

The System function allows you to change unit settings, customize operation to your preferences, and check on the operation of your unit. The System pages cover System Status, Database Info and transfer, GPS Status, External LRUs, Setup, Alerts, Units, Audio, Backlight control function, and Connex Setup.



1. From the Home page, touch the **System** key.



Figure 15-1 System Home Page



2. Touch the **Up** and **Down** Arrow keys to view the features available in the System function.



3. Touch the desired key to reach that function. To return to the System page, touch the **Back** key.

Foreword
 Getting Started
 Audio & Xpdr Ctrl
 Com/Nav
 FPL
 Direct-To
 Proc
 Wpt Info
 Map
 Traffic
 Terrain
 Weather
 Nearest
 Services/Music
 Utilities
System
 Messages
 Symbols
 Appendix
 Index



Figure 15-2 System Function Summary

15.1 System Status

The System status page of the System function provides information about the GTN unit and the equipment attached to it. This information is useful if it is necessary to contact Customer Service. The System Status page shows the System ID and serial number for the GTN unit, hardware and software versions, as well as a list of the installed databases.

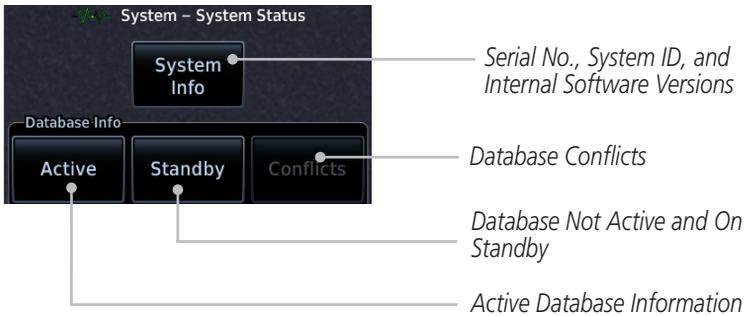


Figure 15-3 System Status Page Description

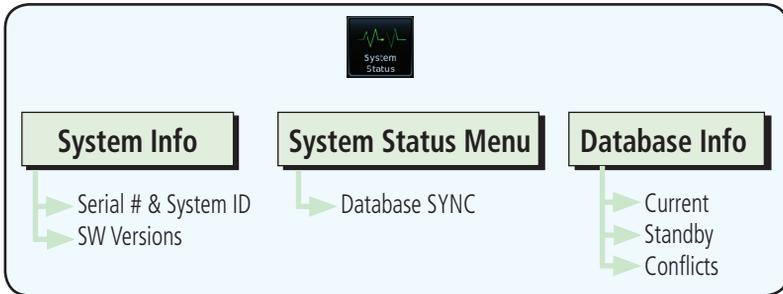


Figure 15-4 System Status Functional Diagram

15.1.1 Serial Number and System ID

The System Info section shows the unit Serial Number and the System ID.



1. While viewing the System Status page, touch **System Info**.



2. Touch the **Back** key to return to the System Status page.

15.1.2 Version Information

The software versions of the GTN unit are displayed. This information is useful when contacting Customer Support.



1. While viewing the System Status page, touch the **System Info** key to view more detailed information about the software versions inside the GTN unit.

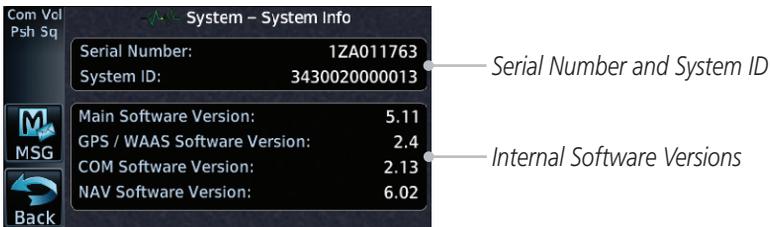


Figure 15-5 System Status Version Information



2. Touch the **Back** key to return to the System Status page.

15.1.3 Database Information

The Database Information section lists the name of the database, its version, and expiration date for the currently used databases, and also contains the Database SYNC function. Standby databases are listed for databases not currently used, but available on the datacard. Database conflicts will be shown in the Conflicts section. For more information on GTN databases and how to update them see section 18.2.

Foreword
Getting Started
Audio & Xpdr Ctrl
Com/Nav
FPL
Direct-To
Proc
Wpt Info
Map
Traffic
Terrain
Weather
Nearest
Services/Music
Utilities
System
Messages
Symbols
Appendix
Index

15.2 GPS Status

15.2.1 GPS Status Page

The GPS Status Page provides a visual reference of GPS receiver functions, including current satellite coverage, GPS receiver status, position accuracy, and displays your present position (in latitude and longitude) and altitude.

The Satellite Status Page is helpful in troubleshooting weak (or missing) signal levels due to poor satellite coverage or installation problems. You may wish to refer to this page occasionally to monitor GPS receiver performance and establish a normal pattern for system operation. Should problems occur at a later date, you may find it helpful to have an established baseline from which to compare.



1. While viewing the System page, touch **GPS Status**.

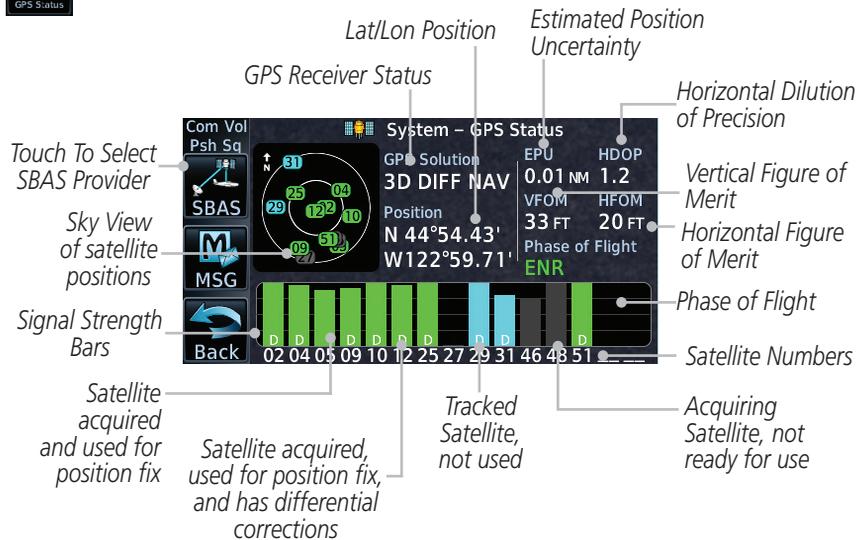


Figure 15-6 GPS Status Page



2. If desired, touch the **SBAS** key to select an SBAS provider. The SBAS list is based on the Aviation database. See the *Satellite-Based Augmentation System* section later in this chapter for details.



3. Touch the **Back** key to return to the System Status page.

As the GPS receiver locks onto satellites, a signal strength bar appears for each satellite in view, with the appropriate satellite number (01-32, SBAS satellites will have higher numbers) underneath each bar. The progress of satellite acquisition is shown in the following stages:

Graph Symbol	Description
No signal strength bars	The receiver is looking for the satellites indicated.
Gray signal strength bars	The receiver has found the satellite(s) and is collecting data.
Yellow signal strength bars	The receiver has collected the necessary data but the satellite is not being used in the position solution as it has been excluded.
Cross-hatch cyan signal strength bars	The receiver has found the satellite(s) but it has been excluded by the FDE program as a faulty satellite.
Solid cyan signal strength bars	The receiver has collected the necessary data, but is not using the satellite in the position solution.
Solid green signal strength bars	The receiver has collected the necessary data and the satellite is being used in the position solution.
D	The "D" character inside the bars indicates differential corrections (e.g., WAAS) are being used for that satellite.

Table 15-1 Signal Strength Bar Graph Description

The Time and other data may not be displayed until the unit has acquired enough satellites for a fix.

The sky view display at the left of the page shows the satellites currently in view as well as their respective positions. The outer circle of the sky view represents the horizon (with north at the top of the circle); the inner circle represents 45° above the horizon and the center point shows the position directly overhead.

Each satellite has a 30-second data transmission that must be collected (hollow signal strength bar) before the satellite may be used for navigation (solid signal strength bar). Once the GPS receiver has determined your position, the GTN unit indicates your position, altitude, track and ground speed. The GPS receiver status field also displays the following messages under the appropriate conditions:

GPS Signal Message	Description
Acquiring	The GPS receiver is acquiring satellites for navigation. In this mode, the receiver uses satellite orbital data (collected continuously from the satellites) and last known position to determine the satellites that should be in view.
3D Nav	The GPS receiver is in 3D navigation mode and computes altitude using satellite data.
3D Diff Nav	The GPS receiver is in 3D navigation mode and differential corrections are being used.
LOI	The "LOI" (Loss Of Integrity) annunciator (bottom left corner of the screen) indicates that satellite coverage is insufficient to pass built-in integrity monitoring tests.

Table 15-2 GPS Signal Messages

The GPS Status Page also indicates the accuracy of the position fix, using Horizontal Figure of Merit (HFOM), Vertical Figure of Merit (VFOM), and Estimated Position Uncertainty (EPU). HFOM and VFOM represent the 95% confidence levels in horizontal and vertical accuracy. The lowest numbers are the best accuracy and the highest numbers are worse. EPU is the horizontal position error estimated by the Fault Detection and Exclusion (FDE) algorithm, in feet or meters.



NOTE: *Operating outside of an SBAS service area with SBAS enabled may cause elevated EPU values to be displayed on the satellite status page. Regardless of the EPU value displayed, the LOI annunciation is the controlling indication for determining the integrity of the GPS navigation solution.*



NOTE: *The FDE Prediction program is used to predict FDE availability. This program must be used prior to all oceanic or remote area flights for all operators using the GTN as a primary means of navigation under FAR parts 91, 121, 125, and 135. The FDE program is part of the GTN trainer, available for download from the GTN product information page on Garmin's website, www.flyGarmin.com.*

If the GTN has not been operated for a period of six months or more, acquiring satellite data to establish almanac and satellite orbit information can take 5 to 10 minutes.

The Time and other data may not be displayed until the unit has acquired enough satellites for a fix.

15.2.2 Satellite-Based Augmentation System (SBAS)

SBAS is a system that supports wide area, or regional, augmentation through the use of additional satellite broadcast messages. WAAS, EGNOS, MSAS, and GAGAN are known SBAS providers.

At the time of printing, SBAS providers support the following areas:

- WAAS provides SBAS service for Alaska, Canada, the 48 contiguous states, and most of Central America.
- EGNOS provides SBAS service for most of Europe and parts of North Africa.
- MSAS provides SBAS service for Japan only.
- GAGAN provides SBAS service for India. Available with GPS software v5.2 and later.

1. While viewing the System page, touch **GPS Status**.
2. If desired, touch the **SBAS** key to select an SBAS provider. The SBAS list is based on the Aviation database.
3. Touch the key for the desired SBAS provider.



Figure 15-7 SBAS Selection Page

4. Touch the **Back** key to return to the System Status page.



Foreword

Getting Started

Audio & Xpdr Ctrl

Com/Nav

FPL

Direct-To

Proc

Wpt Info

Map

Traffic

Terrain

Weather

Nearest

Services/
Music

Utilities

System

Messages

Symbols

Appendix

Index

15.2.3 Circle of Uncertainty

The Circle of Uncertainty depicts an area where the ownship location is guaranteed to be when the aircraft location cannot be accurately determined. The area of the Circle of Uncertainty becomes larger as GPS horizontal accuracy degrades and smaller as it improves. The Circle of Uncertainty is shown only when the aircraft is on the ground. The Circle of Uncertainty area is transparent so that features within it may still be seen.

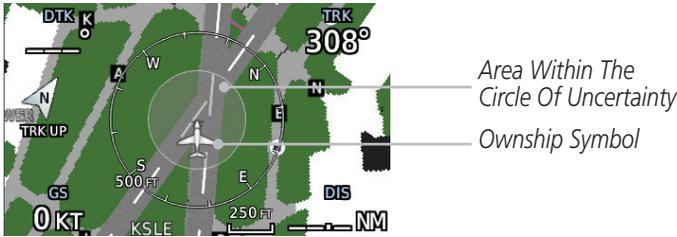


Figure 15-8 Circle of Uncertainty

15.2.4 GPS Faults

The GTN communicates various fault conditions that can affect the accuracy of the GPS. These include loss of integrity, loss of navigation, and a loss of position.

Loss of Integrity

A loss of integrity is when the integrity of the GPS position does not meet the requirements for the current phase of flight. This only occurs before the final approach fix (if an approach is active).

The GTN indicates a loss of integrity by displaying the amber "LOI" annunciation at the bottom of the screen.

Loss of Navigation

A loss of navigation can be caused by any of the following conditions:

- Aircraft is after the final approach fix and GPS integrity does not meet the active approach requirements
- Insufficient number of satellites supporting aircraft position (i.e., more than 5 seconds pass without adequate satellites to compute a position)
- GPS sensor detects an excessive position error or failure that cannot be excluded within the time to alert
- On-board hardware failure

The GTN indicates a loss of navigation by invalidating the active course guidance, and issuing a system message describing the cause.

Loss of Position

If the GTN cannot determine a GPS position solution, the ownship icon disappears and the amber "No GPS Position" annunciation appears across the map pages. For information about managing limited navigation features, refer to section 1.10.

15.3 External LRUs

The External LRU page displays the external equipment connected to the GTN and their connection status.

1. While viewing the System page, touch the **External LRUs** key.

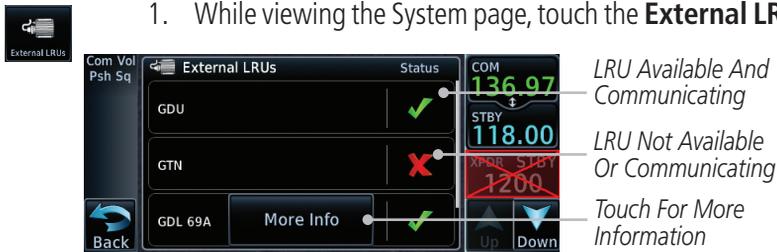


Figure 15-9 External LRU Page

2. When more information is available about the listed units, touch the **More Info** key to view the information.



15.3.1 GDL 69 (and GDL 69A) Status

The GDL 69 Status page displays the serial numbers for the Data Radio for the GDL 69/69A and the Audio Radio for the GDL 69A. Subscription status displays the level of service available for your particular subscription. The Weather Products section lists the products available for your particular subscription.



1. While viewing the External LRUs page, touch **More Info** for the GDL LRU.



Figure 15-10 GDL 69 Status Page



2. Touch the **Menu** key to display the GDL 69 Status Menu.



Figure 15-11 GDL Status Menu



3. Touch the **Lock Activation** key if this is for the initial subscription or a change in the subscription. Touch the **OK** key to continue the operation.

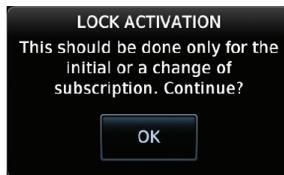


Figure 15-12 Loc Activation



4. Touch the **Back** key to return to the GDL Status page.



5. Touch the **Weather Products** key to display the weather products subscription status.

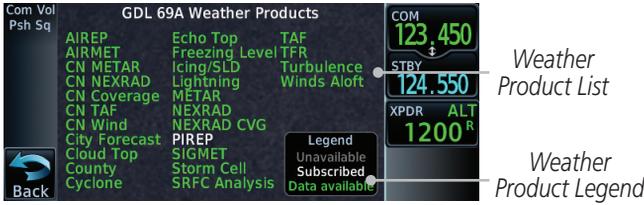


Figure 15-13 GDL 69/69A Status



6. Touch the **Back** key to return to the System page.

15.3.2 GDL 88 or GTX 345 Status

The GDL 88 or GTX 345 Status pages display information about the status of the GDL 88 or GTX 345.

Status	Description
On	Application is on/running. Required ownship input data is available and meets the performance criteria.
Available to Run	Application is configured. Required input data is available and meets the performance criteria. This state represents that the ASA Application is manually or automatically selected off.
Unavailable – Fault	Required Input data is not available due to a failure or the ASA Application process is failed.
Unavailable to Run	Required Input data is available but does not meet the performance criteria or is not available due to Non-Computed Data (NCD) conditions.

Table 15-3 Traffic Application Status

More Info

1. While viewing the External LRUs page, touch **More Info** for the GDL 88 or GTX 345 LRU.



Figure 15-14 GDL 88 Status

FIS-B Weather

2. Touch the **FIS-B Weather** key to view the FIS-B Weather information.

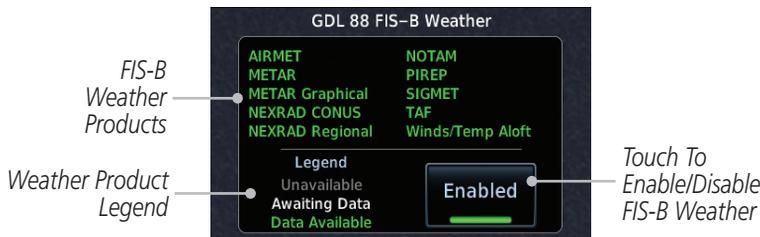


Figure 15-15 GDL 88 FIS-B Weather Information

Enabled

3. Touch the **Enabled** key to toggle whether FIS-B Weather is enabled/disabled for use. Touch the **Back** key to return to the Status page.

Traffic App Status

4. Touch the **Traffic App Status** key to view the Traffic Application information.

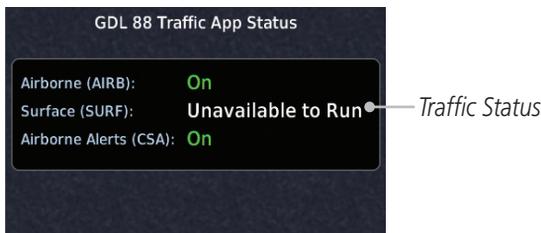


Figure 15-16 GDL 88 Traffic Information

15.3.3 GSR 56 Status

The GSR 56 Status page displays information about the status of the GSR 56.

More Info

1. While viewing the External LRUs page, touch **More Info** for the GSR 56 LRU.



Figure 15-17 GSR 56 Status

Connex Registration

2. Touch the **Connex Registration** key to display the Connex Registration display.



Figure 15-18 Connex Registration Page

15.4 Setup

System Setup allows setting the time convention, Com channel spacing, crossfilling to a second GTN or GNS unit, and Nearest Airport search filtering.

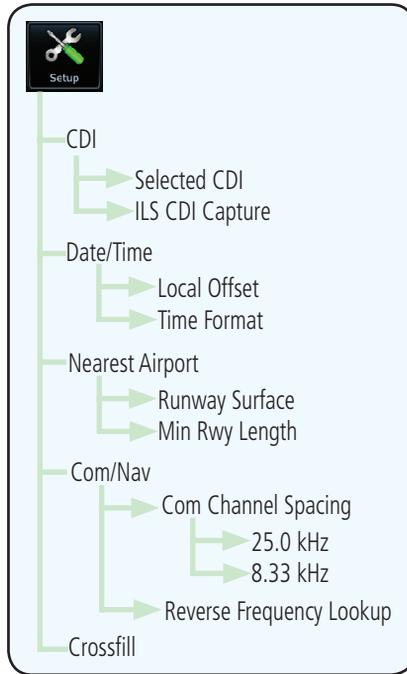


Figure 15-19 System Setup Functions



1. While viewing the System page, touch the **Setup** key.

Touch Key to Set Time Format And Offset

Touch Key to Select CDI And ILS CDI Capture

Touch Key to View Com/Nav Settings



Touch Key to Set Runway Surface Type And Min Runway Length

Touch Key to Enable Crossfill With Dual GTN Units

Figure 15-20 System Setup Page



2. After making the desired selections, touch the **Back** key to return to the Setup page.

15.4.1 CDI Scale Selection

The CDI source and ILS CDI Capture type may be selected manually or automatically. The selected CDI Scale will be reflected in the annunciation bar at the bottom of the display.

CDI Scale Selection allows you to define the scale for the course deviation indicator (both on the GTN unit's on-screen CDI and the external CDI). The scale values represent full scale deflection for the CDI to either side. The default setting is “Auto.” At this setting, the CDI scale is set to 2.0 NM during the “en route” phase of flight. Within 31 NM (terminal area) of your destination airport, the CDI scale linearly ramps down to 1.0 NM over a distance of 1 NM. Likewise, when leaving your departure airport the CDI scale is set to 1.0 NM and gradually ramps up to 2 NM beyond 30 NM (from the departure airport). During GPS approach operations the CDI scale gradually transitions down to an angular CDI scale. At 2.0 NM before the final approach fix (FAF), CDI scaling is tightened from 1.0 NM to the angular full scale deflection (typically the angular full-scale deflection is 2.0°, but will be as defined for the approach).

If a lower CDI scale setting is selected (i.e., 1.0 or 0.3 NM), the higher scale settings are not selected during ANY phase of flight. For example, if 1.0 NM is selected, the GTN unit uses this for en route and terminal phases and ramps down further during an approach. Note that the Horizontal Alarm (HAL) protection limits listed below follow the selected CDI scale, unless corresponding flight phases call for lower HAL. For example, if the 1.0 NM CDI setting is selected, full-scale deflection during approach will still follow the approach CDI scale settings.

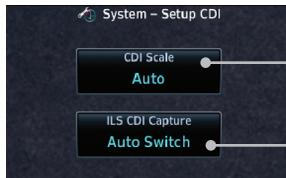
CDI Scale	Horizontal Alarm Limit
Auto (oceanic)	2.0 NM
±2.0 NM or Auto (en route)	2.0 NM
±1.0 NM or Auto (terminal)	1.0 NM
±0.3 NM or Auto (approach)	0.3 NM

Table 15-4 CDI Scale and Horizontal Alarm Limits

An “auto” ILS CDI selection allows the GTN unit to automatically switch the external CDI from the GPS receiver to the VLOC receiver, when intercepting the final approach course. Or, select “manual” to manually switch the external CDI connection, as needed (using the **CDI** key). If the unit is installed with a KAP140/KFC225 autopilot, automatic switching will not take place.



1. While viewing the System Setup page, touch the **CDI** key.



Touch To Choose Auto or Manual CDI Scale Selection

Touch To Select ILS CDI Capture Type

Figure 15-21 CDI Selection



2. Touch the **CDI Scale** key to toggle between automatic selection or to choose the CDI scale manually.



Touch To Select CDI Scale

Figure 15-22 CDI Scale Selection



3. Touch the **ILS CDI Capture** key to select Auto Switch or Manual Selection. This feature enables the unit to automatically switch from GPS to VLOC on an ILS approach. See *Procedures-ILS Approaches* for more detail on ILS approaches.



NOTE: *The ILS CDI Capture key may be disabled in certain GTN installations.*

15.4.2 Date/Time

The Date/Time setting provides selection of time format (local or UTC; 12- or 24-hour). UTC (also called “GMT” or “Zulu”) date and time are calculated directly from the GPS satellites’ signals and cannot be changed.

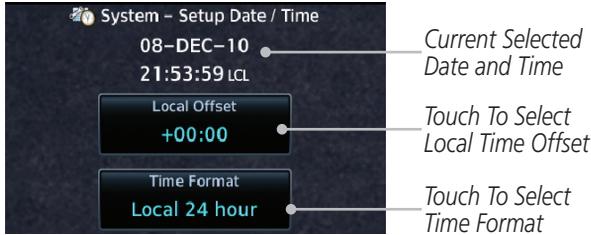


Figure 15-23 System Date and Time Setup

1. While viewing the System Setup page, touch the **Date/Time** key.
2. While viewing the System Setup page, touch **Local Offset** to set the time offset for local time.
3. Use the keypad to select the desired local offset and then touch **Enter**.
4. While viewing the System Setup page, touch the **Time Format** key to select local 12 hour, local 24 hour, or UTC time.



Figure 15-24 Select System Time Format

5. Touch the key for the desired time format.

Foreword

Getting Started

Audio & Xpdr Ctrl

Com/Nav

FPL

Direct-To

Proc

Wpt Info

Map

Traffic

Terrain

Weather

Nearest

Services/
Music

Utilities

System

Messages

Symbols

Appendix

Index

15.4.3 Nearest Airport Criteria

Nearest Airport Criteria defines the surface type and minimum runway length used when determining the 25 nearest airports to display on the Nearest Airport Page. A minimum runway length and/or surface type may be entered to prevent airports with small runways, or runways that do not have an appropriate surface, from being displayed. The default settings are “0 feet (or meters)” for runway length and “any” for runway surface type.



1. While viewing the System Setup page, touch the **Nearest Airport** key.



Figure 15-25 Select Nearest Airport Criteria



2. Touch the **Runway Surface** key to display the options. Touch the desired surface type.



Touch to Select Water Surfaces Only (Not Shown)

Figure 15-26 Nearest Airport Runway Surface Type



3. Touch **Minimum Runway Length** to display the keypad for selecting the minimum runway length. Select the desired minimum runway length with the numeric keypad. A selection of "0" will allow any length.



Figure 15-27 Nearest Airport Minimum Runway Length

4. After selecting the minimum runway length, touch the **Enter** key to save the entered values or touch the **Back** key to return to the System Setup page without saving a value.



15.4.4 Com/Nav Setup

15.4.4.1 Com Channel Spacing

Com transceiver channel spacing may be selected between 8.33 kHz and 25.0 kHz.



1. While viewing the System Setup page, touch the **Com/Nav** key.
2. Touch **COM Channel Spacing** to toggle between 8.33 kHz and 25.0 kHz channel spacing.



15.4.4.2 Reverse Frequency Lookup

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. Station Identifiers with a “+” sign will have more stations associated with this frequency than just the type displayed.



1. While viewing the System Setup page, touch the **Com/Nav** key.



2. Touch the **Reverse Frequency Lookup** key to toggle the function.

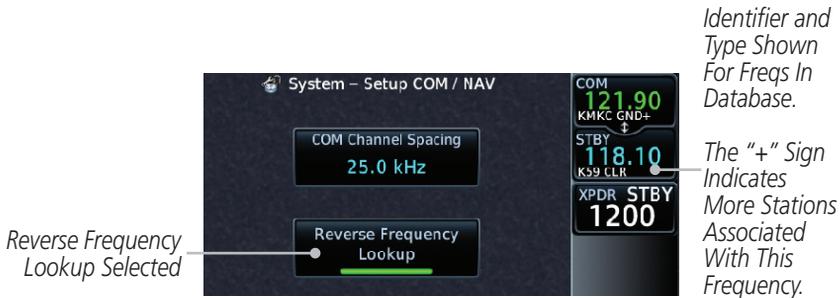


Figure 15-28 Reverse Frequency Lookup Selected

15.4.5 Crossfill

- Foreword
- Getting Started
- Audio & Xpdr Ctrl
- Com/Nav
- FPL
- Direct-To
- Proc
- Wpt Info
- Map
- Traffic
- Terrain
- Weather
- Nearest
- Services/ Music
- Utilities
- System**
- Messages
- Symbols
- Appendix
- Index

Dual units may be interfaced to crossfill information between the two units. This option will not be available unless dual units are configured.

When Crossfill is turned on with one GTN, it is automatically turned on in the other GTN. Some items are always crossfilled regardless of the crossfill setting; others are dependent on the crossfill setting.

The GTN can also be interfaced with the GNS 400W/500W units. The GTN can automatically send the Active Flight Plan and active Direct-To course to the GNS unit. The GTN User Waypoints can be manually sent to the GNS unit. The GNS unit can manually send its User Waypoints to the GTN unit. Waypoint names longer than six characters, or duplicates, sent from the GTN unit to the GNS unit will replace some characters with a "+" sign, while leaving significant characters to aid in identification (such as, USR003 becomes US+003).



NOTE: Upon crossfill being activated, the GTNs may take up to 10 seconds to crossfill the flight plans. The pilot must verify the flight plan in each unit prior to use. The GTN and GNS units must have databases with the same cycle.



NOTE: When GPS navigation is lost in either unit, crossfilling may not be available until GPS is restored in both units. Crossfilling will resume once the flightplan is changed on one of the units or crossfill is re-enabled.

15.4.5.1 GTN-to-GTN Crossfilling

This data is always crossfilled:

- 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: *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. While viewing the System Setup page, touch the **Crossfill** key to toggle between Enabled and Disabled Crossfill.



Touch Key to Enable Crossfill With Dual GTN Units

Figure 15-29 Selecting Crossfill



or



2. When Crossfill is about to be enabled, you will be prompted to note that data will be overwritten in the other unit. Touch **OK** to enable Crossfill or touch **Cancel** to return to the System Setup page without enabling Crossfill.



Touch OK to Enable Crossfill With Dual Units

Figure 15-30 Confirming Crossfill Selection

15.4.5.2 GTN-GNS Crossfilling



NOTE: When the active flight plan on the GTN contains legs or features that are not supported by the GNS, those legs will not be crossfilled and will not be present in the active flight plan on the GNS.

- GTN to GNS – Active flight plans, active direct-to, User waypoints
- GNS to GTN – User waypoints



1. While viewing the System Setup page, touch the **GNS Crossfill Settings** key to reach the GNS Crossfill settings.

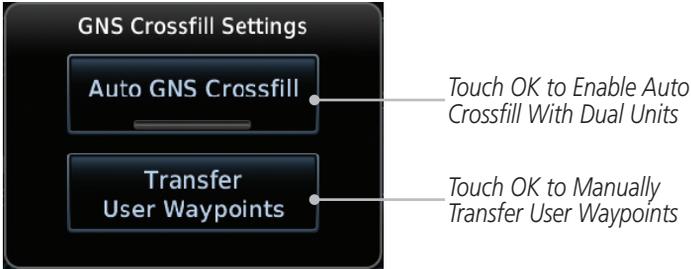


Figure 15-31 GTN-GNS Crossfill Selection



2. Touch **Auto GNS Crossfill** to enable Crossfill and send the Active Flight Plans and the active Direct-To course to the GNS unit.



3. Touch the Transfer User Waypoints key to transfer the User Waypoints from the GTN unit to the connected GNS unit.

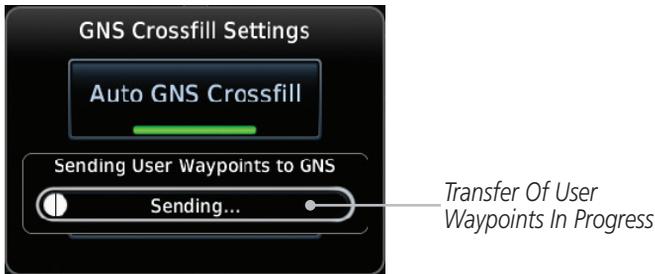


Figure 15-32 GTN-GNS Crossfill

15.5 Alerts Settings

The Alerts Setup page controls two functions: Arrival Alerts and Airspace Alerts. Arrival Alerts, when active, will generate a message when the aircraft is within the selected proximity of the destination. Airspace Alerts generate a message and filtering of the Nearest Airspace list. The altitude component of Airspace Alerts are dependent on both aircraft and airspace altitude and the values set for the Altitude Buffer.

15.5.1 Arrival



1. While viewing the Setup page under the Systems heading, touch the **Alerts** key.

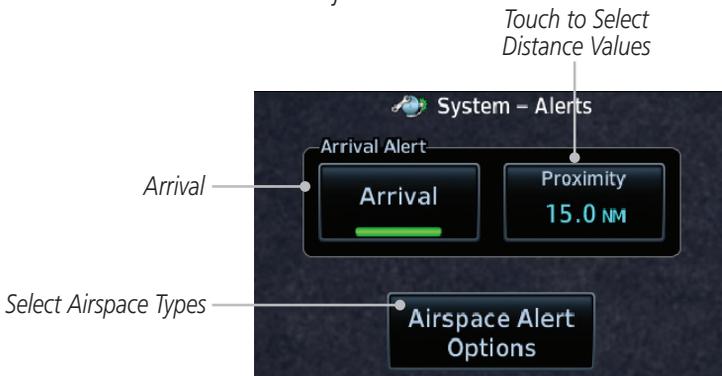
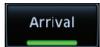


Figure 15-33 Alerts Setup Page



2. Touch the **Arrival** key to toggle activation. A green bar will appear when it is active.

15.5.2 Proximity



Touch the **Proximity** key to set the Destination Proximity distance values. A numeric keypad will appear. Select the desired values and then touch **Enter**.



Figure 15-34 Arrival Alert Proximity Selection

15.5.3 Airspace Alert Options

Airspace Alert Options

1. While viewing the Setup Alerts page, touch **Airspace Alert Options**.



Figure 15-35 Airspace Alert Selections

Altitude Buffer
200 FT

2. Touch the **Airspace Altitude Buffer** key to set the buffer altitude value. A numeric keypad will appear. Select the desired value and then touch **Enter**.

Enter



Touch Enter Or Press Small Knob To Save Values

Figure 15-36 Altitude Buffer Selection

3. Touch the Airspace type keys to toggle activation. A green bar will appear when it is active.

NOTE: The Airspace Alert setting does not alter the depiction of airspace, or change the Smart Airspace setting for the main map page.

NOTE: Airspace alerts for Prohibited airspace cannot be disabled.

15.6 User Fields

The User Fields selection allows you to configure the data field type shown at the right of the display when it is not occupied by the control for a transponder. The data shown in the field may be selected from a list after touching the desired field.



NOTE: Data Field Types that use the term "Destination" refer to the final destination in the flight plan.



NOTE: ETE to Destination is not available when a procedure is loaded and there are waypoints in the Enroute section of the flight plan.



1. While viewing the System page, touch the **User Fields** key, then touch an available field on the side of the display.



Figure 15-37 User Fields Selection

2. Touch the **Data**, **Function**, or **Page** tab to display a list of available selections. A list of information types will be displayed.



Figure 15-38 Map Data Field Type Selections



3. Touch the **Up** or **Down** keys or touch the display and drag your finger to scroll through the list. Touch the desired item to select it or touch the **Back** key to cancel selection.

Foreword
Getting Started
Audio & Xpdr Ctrl
Com/Nav
FPL
Direct-To
Proc
Wpt Info
Map
Traffic
Terrain
Weather
Nearest
Services/
Music
Utilities
System
Messages
Symbols
Appendix
Index

Data Field Type	
ACTV WPT - Active Waypoint	MSA - Minimum Safe Altitude
B/D APT - BRG/DIS from Dest APT ¹	NAV/COM - Active NAV/COM FREQ
BRG - Bearing to Current Waypoint	OAT (static) - Static Air Temperature
DIS - Distance to Current Waypoint	OAT (total) - Total Air Temperature
DIS to Dest - Distance to Destination ²	RAD ALT - Radar Altimeter
DTK - Desired Track	Time - Current Time
ESA - Enroute Safe Altitude	Time to TOD - Time to Top of Descent
ETA - Estimated Time of Arrival	TKE - Track Angle Error
ETA at Dest - ETA at Destination	TRK - Track
ETE - Estimated Time Enroute	Trip Timer - Timer Display
ETE to Dest - ETE to Destination	VOR/LOC - Tuned VOR/LOC Info
Fuel Flow - Total Fuel Flow	VSR - Vertical Speed Required
GS - GPS Ground Speed	Wind - Wind Speed and Direction
GSL - GPS Altitude	XTK - Cross Track Error
Generic Timer - Timer Display	OFF - Do Not Display Data Field

Table 15-5 Data Field Types of Information

Note 1: B/D APT is the straight line distance.

Note 2: Dist to DEST is the distance along the flight plan.

Function Field Type	
CDI - Course Deviation Indicator	OBS/Suspend/Unsuspend Button
Flap Override - Flap Override ¹	On Scene - "On Scene" Mode Toggle
GPWS Inhibit - GPWS Inhibit ¹	TAWS Inhibit - TAWS Inhibit
G/S Inhibit - G/S Inhibit ¹	Gen Timer - Generic Timer Control
HTAWS RP Mode - HTAWS RP Mode ²	OFF - Do Not Display Data Field

Table 15-6 Function Field Types of Information

Note 1: With TAWS-A enabled

Note 2: With HTAWS enabled

Page Field Type	
Blackout Mode	Utilities - Utilities Page
DFLT NAV - Default Navigation	Checklist - Checklist Page
Flight Plan - Flight Plan Page	Fuel PLAN - Fuel Planning Page
Map - Map Page	SCHEM MSG - Scheduled Messages
Nearest - Nearest Page	Trip PLAN - Trip Planning Page
NEAR APT - Nearest Airport Page	VCALC - VCALC Page
PROC - Procedures Page	User FREQ - User Frequencies
Approach - Approach Page	WPT INFO - Waypoint Information
Arrival - Arrival Page	Weather - Weather Page
Departure - Departure Page	CNXT WX - Connex WX Page
Backlight - Backlight Page	FIS-B WX - FIS-B Weather Page
Services - Services Page	Stormscope - Stormscope Page
Traffic - Traffic Page	SiriusXM WX - Sirius XM WX Page
Terrain - Terrain Page	OFF - Do Not Display Page Field

Table 15-7 Page Field Types of Information

Foreword

Getting Started

Audio & Xpdr Ctrl

Com/Nav

FPL

Direct-To

Proc

Wpt Info

Map

Traffic

Terrain

Weather

Nearest

Services/
Music

Utilities

System

Messages

Symbols

Appendix

Index

15.7 Units Settings

The Units Setup page allows you to select the conventions for the various units that are displayed.

Units Type	Units Values
Altitude/Vertical Speed	Feet(FT/FPM), Meters (M/MPS)
Distance/Speed	Nautical Miles (NM/KT), Kilometers (KM/KPH), Statue Miles (SM/MPH)
Fuel ¹	Gallons (GAL), Imperial Gallons (IG), Kilograms (KG), Liters (LT), or Pounds (LB)
Nav Angle ¹	Magnetic (°), True (°T), User (°u)
Magnetic Variation	Enter numeric value, E or W
Position Format	LAT/LON, MGRS, UTM
Pressure	Inches of Mercury (IN), Hectopascals (HPA), Millibars (MB)
Temperature ¹	Celsius (°C) or Fahrenheit (°F)

Table 15-8 System Units Setup

Note 1: Only these unit types will be crossfilled in dual GTN installations.

15.7.1 Setup Units

Use these settings to set the units for values displayed in the unit operation.

1. While viewing the System page, touch the **Units** key.



*Touch Key
To Set Units*

Figure 15-39 System Units Page

2. Touch the key for the desired units. A window with a list of unit values will appear. Touch the desired value on the list.



Figure 15-40 System Units Selection Windows



- After making the desired selections, touch the **Back** key to return to the Setup page.

15.7.2 Setting a User-Configured (Manual) Nav Angle

There are three variation (heading) options: Magnetic, True, and User. If “Magnetic” is selected, all track, course and heading information is corrected to the magnetic variation computed by the GPS receiver. The “True” setting references all information to true north. The “User” selection allows the pilot to enter values between 0° and 179° E or W. When configured by the installer, there may also be a fourth option: External. If “External” is selected, the GTN Nav Angle will be synchronized with the on-side MFD.



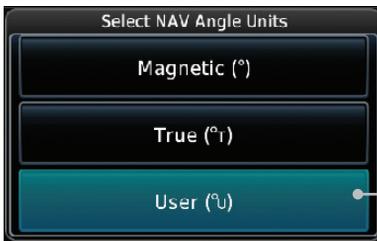
NOTE: When changing the Nav angle, the DTK on the Flight Plan page for an approach does not change until that approach is reloaded.



- While viewing the System page, touch the **Units** key.



- Touch the **Nav Angle** key and then the **User** key.

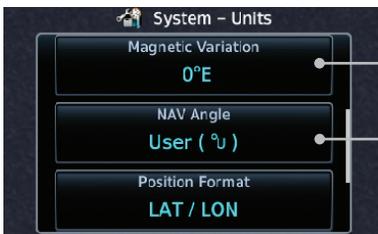


Touch to select User (manual) mag var

Figure 15-41 Nav Angle Selections



- After User is selected, touch the **Magnetic Variation** key to set the value.



Touch To Set Manual Mag Var

User Nav Angle Selected

Figure 15-42 Magnetic Variation is Available for Editing

Foreword
Getting Started
Audio & Xpdr Ctrl
Com/Nav
FPL
Direct-To
Proc
Wpt Info
Map
Traffic
Terrain
Weather
Nearest
Services/Music
Utilities
System
Messages
Symbols
Appendix
Index



4. Touch the keys on the numeric keypad to set the Magnetic Variation and then touch **Enter**.

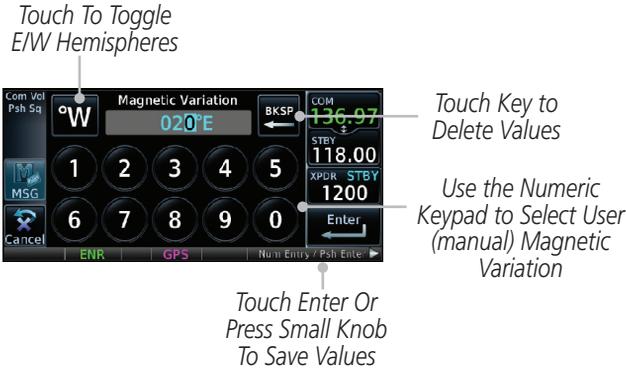


Figure 15-43 Numeric Keypad for Setting Manual Magnetic Variation

5. The User Nav Angle value will be used for all angular values. Remember to change the value when traveling to an area requiring another value.

15.7.3 Position Format Selection

There are three Position Formats available: Lat/Lon, the Military Grid Reference System (MGRS), and the Universal Transverse Mercator (UTM) grid system. The format selected will be shown in all locations where position information is shown.



NOTE: The Position Format Selection function is available in SW v4.10, and later.

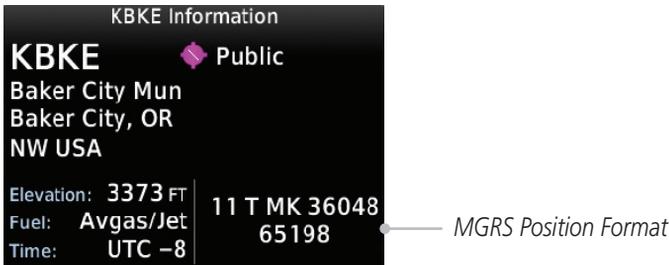


Figure 15-44 MGRS Position Format Shown On Waypoint Info Page

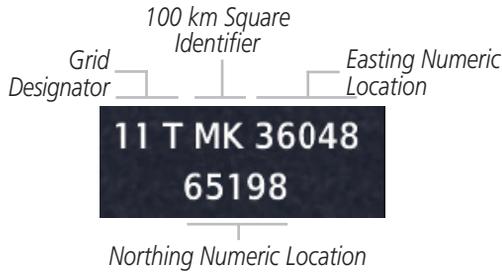


Figure 15-45 MGRS Position Format Detail

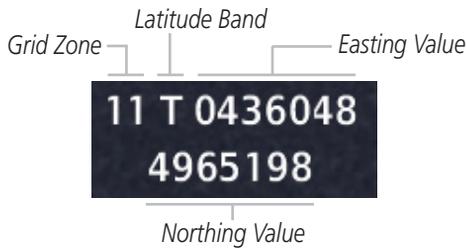


Figure 15-46 UTM Position Format Detail



1. While viewing the System page, touch **Units** key.
2. Touch the **Position Format** key.

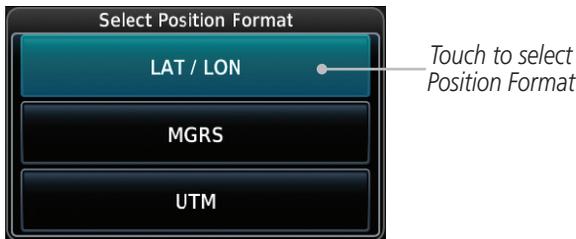


Figure 15-47 Position Format Selection

3. Touch the desired Position format.

15.8 Audio

The Audio Settings allows the adjustment of the volume the click sound when controls are touched.



1. While viewing the System page, touch the **Audio** key.



Figure 15-48 Audio Setup Selection

2. Touch the Arrow keys to adjust the Key Click Volume.
3. Touch the **Male** or **Female** key to select the audio voice type.



4. When HTAWS is installed, a Voice Call Outs option may be available. Touch the **Voice Callouts** key to select the Max Voice Call Out value.



NOTE: VCOs are available down to 100 feet above terrain when HTAWS is installed and use GSL above terrain to generate callouts (no radar altimeter required). If a radar altimeter is interfaced to the GTN, alerts are available down to 50 feet and the height above terrain from the radar altimeter is used to generate the callouts.

5. Touch the **MAX Voice Callout** key to select the value.

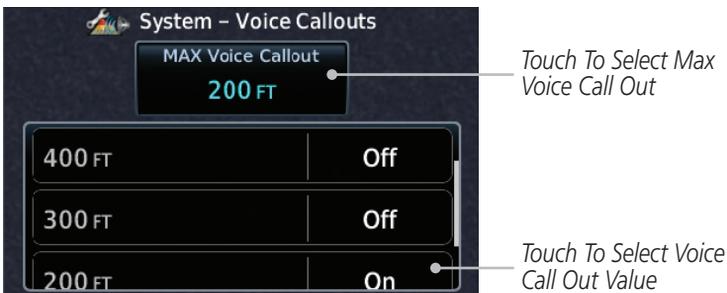


Figure 15-49 Select Voice Call Out Value

6. Touch **Back** when complete.



15.9 Backlight Settings

The backlighting of the display and bezel keys can be adjusted automatically or manually. The default setting (automatic backlighting adjustment) uses photocell technology to automatically adjust for ambient lighting conditions. Photocell calibration curves are pre-configured to optimize display appearance through a broad range of cockpit lighting conditions. A manual offset creates a deviation from the normal curve. Manual adjustments may be made from +100% to -10%. The negative adjustment is limited to prevent the backlight from being accidentally decreasing the backlight to the point where the display of information could not be seen.

The backlight offset function is not available when a dimmer input is active. The GTN is capable of accepting lighting inputs from the built-in photocell, aircraft dimmer bus, or both. If the lighting is not satisfactory, contact the installer to adjust the curves.

Manual backlighting adjustment can be accomplished using the existing instrument panel dimmer bus or the following procedures.



1. While viewing the System page, touch the **Backlight** key.

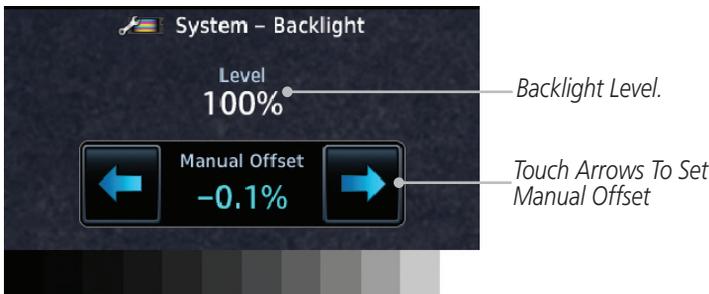


Figure 15-50 Backlight Level Setting



2. Touch the **Manual Offset Arrow** keys to set the Manual Offset level.



3. After making the desired selections, touch the **Back** key to return to the Setup page.

15.10 Connex Setup - GSR 56

This page provides information about the GSR 56 and the Connex Registration page. See section 15.3.3 for more details.



1. While viewing the System page, touch **Connex Setup** to access the GSR 56 LRU Status page.



2. Touch **Connex Registration** to set up the Connex account. Follow the information provided in section 15.3.3.

15.11 Connex Setup - Flight Stream 210 and 510



NOTE: Refer to the *Flight Stream* product page on the Garmin website for portable device compatibility.

The GTN interfaces with the Flight Stream 210 Bluetooth transceiver and Flight Stream 510 wireless datacard. Using a Flight Stream and the GTN, flight plans are sent and received over Bluetooth. In addition, GPS position is provided from the GTN and attitude is forwarded from a connected GDU. The GTN can also configure the Flight Stream's Bluetooth.

The Flight Stream 510 also includes a Wi-Fi transceiver for updating databases. Refer to section 18.2 for more information on updating databases with a Flight Stream 510. The GTN can configure the Flight Stream 510's Wi-Fi.

1. While viewing the System page, touch **Connex Setup** and then the **Flight Stream 210** or **Flight Stream 510** key.



Figure 15-51 Connex Setup for Flight Stream 510



NOTE: Turning Flight Plan imports off will remove the ability of the GTN to receive flight plans from the Flight Stream. This could be used if there are repeated erroneous attempts by a portable device application to send flight plans to the GTN.

Bluetooth Setup

2. Touch the **Bluetooth Setup** key to manage the Bluetooth connection.



Figure 15-52 Bluetooth Setup for Flight Stream

3. Touch the **Wi-Fi Setup** key to manage the Wi-Fi connection.



Figure 15-53 Flight Stream 510 - Wi-Fi Setup

4. Touch the **Features** key to manage Flight Stream Features.



Figure 15-54 Flight Stream 510 - Features Setup

15.11.1 Operation

Data output from the GTN and Flight Stream occurs automatically and requires no pilot action (such as, flight plan, GPS position, and attitude). Additionally, ADS-B traffic and weather can be output from the Flight Stream when connected to a GDL 88 or GTX 345 and XM WX and SiriusXM satellite radio information can output when connected a GDL 69. From the Connex Setup page, the pilot can enable/disable flight plan importing, change the Flight Stream Bluetooth name, and manage paired devices. The Flight Stream 210 and 510 also support sending and receiving GSR 56 SMS messages and controlling the GSR 56 Iridium phone when used with a compatible portable application.

From the Connex Setup page, the pilot can enable/disable Flight Stream features (flight plan importing, phone/SMS, and database transfers), setup Flight Stream Bluetooth and Wi-Fi, and manage paired Bluetooth devices.

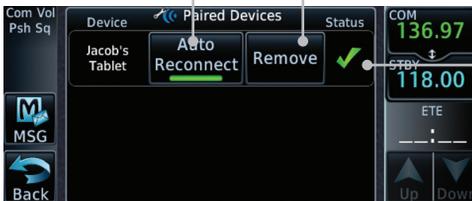
On the GTN's Paired Devices page, the device status indicates if the portable device is connected and communicating with the Flight Stream. The "Auto-Reconnect" setting determines if the Flight Stream will automatically connect to up to four devices when in range. When this setting is disabled, the pilot must initiate the connection from the device. For devices that always reconnect automatically, this setting will not be shown. Removing a device from this page by pressing "Remove" will require the device to be paired again before transferring data.



NOTE: *If the pairing is removed from either device (portable device or GTN) it must be removed on the other device before a new pairing to that same device is established again. Essentially, pairing must be removed on both devices before repairing.*

Touch To Automatically
Connect To The Device
When In Range

Touch To Remove
The Device



Device Is
Connected And
Communicating

Figure 15-55 Managing Paired Devices

15.11.2 Pairing a Device

New devices can only be paired with the Flight Stream when it is in “Pairing Mode.” The Flight Stream will be in pairing mode when the GTN is navigated to the Connex Setup page and/or the Manage Paired Devices page. The pairing must be initiated by the portable device. Pop-ups displayed on the portable device and GTN will be displayed to confirm the pairing.



Figure 15-56 Confirm Pairing With A New Device

Selecting “Manage Paired Devices” opens a page that lists all of devices paired to the Flight Stream.

15.12 Connex Setup - Other Bluetooth Devices

The GTN can also configure the Bluetooth transceiver in other units, such as the GTX 345.



Figure 15-57 Connex Setup for GTX 345

From the Connex Setup page, the pilot can enable/disable Bluetooth, change the Bluetooth name, and manage paired devices. On the Paired Devices page, the device status indicates if the portable device is paired and connected. To connect a different device when the maximum number are already connected, the existing connection must be ended by removing the portable device pairing or by disconnecting or disabling Bluetooth on the portable device. Removing a device from this page by pressing “Remove” will require the device to be paired again before reconnecting.



NOTE: *If the pairing is removed from either device (portable device or installed avionics) it must be removed on the other device before a new pairing to that same device is established again. Essentially, the pairing must be removed on both devices before re-pairing.*

New devices can only be paired while the unit is in “Pairing Mode.” Pairing mode is active while on the Connex Setup page or the Manage Paired Devices page. The pairing must be initiated by the portable device. A pop-up will be displayed on the portable device to confirm the pairing.

15.13 Voice Command



NOTE: This feature is available in software v6.20, or later.

The Voice Command page allows controlling the voice command function and viewing the voice command status and recent commands. Voice Commands are only available when connected to a compatible Garmin audio panel and when enabled by the installer.



Figure 15-58 Voice Command Setup



1. While viewing the System page, touch the **Voice Commands** key.
2. Touch the **Voice Command** key to toggle activation. A green bar will appear when voice commands are active.
3. Touch the **Command History** key to open a list of recently spoken commands.



Figure 15-59 Voice Command History

Foreword

Getting
Started

Audio &
Xpdr Ctrl

Com/Nav

FPL

Direct-To

Proc

Wpt Info

Map

Traffic

This page intentionally left blank

Terrain

Weather

Nearest

Services/
Music

Utilities

System

Messages

Symbols

Appendix

Index