:
A dedicated section for the Master Device is available in this document.

Settings:
A dedicated section for the Settings Window is available in this document.

Hide/Show Window:
Show and hide the 2d pop-up, whether inside the main XPlane window or as a regular window pop-up.

Reset Window:
Clicking on this menu item will reset the window to the default position. If the window is pop-ed out, it will be pop-ed in the main XPlane window. The bezel will be shown, if hidden.

Freeze Window:
Disables the resizing/moving of the GTNXi window.

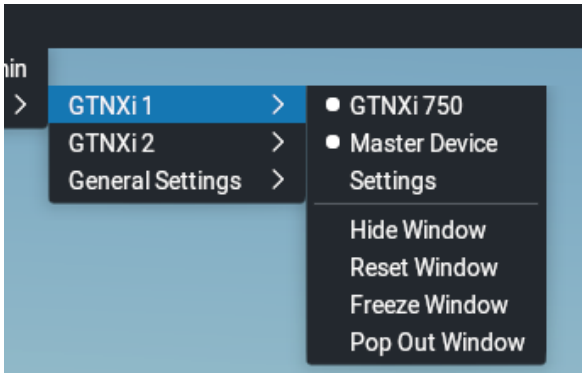
Pop Out/In Window:
The GTNXi window can be pop-ed out and it will behave like a regular Windows window, offering the ability to be dragged to a secondary monitor/touchscreen.

Master Device

As the TDS GTNXi features two GTNXi units, a master/slave device selection is needed to handle Autopilot/HSI/FlightPlan or specific datarefs.

The master/slave configuration assists for general autopilot handling, as well as HSI overrides in case both units are set to the same Cockpit Side setting. In addition, some XPlane datarefs that we override do not support multiple GPS units, hence the Master Device will always override them.

Selection of the master device is done via the Plug-ins menu, GTNXI Unit sub menu.



In case of a single GTNXi device being activated, that device is the master device.

Closing a GTNXi unit, will render the other opened GTNXi unit as the master device.

Settings Window

The TDSGTNXi provides the option to customize the product to best suit the specific needs. Each GTNXi unit can be independently customized through the Settings window, which can be accessed from the Unit's individual menu.

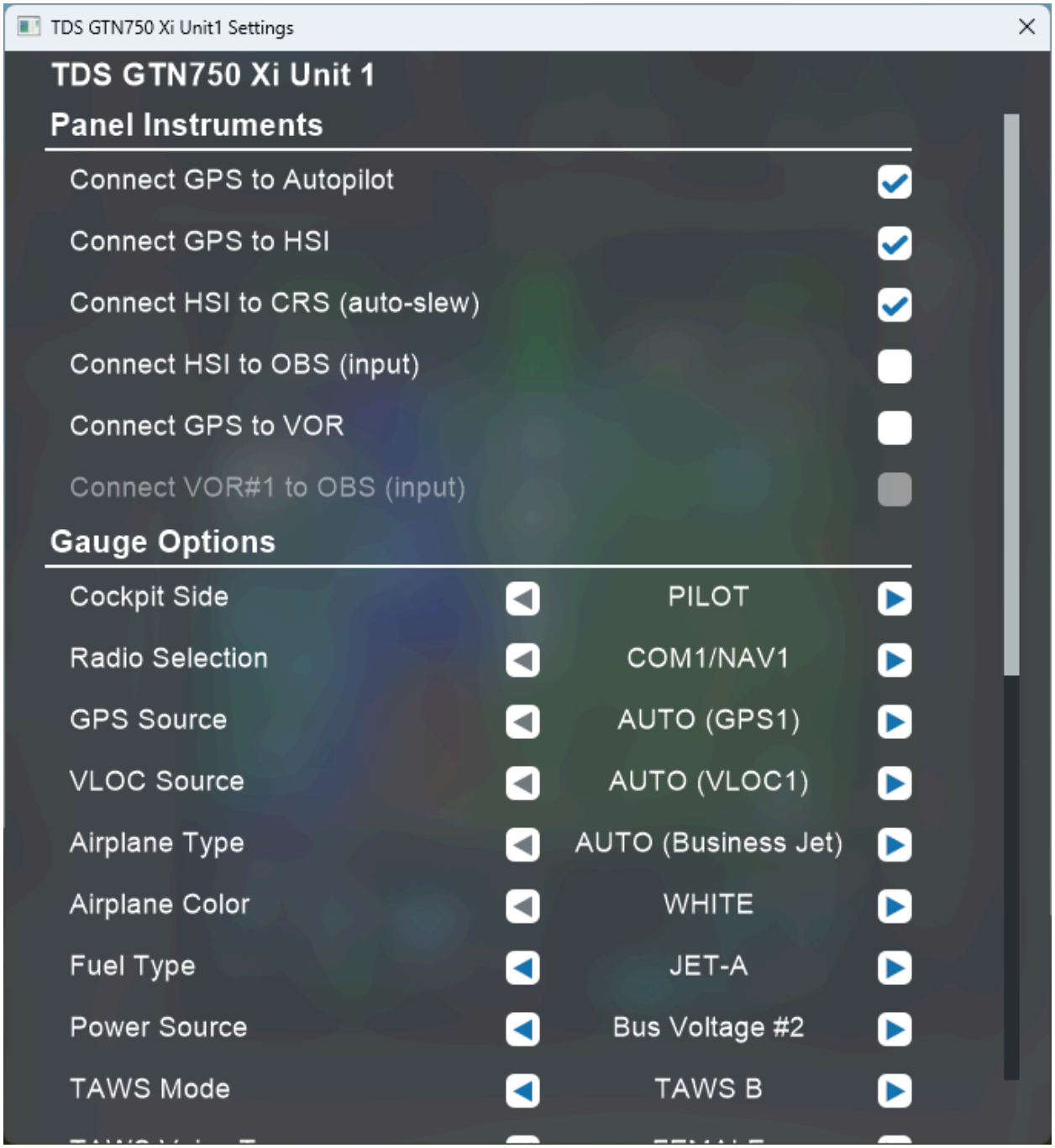
The individual settings for each unit are split into multiple categories:

- Panel Instruments
- Gauge Options
- Display Options
- Monitor Support

All settings can be configured from the User Interface, Settings Tab or from the INI File.
We suggest that you configure them from the User Interface.

The location of the INI File is per aircraft: a setting for a specific aircraft will not affect other aircraft.
The INI file is named: **TDSGTN.ini** and resides in the main aircraft folder, inside the XPlane directory.

Unit Settings Window



Panel Instruments

Connect GPS to Autopilot	Provides the ability to send roll and pitch commands to the XPlane Autopilot when the VLOC/GPS switch is in GPS Mode
Connect GPS to HSI	Provides the ability to override the GPS of XPlane with data from the respective GTNXi unit. When the VLOC/GPS switch is in GPS mode for the appropriate HSI side, then XPlane will synchronize the respective HSI with data from the GTNXi. We recommend having this feature enabled Selection of the appropriate GPS Source (AUTO/GPS1/GPS2) is performed from the Gauge Options/GPS Source
Connect GPS to CRS (auto-slew)	Synchronize the HSI's OBS with the DTK of the GTNXi when in GPS mode Selection of the appropriate GPS Source (AUTO/GPS1/GPS2) is performed from the Gauge Options/GPS Source
Connect GPS to HSI OBS (input)	If the GPS is connected to the HSI, this GTNXi will read the HSI's OBS value, when the GTNXi is in OBS mode.This setting is disabled if the GPS is not connected to the HSI
Connect GPS to VOR	Override the respective NAV receiver with data from the GTNXi. This feature is useful for aircraft which do not have an HSI or do not use the default HSI datarefs. The VLOC/GPS switch must be in VLOC mode Selection of the appropriate VLOC (AUTO/VLOC1/VLOC2) is performed from the Gauge Options/VLOC Source
Connect GPS to VOR# OBS (input)	If the GPS is connected to the VOR, this GTNXi will read the VOR's OBS value, when the GTNXi is in OBS mode Note that the desired VLOC SOURCE must be selected from the Gauge Options This setting is disabled if the GPS is not connected to the VOR

Gauge Options

Cockpit Side	Provides the ability to change the cockpit side of the actual device. Options include: **Pilot** and **Copilot** Note: XPlane provides data refs suffixed with _pilot and _copilot, so having independent units will feed the appropriate data to the unit. This way, the GTNXI Unit 1 can control _pilot HSI datarefs and the GTNXI Unit 1 can control _copilot datarefs
Radio Selection	Provides the ability to select between **COM1/NAV1** and **COM2/NAV2**
GPS Source	Select which GPS source is assigned to XPlane if the Connect to HSI is checked**: AUTO, GPS1, GPS2**
VLOC Source	Select which VLOC source is assigned to XPlane if the Connect to VOR is checked**: AUTO, VLOC1, VLOC2**
Airplane Type	Change the airplane type icon in map mode
Airplane Color	Select the airplane color between: **white** and **magenta**
Fuel Type	Select the fuel type: **AVGAS**, **JET-A**, **JET-B, DIESEL**
Power Source	Select the unit's power source: **AUTO, ALWAYS ON, AVIONICS BUS, MAIN BATTERY, Bus Voltage #1-6**
TAWS Mode	Select the TAWS mode: **Terrain Proximity**, **TAWS-A**, **TAWS-B**, **HTAWS-B**, **H-Terrain Proximity** **Requires Unit Restart**
TAWS Voice Type	Select the TAWS voice: **Female**, **Male**
SmartGlide	Select if SmartGlide is enabled or disabled, options include: Auto, Enabled, Disabled In Auto, SmartGlide is disabled for rotorcraft and jets **Requires Unit Restart**
Transponder VFR Key	Selects the default Transponder VFR Key Code: 1200 (US), 7000 (EUR), INI File (please refer to dedicated section below)
Transponder Auto Mode	Enable automatic transponder mode switching between Standby and ALT mode when transitioning between ground and air
Play Key Sounds	Play key sounds on the touchscreen
Play Audio Sounds	Play TAWS sounds from the respective GTNXi unit
Update Simulator Flightplan	Update XPlane's internal flight plan with the GTNXi's active flight plan

Use Default GPS Commands	In addition to the TDS commands, we provide the ability to opt-in for the default XPlane g430 commands to control the keys/knobs

Display Options

Digital Fuel Computer	Provides external sensor fuel data to the respective GTNXi unit
Air Data Computer	Provides external sensor air data to the respective GTNXi unit
CDI Key	Selects the display of the CDI key on the map page. If no CDI key is displayed, the respective GTNXI unit will default to GPS. **Requires Unit Restart**
Vertical Navigation Type	Select the desired vertical navigation type: **VNAV, VCalc** **Requires Unit Restart**

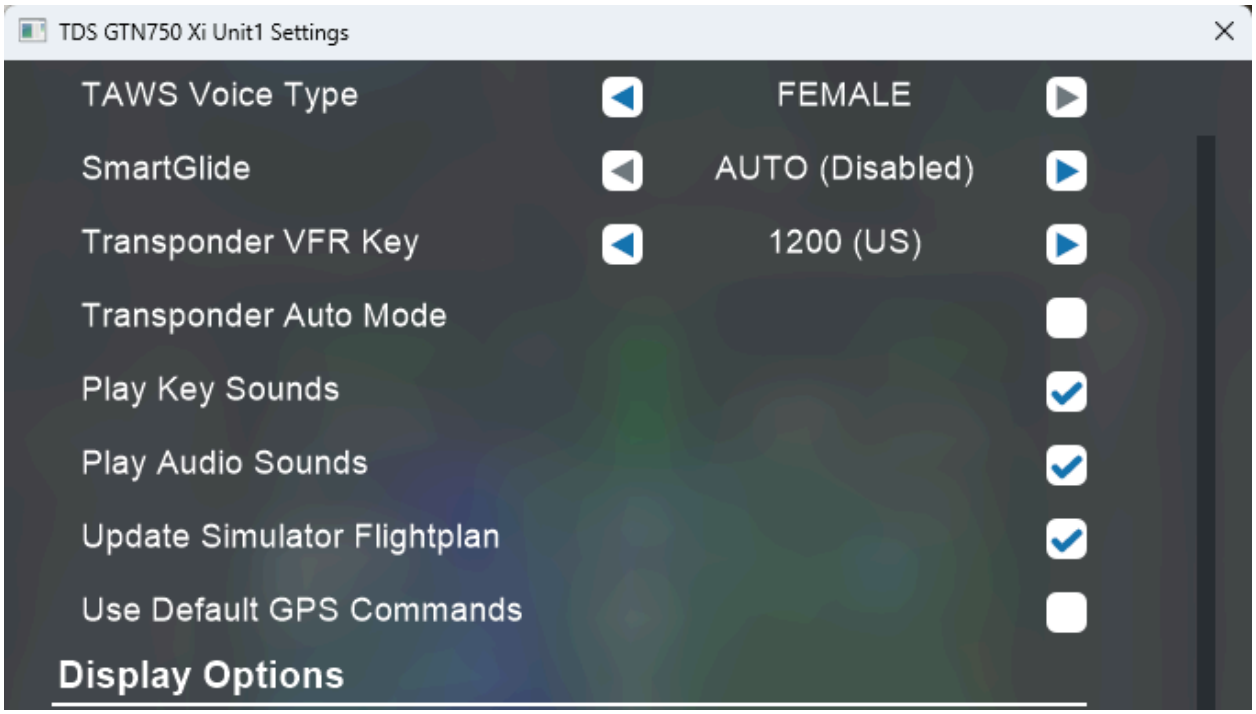
Monitor Support

Show Bezel	Provides the ability to show/hide the GTNXi bezel in 2d pop-up mode
Keep Aspect Ratio When Resizing	Keep the aspect ratio when resizing the respective GTNXi unit. Enabled by default
Step1: Select Monitor	Displays the selected monitor for multi monitor support. Allows for the selection of the secondary monitor to display the GTNXi window full screen. The XPlane SDK offers the monitor's index and resolution, we suggest making note of the desired monitor from the Windows Display Settings , then making the selection. After the correct selection has been performed, Step 2 is necessary to be followed
Step 2: Activate Full Screen	As soon as the correct monitor has been selected as part of Step1: Select Monitor, clicking this checkbox will activate the full screen mode. The bezel will disappear and the GTNXi screen will be moved to the selected monitor as a full screen window In case this is not desired, resetting the window will revert the TDS GTNXi to the default position

Updating the Simulator's Flight Plan

The TDS GTNXi XPlane can set the simulator's flight plan based on the actual unit's flight plan. Each GTNXi unit offers the ability to enable or disable this feature independently.

The Update Simulator Flightplan can be found in the Settings window, Gauge Options section:



XPlane 12 offers more than one flight plan, so each GTNXi unit, based on the Cockpit Side selection, will set the appropriate XPlane 12 flight plan (Pilot/Copilot).
In case both units are set on the same Cockpit Side, the Master Device will take priority.

XPlane 11 offers only one flight plan, so the active Master Device will provide the flight plan to XPlane.

Other Configurable Settings

Setting a Custom Transponder VFR Key code in the Transponder Page

Setting a custom transponder VFR key code is done via the INI file, which is located in each aircraft's main folder:
TDSGTN.ini

To change the code for the desired unit: GTN750.1 GTN750.2 GTN650.1 GTN650.2, add this line:

Transponder.CustomVFRCode = 7000
Note, the Transponder Settings option from the Settings window of the desired GTNXi unit must be set to "INI File", the corresponding ini file setting is: **Transponder.VFRCode = 0**

The range of the Transponder code must be from 0000 to 7777, with all digits starting at 0 and ending at 7. This means that the GTNXi will not accept any values of 8 or 9 in any digit places!

User Checklists

The GTNXi supports an electronic version of your aircraft's checklists. Checklists are stored in groups and as you complete a checklist item, you can advance to the next one.

When the GTNXi automatically detects the presence of a checklist file (***checklist.ace***), the Checklists key appears in the Utilities page:

Checklists are created using the Aviation Checklist Editor, found online at this link:
https://www8.garmin.com/support/download_details.jsp?id=5075

The checklist file must be called **checklist.ace** and its location is per aircraft, thus offering the ability to save and load aircraft specific checklists.

For XPlane 11:
X-Plane 11\Aircraft
For XPlane 12:
X-Plane 12\Aircraft

Note: The GTNXi will automatically load the user checklist on startup.

Custom Flight Plans

The GTNXi supports custom flight plans. The method is similar to importing flight plans from a datacard. They permit the user to create custom flight plans using flight planner tools and save them to separate files, which are used by the GTNXi. These flight plans can be previewed, activated or stored inside the GTNXi Flight Plan Catalog.

The flight plans must have the file format: ***.gfp*** and are stored at this location:

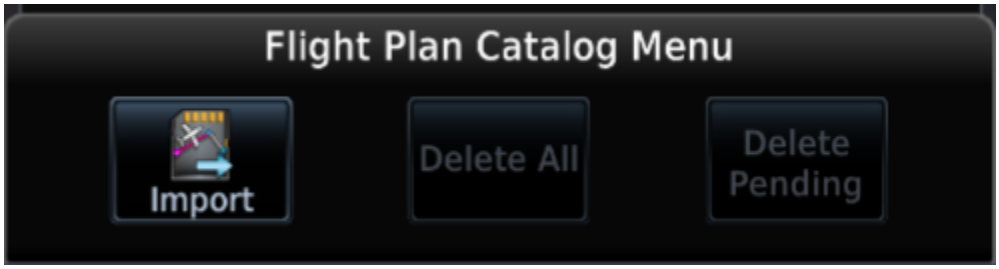
They are stored in this folder:
C:\ProgramData\TDS\GTNXi\FPL

Upon installation of the TDS GTNXi, a FPL folder will be created automatically containing a sample flight plan from CYOW to CYTZ, thanks to community member Les O'Reilly:

https://www.youtube.com/c/LesOReilly

Please note, the TDS GTNXi requires at least once flight plan to be available on startup, for the important button to become active. Subsequent flight plans can be added while in flight, without having to restart the software/individual unit. A flight plan is already provided with the TDS GTNXi installation, to facilitate the ease of inserting additional flight plans, during flight. We suggest that users keep at least one flight plan file in the FPL folder.

To activate a flight plan in the GTNXi, from the Home page, access the Flight Plan page, then click on the Menu key. Then access the Catalog function, then click on the Menu key. A pop-up menu should appear with an Import key.



Clicking on the Import key will display a list of all ***.gfp*** flight plans stored in the FPL folder. Select the desired flight plan to preview it, then you have the option to **Store** it inside the GTNXi's flash memory or automatically **Activate** it, so it can be flown.

Note: There is a maximum of 50 .gfp files that can be loaded from the FPL folder. This is a real life feature of the GTNXi and the TDS GTNXi abides to this. We suggest keeping the folder to a maximum of 50 files for the FPL folder.

User Waypoints

The GTNXi supports the ability to import user created waypoints from a file. The method is similar to importing user waypoints from a datacard. Each user waypoint will have a name, latitude longitude and optional comment.

Note: If a user waypoint is within 0.0001 degrees of latitude and longitude of a GTNXi database waypoint, then the GTNXi's database waypoint will be used.

To create a ***user.wpt*** file, open a spreadsheet program and each row contains an individual entry.
Column A: Waypoint Name
Column B: Comment
Column C: Latitude (decimal degrees)
Column D: Longitude (decimal degrees)

The file must be saved a **.csv** file (comma separated values), then renamed to ***user.wpt***

The file called ***user.wpt*** must be saved in this location:
C:\ProgramData\TDS\GTNXi

To import user waypoints, from the Home screen, press the Waypoints key to access the Waypoints page. When the GTNXi automatically detects the presence of a user waypoints file (***user.wpt***), the **Import Waypoints** key automatically appears:

Click on the **Import Waypoints** key to automatically import the waypoints, which will be imported in the **User Waypoint** page.

Interfacing with the TDS GTNXi

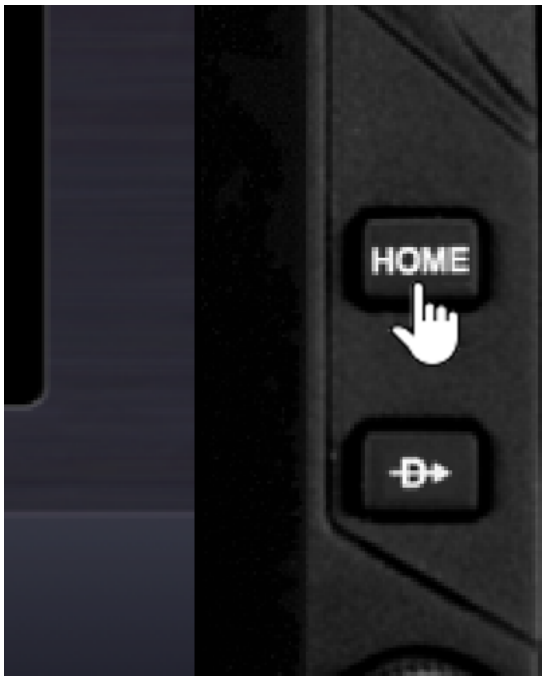
Interfacing with Pop-up Windows

Each GTNXi window is created using standard XPlane SDK window functions. It contains a touchscreen and keys/knobs.

Note: the TDS GTNXi, both in the GTN 750Xi format and the GTN 650Xi format feature the same key/knob configuration and positioning. All images below reflect the GTN 750Xi configuration, while the GTN 650Xi configuration is identical.

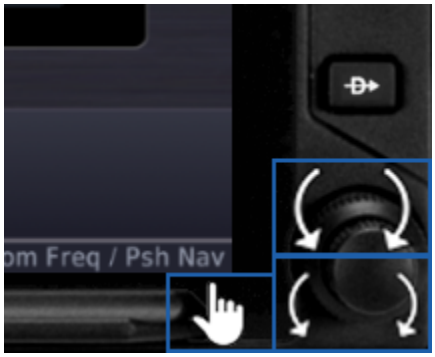
Two keys: Home and Direct-To, located on the right side of the unit
One Big dual knob: FMS knob, located on the bottom right side of the unit
One small single knob: Volume knob, located on the top left side of the unit

To control the keys: the mouse cursor will change to a hand and will respond to left clicks.
Holding the left click over a predefined period of time will result in special key actions.



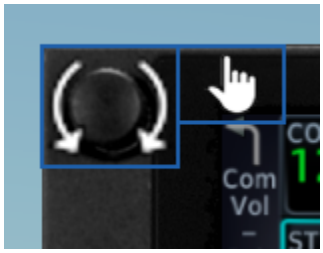
The FMS Knob is split into three areas, as shown in the image below:

- Outer (clockwise, counter-clockwise): top half of the knob, determined by the big arrows
- Inner (clockwise, counter-clockwise): bottom half of the knob, determined by the small arrows
- Push: to the left of the knob, represented by a hand cursor



The Volume knob is split into two areas, as shown in the image below:

- Knob (clockwise, counter-clockwise): the entire area of the knob, determined by the small arrows
- Push: to the right of the knob, represented by a hand cursor



The entire LCD touchscreen can be controlled using the mouse, where left click/left drag interact with the touchscreen functions. Right clicking on the touchscreen will close the pop-up.

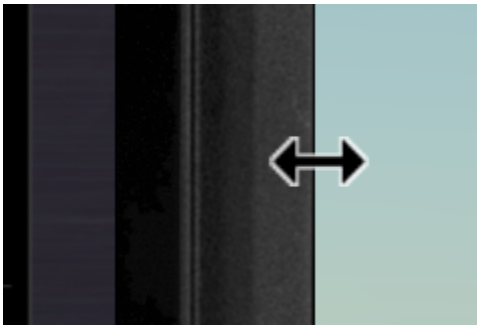
The TDS GTNXi supports full mouse wheel in both the 2d pop-up as well as the VC integrated version. The mouse wheel can be used for certain GTNXi functions, such as zooming in/out in the map page, scrolling the FPL page, scrolling lists, etc.

At the time of writing, there is a bug with the mouse wheel in the FPL page of the PC Trainer being inverted, while zooming in/out in the Map page will provide normal behavior.

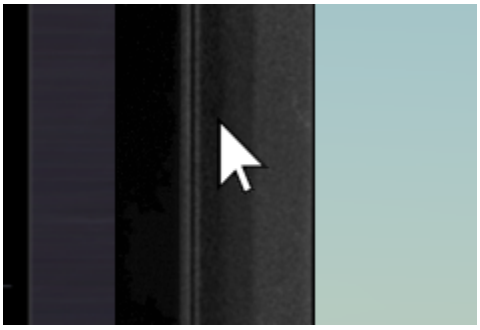
Properties of Pop-up Windows

Each GTNXi window is created using standard XPlane SDK window functions. Thanks to this method of creating windows, a high degree of user interaction is possible, such as:

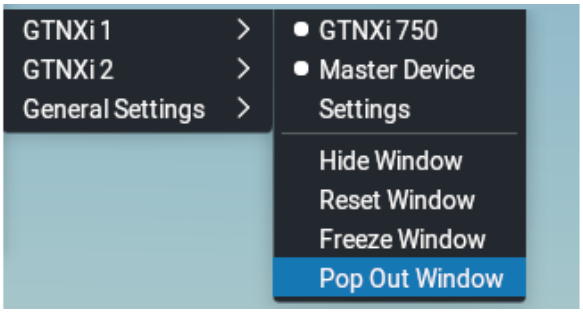
- Resizing the window to the desired dimensions:
    - Resizing is performed from by dragging the window from any of its sides

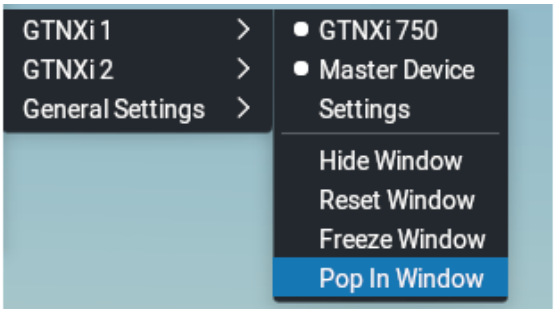


- Moving the window across the main screen:
    - Position the cursor anywhere over the bezel, but not inside the LCD screen or within a clickspot, so the mouse cursor will be an arrow. Then click and drag while holding the left mouse button, the window will move to the desired position.



- Popping out/in the window:
    - To pop-out a visible window, from the Menu/Plugins/TDS GTNXi/GTNXi Unit select Pop-out window; example shown below.
    - A popped-out window can be popped back in by selecting the Pop-in window menu item from the menu/Plugins/TDS GTNXi/GTNXi Unit; in addition, resetting a window will pop-it inside the main XPlane window using default positioning coordinates; example shown below:





Screen coordinates, visibility and pop-out state of windows are saved between sessions in the **TDSGTN.ini** file inside the aircraft's folder.

Sending Commands to Simulate Keys/Knobs

The TDS GTNXi supports accepting XPlane Custom Commands in order to control the keys/knobs.

As the TDS GTNXi for XPlane contains two distinct windows, the specific window designator must be added at the end of the command name as a suffix: "_1" for the GTNXi Unit 1 and "_2" for the GTNXi Unit 2.

TDS/GTNXI/FMS_OUTER_CCW TDS/GTNXI/FMS_OUTER_CW	FMS Outer Knob Counter Clockwise(Bottom Right) FMS Outer Knob Clockwise (Bottom Right)
TDS/GTNXI/FMS_INNER_CCW TDS/GTNXI/FMS_INNER_CW	FMS Inner Knob Counter Clockwise (Bottom Right) FMS Inner Knob Clockwise(Bottom Right)
TDS/GTNXI/FMS_PUSH	FMS Knob Push
TDS/GTNXI/HOME	Home Key
TDS/GTNXI/DTO	Direct-To Key
TDS/GTNXI/VOL_CCW TDS/GTNXI/VOL_CW	Small Knob Counter Clockwise (Top Left) Small Knob Clockwise (Top Left)
TDS/GTNXI/VOL_PUSH	Small Knob Knob Push (Top Left)

Example for pushing the Home Key of the GTNXi Unit 1:
TDS/GTNXI/HOME_1

Example for turning clockwise the FMS Outer Knob of the GTNXi Unit 2:
TDS/GTNXI/FMS_OUTER_CW_2

In addition, these commands control general GPS settings:

TDS/GTNXI/MASTER_DEVICE_1	Set Unit 1 as the Master Device if the unit is initialized
TDS/GTNXI/MASTER_DEVICE_2	Set Unit 2 as the Master Device if the unit is initialized

Reading Simulator Datarefs

The TDS GTNXi provides datarefs to those interested in this data, to drive custom avionics solutions.
Below is a list of the datarefs that we expose.
The “_1” suffix represents the GTNXi Unit 1
The “_2” suffix represents the GTNXi Unit 1
The “_master” suffix represents the master unit

Datarefs

Name	Type	Units	Suffix
TDS/radios/indicators/hsi_bearing_deg_mag	float	degrees	_1 _2 _master
TDS/radios/indicators/hsi_flag_from_to	int	enum	_1 _2 _master
TDS/radios/indicators/hsi_hdef_dots	float	dots	_1 _2 _master
TDS/radios/indicators/hsi_vdef_dots	float	dots	_1 _2 _master
TDS/radios/indicators/hsi_has_dme	int	boolean	_1 _2 _master
TDS/radios/indicators/hsi_dme_distance_nm	float	nautical miles	_1 _2 _master
TDS/radios/indicators/hsi_dme_speed_kts	float	knots	_1 _2 _master
TDS/radios/indicators/hsi_dme_time_min	float	minutes	_1 _2 _master
TDS/radios/indicators/hsi_flag_glideslope	int	boolean	_1 _2 _master
TDS/radios/indicators/hsi_display_horizontal	int	boolean	_1 _2 _master
TDS/radios/indicators/hsi_display_vertical	int	boolean	_1 _2 _master
TDS/radios/indicators/gps_course_degtm	float	degrees	_1 _2

TDS/radios/indicators/gps_cross_track_nm	float	nautical miles	_1 _2
TDS/radios/indicators/gps_time_min_eta	float	minutes	_1 _2
TDS/radios/indicators/gps_nav_id	string		_1 _2

Note: TDS GTNXi Datarefs starting with gps_ contain three variations: two with the “_1” and “_2” suffixes and a third without any suffix, to reflect the master unit.

Examples:

Suffix “_1”: **TDS/radios/indicators/gps_course_degtm_1**
Suffix “_2”: **TDS/radios/indicators/gps_cross_track_nm_2**
Suffix “_master”: **TDS/radios/indicators/hsi_hdef_dots_master**
No suffix (master): **TDS/radios/indicators/gps_time_min_eta**

Active Unit Datarefs

Name	Type	Units	Description
TDS/radios/indicators/gtnxi_unit1	int	boolean	GTNXi Unit 1 active status
TDS/radios/indicators/gtnxi_unit2	int	boolean	GTNXi Unit 2 active status

Interfacing with External Hardware

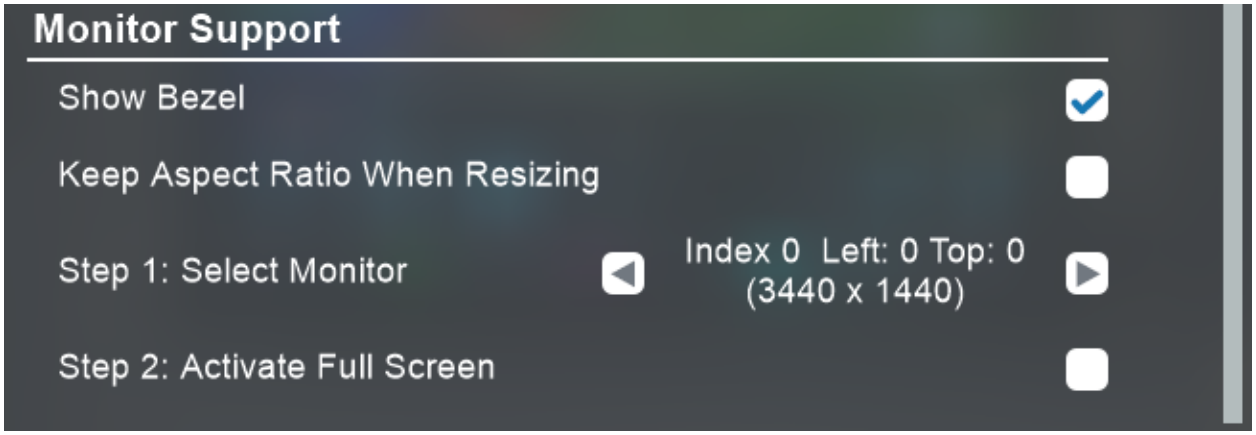
The TDS GTNXi XPlane can easily interface with external hardware.

RealSimGear Flight Sim Avionics GTN750 and GTN650:

Real Sim Gear hardware can fully benefit from the TDS GTNXi XPlane for both easy full screen display as well as interacting with the keys/knobs.

Interaction with the keys/knobs is done automatically by updating the RealSimGear CommandMapping.ini file to the latest version supporting the TDS GTNXi XPlane.

Moving the GTNXi displays to the respective RealSimGear LCD screen is performed using this method:
From within the TDS GTNXi GTNXi Unit Settings Window, scroll down to Monitor Support.
Select the desired RealSimGear monitor (Step 1), then Activate Full Screen (Step 2).



The TDS GTNXi will automatically move the respective GTNXi unit to the RealSimGear display, as well as hide the bezel. The screen positioning settings will be saved for future XPlane sessions.

Note: The RealSimGear units must be configured for touchscreen.

More information on RealSimGear hardware products can be found on the website:

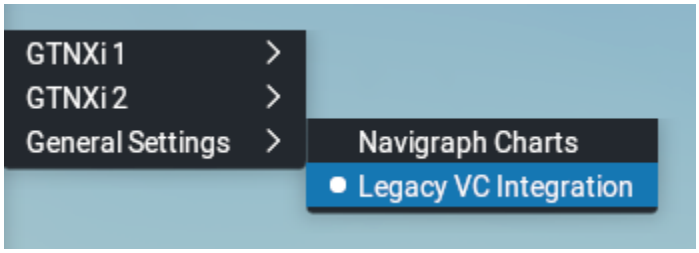
https://realsimgear.com/

Other hardware solutions can benefit from the TDS GTNXi XPlane Command Mapping (described in the section above) for key/knob interaction.

Legacy VC Integration

Offers the ability for the TDS GTNXi to be integrated into the legacy GTN bezel of add-on aircraft which do not feature native TDS GTNXi virtual cockpit integration.

The Legacy VC Integration is enabled by default and the state can be changed from the TDS GTNXi menu/General settings.



This feature is available to facilitate the TDS GTNXi virtual cockpit gauge placement within the panel.png file of the respective aircraft add-on, as well as interacting with the keys/knobs.

Upon aircraft loading, the value is being checked, if the Legacy VC Integration checkbox is checked, then the TDS GTNXi proceeds with checking for a Legacy VC integration of the respective aircraft and configures the TDS GTNXi to work with the aircraft as well as saving the settings inside the **TDSGTN.ini** file for future loading.

Note: this feature will only work on aircraft which do not have a native TDS GTNXi VC integration

A TDS GTNXi Legacy VC integrated aircraft will have a modified **TDSGTN.ini** file
[GENERAL] section with this key/value:
Legacy.VCMode=1

Do not remove this key/value from the **TDSGTN.ini** file, for the VC integration to properly function.
In addition, for the feature to work on subsequent aircraft loading, the Legacy VC Integration must be checked.

As each add-on aircraft developer has developed legacy GTN integrations differently, this feature could need adjustment for the respective aircraft.

If this feature does not function with desired XPlane add-on aircraft with legacy GTN integration, we suggest contacting TDS Sim Software support and providing as many details as possible, including the exact aircraft name.

Virtual Reality (VR) Support

The TDS GTNXi XPlane has been designed with VR support within the limitations of the XPlane engine.

As each GTNXi unit window is a native XPlane window, full VR support is available without any user interaction or any special VR software needed.

The GTNXi windows are created as any regular XPlane window. This includes resizing/moving the window in VR mode, interacting with it via an external VR controller or the VR mouse.

When inside VR mode, the window properties from the TDS GTNXi menu are disabled with the exception of showing/hiding the window and accessing the Settings window. The Settings window is not created as a VR window.

Note: Due to simulator limitations, the VC integrated gauge can only interact with a VR controller and not the VR mouse. This is a technical limitation of the legacy methods of providing VC integration. We suggest using the 2d pop-up when in VR mode if the VR mouse is the only controller available.

Troubleshooting

Uninstalling

The TDS GTNXi XPlane can be easily and quickly uninstalled from the TDS GPS Manager.
To uninstall the TDS GTNXi XPlane, open the TDS GPS Manager, login using your credentials, then access the Settings tab. You should see a screen as shown below, just select the desired XPlane version and confirm the uninstall action.

Log Files

The TDS GTNXi XPlane provides the ability to log information, warning and errors. The information is saved into log files, as described below:

- **TDSGTNXPlaneLogLog.txt** for the main executable
- **TDSGTNXi750Unit1Log.txt** for the GTNXi 750 Unit 1
- **TDSGTNXi750Unit2Log.txt** for the GTNXi 750 Unit2
- **TDSGTNXi650Unit1Log.txt** for the GTNXi 650 Unit 1
- **TDSGTNXi650Unit2Log.txt** for the GTNXi 650 Unit 2

These Files are saved in the Windows Documents folder.

They provide the information needed to troubleshoot most problems.

FRAPS - Black Screen

The TDS GTNXi XPlane is currently incompatible with FRAPS, the incompatibility will lead to black screens on both GTNXi displays. The solution is to close FRAPS when using the TDS GTNXi XPlane.

AVG/Avast/Norton Antivirus Users - Black Screen

In the very rare case when AVG/Avast/Norton Antivirus is installed and the customer experiences the GTNXi black screen, the solution is to add an antivirus exception for the PC Trainer executable folder or to temporarily disable real-time protection to confirm that this is the correct fix.

Since this is a moderately complex process, we suggest contacting tech support for instructions.

Tech Support

To obtain tech support for the TDS GTNXi XPlane, please post your questions in the official TDS Sim Software **Discord** channel, in the appropriate XPlane section:

https://discord.gg/NupgPCUgsH

You can also obtain support in the TDS Sim Software support forum, please post your questions in the appropriate XPlane section:

forum.tdssim.com

To keep up to date with news, pictures and all other TDS SIm Software information, you can visit and **Like** our **Facebook** page:

https://www.facebook.com/tdssimsoftware

We stand by our products and we will treat all tech support questions with utmost importance. We do our best to answer your question promptly.

For all other inquiries, please email us at:

support@tdssim.com