

# 1 GETTING STARTED

## 1.1 Model Descriptions

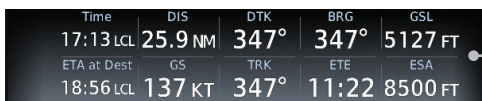
This guide covers the operation of the GTN 725 and 750. In general, all models will be referred to as the GTN 7XX, except where there are physical or operational differences. The GTN units are 6.25 inches wide and 6 inches high. The display is a 708 by 600 pixel, 6.9 inch diagonal color LCD with touchscreen controls. The units include one removable SD datacard for the databases and software upgrades.

The GTN 7XX simplifies your workload with an easy-to-use touch panel that provides a visual display of both controls and functions. The required controls are displayed for the selected function. Keys on the display allow you to access and control their functions by a simple touch on the interactive display.

The GTN 7XX can integrate a variety of avionics that will not only simplify operation, but also save panel space. The GTN 725 and 750 have their own GPS/SBAS navigator and flight planning functions. The GTN 750 adds VHF Com and VHF Nav radios. Selected optional external equipment allows you to display and control active traffic systems, XM Entertainment Radio, XM Weather, audio panel, and a Mode S transponder directly from the GTN 7XX display, and more. When the optional audio panel and/or transponder are not installed, the area on the upper portion of the display is used for configurable navigation information.

### 1.1.1 GTN 725

The GTN 725 has a GPS/SBAS engine and is TSO C146c certified for primary domestic, oceanic, and remote navigation including en route, terminal, and non-precision approaches, and approaches with vertical guidance, such as LPV and LNAV/VNAV. The GTN 725 can simultaneously give aviators vital approach information and weather and traffic data in relation to their position on a large, color moving map display. Thanks to a high-contrast color display, the information can be easily read from wide viewing angles even in direct sunlight. Its color moving map features a built-in database that shows cities, highways, railroads, rivers, lakes, coastlines, and a complete Jeppesen database. The Jeppesen database (that can be updated with a front-loading datacard) contains all airports, VORs, NDBs, Intersections, FSSs, Approaches, DPs/STARs, and SUA information.



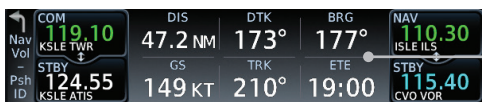
Navigation Information

**Figure 1-1 GTN 725 Upper Display Without Optional Transponder or Audio Panel**

Pilots will enjoy the GTN 725 as a flexible and powerful navigator, especially when it is coupled with traffic, lightning detection, and weather interfaces. With the PC-based FDE prediction program, the GTN 725 may be used for oceanic or remote operations. For the latest in graphic and text weather information, the GTN 725 can interface to XM Satellite Radio's XM Weather Service via the Garmin GDL 69/69A datalink receiver.

### 1.1.2 GTN 750

The GTN 750 includes all of the features of the GTN 725, and also includes a TSO'd airborne VHF communications transceiver and TSO'd airborne VOR/Localizer and Glideslope receivers.



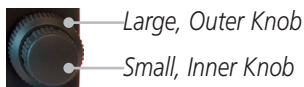
Navigation Information

**Figure 1-2 GTN 750 Upper Display Without Optional Transponder or Audio Panel**

## 1.2 About This Pilot's Guide

### 1.2.1 Conventions

Bold text indicates a control. The **small right** knob is the smaller, inner knob of the two concentric rotary knobs on the lower, right corner of the bezel. The **large right** knob is the larger, outer knob.



**Figure 1-3 Large/Small Concentric Knobs**

A graphic of a control on the side of the page refers to the control you should use for the associated step as shown below.

### 1.2.2 Using the Touchscreen

Most of the controls are operated by touching the display. Highlighted icons and keys may be simply touched to make a selection. A list of menu items may be scrolled by touching the screen and retaining pressure while sliding your finger up or down. Map displays may be panned by touching the screen

and retaining pressure while sliding your finger in the desired direction. Pinch-to-zoom capability is available in software v6.20 or later.



You can return to the previous page or exit the current function by touching the **Back** key.



Quickly return to the Home page by pressing the **HOME** key. Press and hold the **HOME** key to reach the Map page.

## 1.3 Product Description

This section provides an overview of the GTN 7XX product and a quick look at some important features. The GTN 7XX presents a full-color moving map with navigation information to the pilot through a large-format display. Controls are a combination of rotary knobs and push-keys on the bezel with the color display providing information as well as a touchscreen controls. The GTN 7XX has a 708 x 600 pixel, 6.9 inch LCD display.

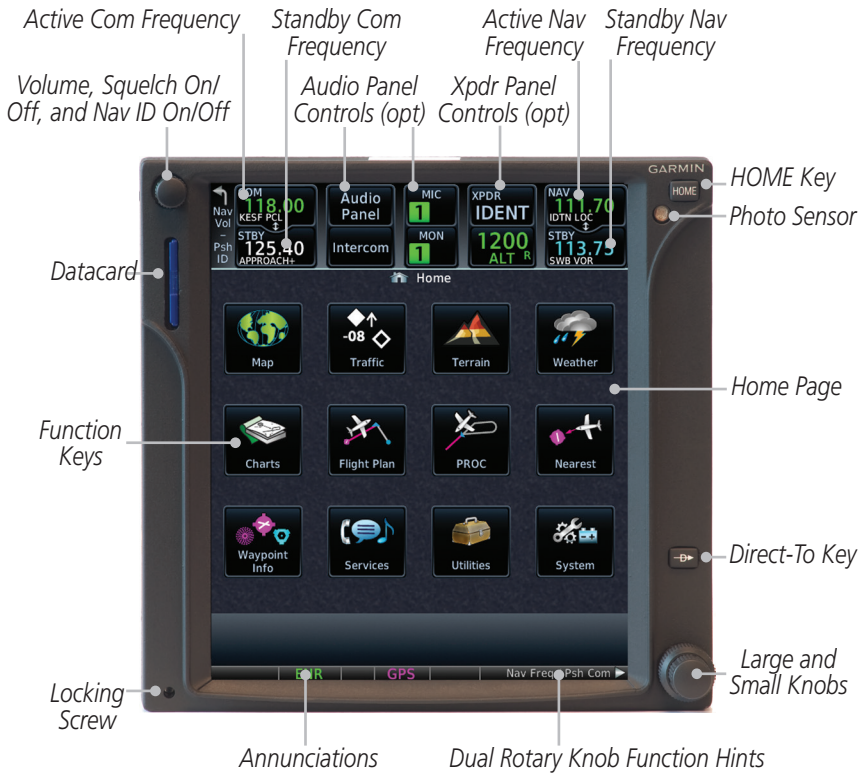


Figure 1-4 GTN 750 Front Panel

## 1.3.1 Datacard

The GTN 7XX uses a Secure Digital (SD) card or Flight Stream 510 to load and store various types of data. The datacard is required for Terrain, FliteChart, and ChartView database storage and all database updates.



**NOTE:** Do **Not** remove or insert the datacard while in flight. Ensure the GTN 7XX is powered off before inserting or removing a datacard.



**NOTE:** For instructions on updating databases refer to section 19.2.

### 1.3.1.1 Inserting a Datacard

1. Insert the datacard in the datacard slot (the label side of the card should face the right edge of the display bezel).
2. To eject the card, gently press on the datacard to release the spring latch.

## 1.3.2 Pilot Controls

The GTN 7XX controls have been designed to simplify operation of the system and minimize workload and the time required to access sophisticated functionality. Controls are located on the bezel and on the touchscreen display. Controls are comprised of dual concentric knobs, volume/squelch knob, bezel keys, and active touch areas on the display.

### 1.3.2.1 Volume/Squelch Knob

The **Volume** knob located in the top left corner of the bezel controls audio volume for the selected Com radio or Nav receiver and external audio input devices that are controlled via the GTN interface to the optional remote-mounted audio panel, if installed. When the Com radio is active, press the **Volume** knob momentarily to disable automatic squelch control for the Com radio. When the Nav radio is active, press the **Volume** knob momentarily to enable/disable the ident tone for the Nav radio.



**Figure 1-5 Volume/Squelch Knob**

## 1.3.2.2 Large/Small Concentric Knobs

The **large right** and **small right** knobs are used for data entry, such as in the Waypoint or Direct-To functions, and to set the frequencies for the NAV/COM radios in units so equipped.



Figure 1-6 Large/Small Concentric Knobs

## 1.3.2.3 HOME Key

Pressing the **HOME** key displays the Home page, the main screen for accessing the GTN features. Pressing and holding the **HOME** key will open the Map page from any other page.



Figure 1-7 HOME Key

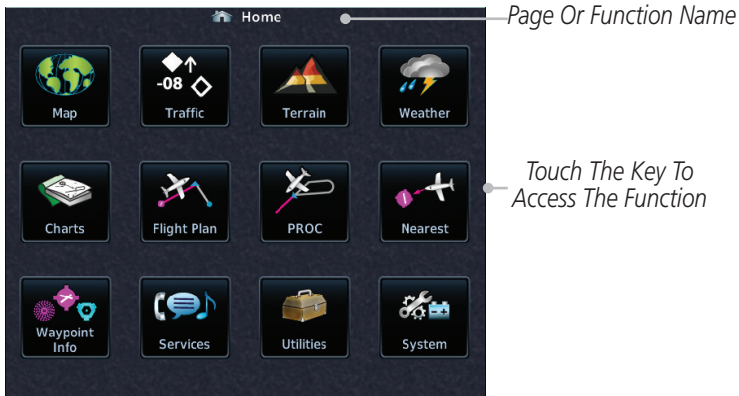


Figure 1-8 Home Page

## 1.3.2.4 Direct-To Key

The **Direct-To** key provides access to the direct-to function, which allows you to enter a waypoint and establishes a direct course to the selected destination.



Figure 1-9 Direct-To Key

### 1.3.2.5 Touchscreen Keys

Touchscreen keys are placed at the lower portion of the display. The keys vary depending on the page selected. Touch the key to perform the function or access the described information.



Figure 1-10 Touchscreen Key Control Example

## 1.4 Unit Power Up

The GTN 7XX System is integrated with the aircraft electrical system and receives power directly from electrical buses. The GTN 7XX and supporting sub-systems include both power-on and continuous built-in test features that exercise the processor, memory, external inputs, and outputs to ensure safe operation.

### 1.4.1 Start-Up Screens

During system initialization, test annunciations are displayed. All system annunciations should disappear typically within the first 30 seconds after power-up. Upon power-up, key annunciator lights also become momentarily illuminated on the GTN 7XX display bezel.

The splash screen displays the following information:

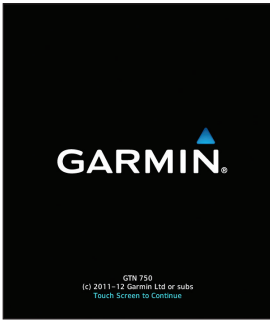
- Copyright
- Database List and System version
- Instrument Panel Self-Test

Currently installed database information includes valid operating dates, cycle number, and database type. When this information has been reviewed for currency (to ensure that no databases have expired), the pilot is prompted to continue. Databases that are not current will be shown in amber.

During the startup process the user may be asked if they would like to update to newer databases. Additional information on database updates can be found in 19.2.

The COM and NAV radios, transponder controls, GDL 88 control panel, and audio panel controls are displayed on the Start-Up screens. Some functions may be unavailable until after the databases are verified. Also, the audio panel controls may be temporarily unavailable until the GMA 35 has finished its

start-up process.



1 - Copyright



2 - SW & Database Versions & Dates



3 - Panel Self-Test

Figure 1-11 System Startup Pages

## 1.4.2 Database Verification and Fuel Settings

Continue

1. When the System and Database Version page appears, ensure databases are current. Then, touch **Continue**.



Figure 1-12 System Startup Pages

2. When the Instrument Panel Self-Test and Fuel Setting page appears, ensure that the CDI/HSI outputs and other displayed data are correct on the external interfaced equipment.

Foreword

Getting Started

Audio & Xpdr Ctrl

Com/Nav

FPL

Direct-To

Proc

Charts

Wpt Info

Map

Traffic

Terrain

Weather

Nearest

Services/Music

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3. Touch each of the Fuel value keys and set the appropriate values as desired. Fuel capacity units are selected on the System - Units page.

**NOTE:** When the GTN is interfaced with a digital fuel computer the pilot may not be able to manually edit the fuel flow and fuel on board data on the Self-Test.



Start-Up  
Instrument  
Panel Test  
Conditions

Touch To Set  
Current Fuel  
Quantity

Touch To Set  
Fuel Flow

Touch To Continue  
To Home Page

Figure 1-13 Instrument Panel Self-Test & Fuel Settings Page

4. When the Fuel on Board value is selected, touch the **Full** or **Tabs** keys to display those values after they have been set.

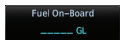






Figure 1-14 Fuel On Board Page

5. Touch the **Set Full/Tabs** key to set the fuel values for Fuel Full Capacity and Fuel Tab Capacity. After setting the fuel values, touch the **Back** and then the **Enter** keys to return to the Instrument Panel Self Test page.



Figure 1-15 Fuel Capacity Setup Page

- On the Instrument Panel Self Test page, touch the **Fuel Flow** key and then use the numeric keypad to set those values. Touch the **Enter** key after selecting the Fuel Flow values.

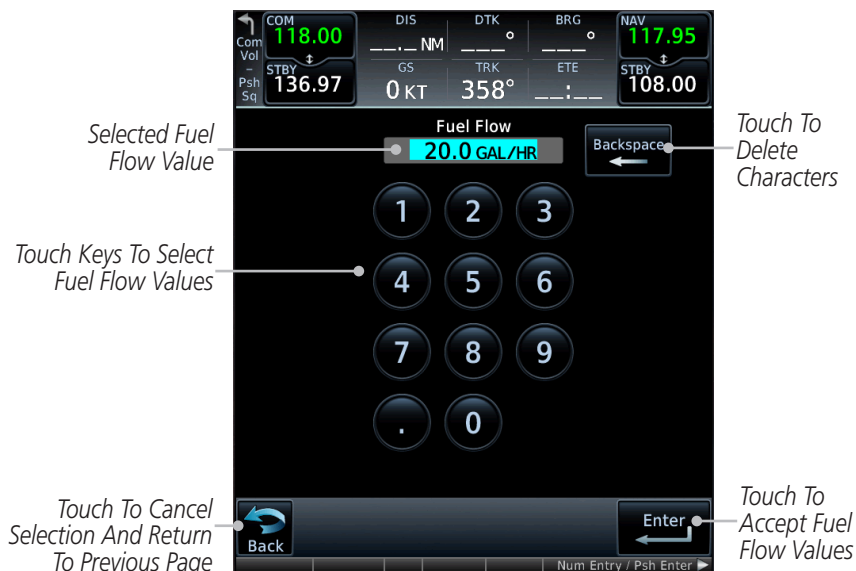


Figure 1-16 Fuel Flow Setup Page

Continue

- Touch the **Continue** key to advance to the Home page.

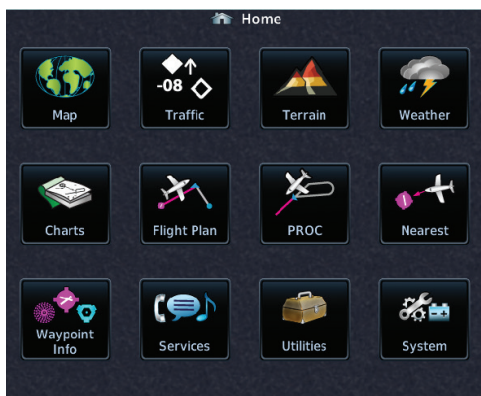


Figure 1-17 Home Page

## 1.5 System Operation

### 1.5.1 Using the Touchscreen Key Controls

Except for the knobs, the **HOME**, and **Direct-To** keys on the bezel, the controls for the GTN 7XX are located on the display and activated by touch.



Figure 1-18 On-Screen Keys and Active Display Areas

### 1.5.2 System Page

GTN 7XX system settings are managed on the System page. The following features are available:

- System Status
- GPS Status
- External LRUs
- Setup
- Alerts Settings
- User Fields
- Units Settings
- Audio
- Backlight
- Connex Setup
- Voice Commands

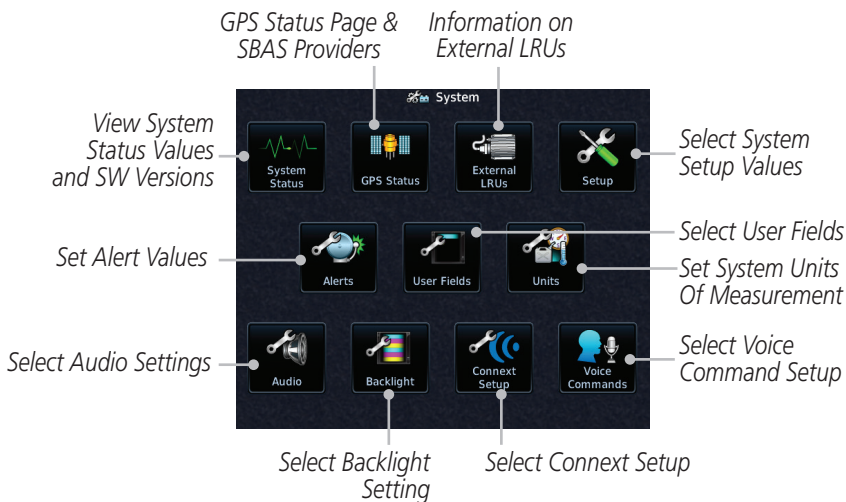
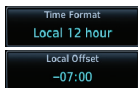


Figure 1-19 System Page

## 1.5.2.1 System Setup Values

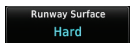
1. From the Home page, touch **System** and then **Setup**.



2. Select the desired Time Format and Local Offset by touching the Time Format (**12 Hour**, **24 Hour**, and/or **UTC**) keys and selecting the appropriate Local Time Offset after touching the **Local Offset** key.



3. Touch the **Com Channel Spacing** key to toggle between 8.33 and 25.0 kHz channel spacing.



4. For Nearest Airport filtering, touch the **Runway Surface** key and select the desired type of surface that will appear in the Nearest Airport list.



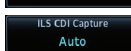
5. Touch the **Minimum Runway Length** key to select the minimum runway length allowed for the Nearest Airport. Selecting 0 feet will show all airports regardless of runway length.



6. Touch the **Crossfill** key to enable or disable crossfill with a second GTN unit.



7. Select the CDI and ILS CDI Capture method with the **Selected CDI** and **ILS CDI Capture** keys.



## 1.5.2.2 Units Settings Values

1. From the Home page, touch **System** and then **Units**.



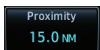
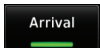
2. Touch the desired item key and select the desired value.
3. Continue to select the desired Units values and then touch the **Back** or **HOME** key to exit.

## 1.5.2.3 Alerts Settings Values

1. From the Home page, touch **System** and then **Alerts**.



2. Touch the Alert type key to toggle its active status. A lighted green bar under the label indicates that it is active.
3. Set arrival alerting. Touch the **Arrival** key. Touch the **Proximity** key and select the desired value with the keypad.



4. Touch the **Airspace Altitude Buffer** key and select the desired value for airspace alerting.
5. Continue to select the desired Alerts values and then touch the **Back** or **HOME** key to exit.

## 1.5.2.4 Audio Values

1. From the Home page, touch **System** and then **Audio**.
2. Touch the **arrow** keys to raise or lower the volume of key click sounds.

## 1.5.2.5 Backlight Values

1. From the Home page, touch **System** and then **Backlight**.
2. Touch the **arrow** keys to increase or decrease the Manual Offset of the backlight brightness.

## 1.5.2.6 Connex Setup

1. From the Home page, touch **System** and then **Connex Setup**.
2. This page is used to setup Connex devices that are connected to the GTN.

## 1.5.2.7 Voice Commands

1. From the Home page, touch **System** and then **Voice Commands**.
2. This page is used to turn voice recognition on or off, and to view voice command history.

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Getting Started

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Map

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## 1.5.3 Dual GTN Installations

Dual GTN units when connected in the aircraft may be set up to communicate and share information by “Crossfilling” or synchronizing information between the two units.

The following Crossfill information is always synchronized between both GTN units:

- User Waypoints
- Flight Plan Catalog
- Alerts (traffic pop-up acknowledgement, missed approach waypoint pop-up acknowledgement, altitude leg pop-up acknowledgement)
- External sensors (transponder status and commands, synchro heading)
- System setup:
  - User-defined NAV frequencies to store favorites
  - Date/Time convention
  - Nearest airport criteria
  - Units (Nav angle, Fuel, and Temperature)
  - User-defined COM frequencies to store favorites
  - CDI Scale setting
  - ILS CDI Capture setting

This data is crossfilled only if crossfill is turned on by the pilot:

- Active navigation (flight plan)



**NOTE:** *In dual GTN installations with crossfill on, the OBS course will only be updated in real time on the GTN that is receiving the new OBS course. The course will be transferred to the other GTN when OBS is exited.*



**NOTE:** *There is an installer option to turn on a system message that will be provided anytime crossfill is turned off to alert the pilot that flight plans are not being crossfilled.*

## 1.6 Direct-To Navigation

Press the **Direct-To** key to quickly navigate from your present position directly to a selected waypoint, flight plan waypoint, or nearest airport.

### 1.6.1 Direct-To a Waypoint



1. Press **Direct-To**.
2. Touch the Waypoint Identifier field and select the characters for the desired waypoint with the **large** and **small right** knobs or the touch keypad.
3. Touch **Activate** or press the **small right** knob. Text near the **small right** knob indicates its current function.



OR



### 1.6.2 Direct-To a Flight Plan Waypoint



1. Press **Direct-To**.
2. Touch the **FPL** tab and then the desired Flight Plan waypoint.
3. Touch **Activate** or press the **small right** knob.



OR



### 1.6.3 Direct-To a Nearest Airport



1. Press **Direct-To**.
2. Touch the **NRST APT** tab and then the desired airport from the Nearest Airport list. Touch the **Up** or **Down** keys as needed to show more of the list.
3. Touch **Activate** or press the **small right** knob.



OR





## 1.7 Selecting Com/Nav Frequencies

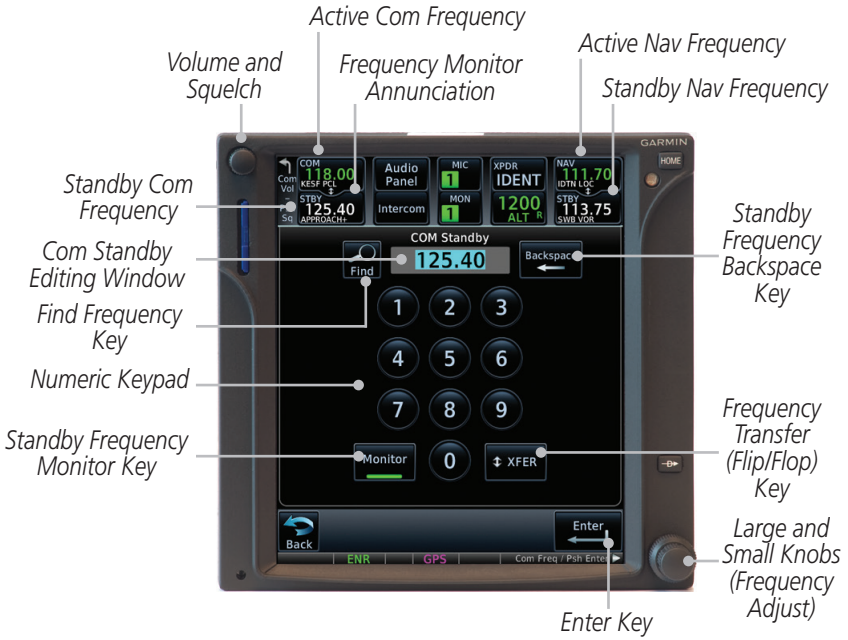


Figure 1-20 Com Radio Frequency Selection Page

### To switch between Com and Nav frequency selection

Tuning control normally remains in the Com window and will return after 30 seconds of inactivity. If you wish to select a Nav frequency, press the **small right** knob momentarily to make the Nav window active for editing. The Standby Nav frequency will be highlighted briefly to indicate that it is active for editing. The standby frequency in blue is active for editing by the **large** and **small right** knobs.

### Method 1: Select a Nav/Com frequency using the small and large right rotary knobs



1. Turn the **large right** knob to select the desired megahertz (MHz) value. For example, the "118" portion of the frequency "118.30."
2. Turn the **small right** knob to select the desired kilohertz (kHz) value. For example, the ".30" portion of the frequency "118.30."
3. Touch the Com or Nav window to flip/flop the Active and Standby frequencies. You can also press and hold the **small right** knob

to transfer the standby frequency to the active window.

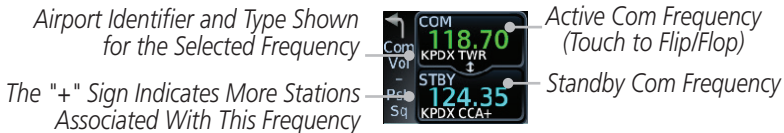
## Method 2: Select a Nav/Com frequency using the numeric keypad

1. Touch the Standby window. A pull down keypad will appear with the current Standby frequency highlighted.
2. Touch the numeric keys to add the desired values and touch **Enter** to accept the displayed value and place it into the Standby window.
3. Touching the **XFER** key will place the selected frequency directly into the Active window.



## To transfer the standby frequency to the active frequency

1. Touch the Active (top) frequency window.



**Figure 1-21 Com Radio Frequency Windows (Touch Active to Flip/Flop)**

2. Each touch of the Active window will flip/flop the Active and Standby frequencies.
3. The identifier and frequency type will be shown for the selected Com and Nav frequencies for the nearest stations that are in the database when the unit is receiving a valid position input.

## Remote Frequency Selection Control

On units configured for remote Com frequency Recall, pressing the remote recall switch will load the next preset Com frequency into the unit's Standby frequency window. The remote recall switch can be pressed multiple times to scroll the entire preset frequency list through the Standby frequency box (the list will "wrap" from the bottom of the list back up to the top, skipping any empty preset positions).

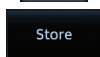
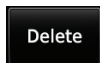
The standby frequency isn't activated until a Com **FLIP/FLOP** switch (either bezel-mounted or remote (COM RMT XFR) is pressed. Remote Frequency Selection only functions on units configured for a remote Com Frequency recall switch.

**NOTE:** Frequencies must be stored in the User Frequency List prior to utilizing the remote channel select switch.



## 1.8 Flight Planning

### 1.8.1 Creating a Flight Plan



1. From the Home page, touch the **Flight Plan** key. The Active Flight Plan page will be displayed.
2. If there is already an Active Flight Plan, touch **Menu** and then the **Delete** key to clear the existing flight plan. If there is not an Active Flight Plan, continue to the next step.
3. Touch **Add Waypoint**. Use the alphanumeric keypad to select the Waypoint Identifier for the first leg in your flight plan and then touch **Enter**.
4. Touch the next Waypoint Identifier field. Use the alphanumeric keypad to select the Waypoint Identifier for the first leg in your flight plan and then touch **Enter**.
5. Continue entering waypoints to complete the flight plan.
6. Touch the **Menu** key and then touch **Store**.
7. The screen will now display the Flight Plan Catalog and show the new flight plan. Flight plans are listed by the Departure and Destination waypoints.

**NOTE:** *The destination waypoint is the last airport in the flight plan.*

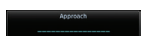
# 1.9 VFR and IFR Procedures

Visual approaches and IFR procedures (i.e., SIDs, STARs, and instrument approaches) are available using the **PROC** (Procedures) key.

## 1.9.1 Select a Visual or Instrument Approach

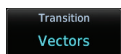


1. Touch the **PROC** key on the Home page.



2. Touch the **Approach** key and then touch the Airport key to select the desired airport if it is not present.

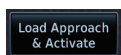
3. Touch the **Approach** key, if necessary. Select the desired approach.



4. Touch the **Transition** key and then touch the key for the desired transition. Visual approaches do not have selectable transitions.



5. Touch the **Load Approach** key to load the approach at the end of the active flight plan. The Active Flight Plan page will be displayed.



6. Or, touch the **Load Approach & Activate** key for the flight plan to go Direct-To the selected transition or provide guidance on the final approach course for vectored or visual approaches.

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- Symbols
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## 1.10 Dead Reckoning

Dead reckoning is a feature that enables the GTN to provide limited navigation using the last known position and speed after a loss of GPS navigation while on an active flight plan.



**CAUTION:** *Navigation using dead reckoning is only an estimate and should not be used as the sole means of navigation. Use other means of navigation, if possible.*

Dead reckoning becomes active after a loss of GPS position while navigating using an active flight plan and the flight phase is either En Route (ENR) or Oceanic (OCN).

“DR” will be overlaid on the ownship icon. The To/From flag is removed from the CDI. The Dead Reckoning annunciator (DR) appears on the lower left side of the map display and will replace ENR or OCN when a GPS position is unavailable and the unit is in Dead Reckoning mode. All external outputs dependent on GPS position are flagged.

Terrain will be noted as not available and new terrain advisory pop-ups will not occur. Traffic and StormScope information will not be shown on the Map page, but will continue to be available on their own dedicated pages. XM weather will still be available on the Map page.

Dead Reckoning mode will continue until GPS position is restored, when GPS navigation is restored Dead Reckoning mode is exited. The DR annunciations will be removed and GPS information will be used to compute navigation related information for the current flight phase.

Dead Reckoning is only allowed in En Route and Oceanic phases of flight. If the unit is in a Terminal or Approach phase of flight when Dead Reckoning takes place, “No GPS Position” will be displayed on the map pages and all navigation data will be dashed. If you are operating in Dead Reckoning mode and a transition to Terminal or Approach phases of flight would occur from the projected Dead Reckoning position, Dead Reckoning mode will be discontinued. “No GPS Position” will be displayed on the map pages and all navigation data will be dashed. For information about GPS faults, refer to 16.2.4.

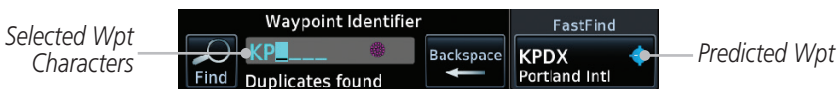
# 1.11 FastFind Predictive Waypoint Entry

FastFind provides the pilot with a shortcut to the nearest waypoint with an identifier that starts with the typed letters. As a result, the GTN can predict the pilot's entry within as little as one key press.

FastFind predictions are shown in the top right-hand corner of the keypad display. Touching the FastFind field will select the predicted waypoint. If the FastFind prediction is not what the pilot is looking for, keep typing until the desired waypoint is displayed.

## 1.11.1 FastFind With Waypoint Info

1. Use the alphanumeric keypad to begin selecting characters for the desired waypoint.

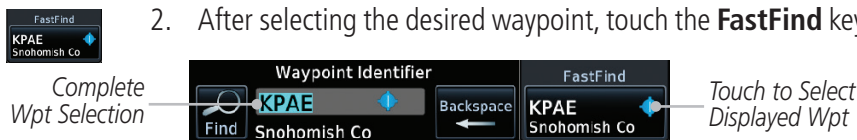


**Figure 1-22** Select Characters for FastFind to Predict a Waypoint - KP Selected



**Figure 1-23** Select Characters for FastFind to Predict a Waypoint - KPA Selected

2. After selecting the desired waypoint, touch the **FastFind** key.



**Figure 1-24** Select Characters for FastFind to Predict a Waypoint - KPAE Selected

## 1.11.2 FastFind With A Flight Plan

When creating a new flight plan or searching for a waypoint, the GTN will search for waypoints closest to the current GPS position. When adding waypoints in the middle of the flight plan, the GTN will search halfway between the previous and next waypoints. When adding waypoints at the end of the flight plan, the GTN will search for waypoints closest to the last waypoint in the flight plan.

1. When the aircraft is located in KSLE, and the last waypoint in the flight plan is "DRK," the GTN will search for waypoints nearest "DRK."
2. Typing **K**, will result in "KPRC" being displayed as the FastFind prediction because it is the nearest waypoint to "DRK" that starts with "K."



Figure 1-25 Using FastFind to Predict a Waypoint in a Flight Plan

Foreword

Getting Started

Audio & Xpdr Ctrl

Com/Nav

FPL

Direct-To

Proc

Charts

Wpt Info

Map

*This page intentionally left blank*

Traffic

Terrain

Weather

Nearest

Services/  
Music

Utilities

System

Messages

Symbols

Appendix



## 2 AUDIO AND TRANSPONDER CONTROLS (OPTIONAL)

The GTN 7XX can perform the control and display for a remotely mounted audio panel (such as the GMA 35) and a transponder (such as one of the GTX family of transponders) functions. See your dealer for more information.

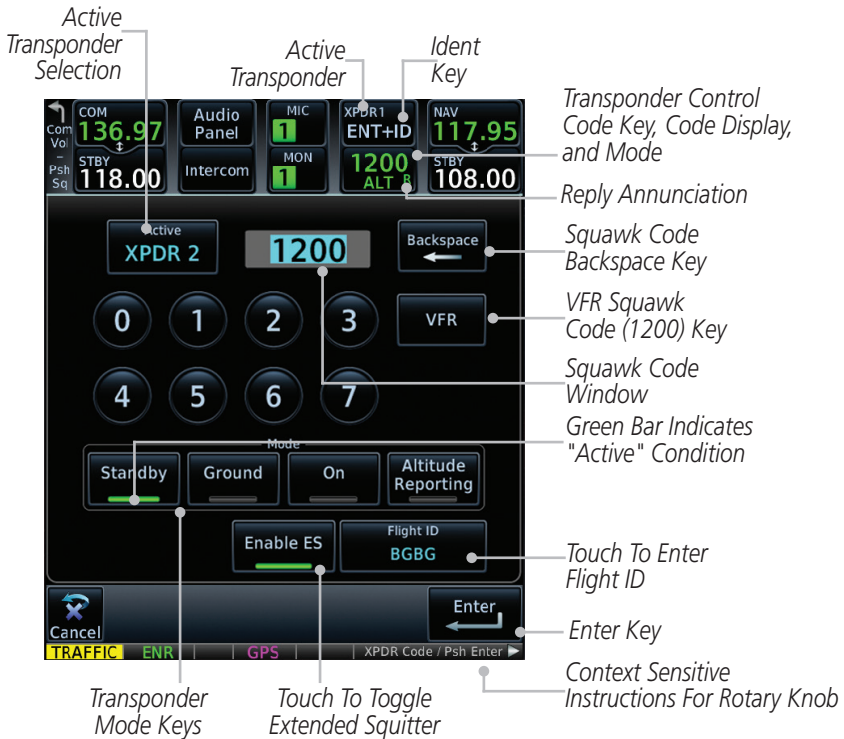
### 2.1 Transponder Operation



**NOTE:** The transponder control panel on the GTN will only contain the Ground key when the GTN is interfaced with a GTX 33/330 with software versions prior to 8.00.



**NOTE:** Starting the GTN with a Flight Stream 510 wireless datacard in the slot may cause the control panel to be temporarily unavailable on the start-up screens during unit power up.



**Figure 2-1 XPDR Control Display**