GTN Xi Series

Software v20.20

Upgrade Supplement

This supplement contains revised pages from *GTN Xi Series Pilot's Guide*, P/N 190-02327-03, Rev. D. These pages contain new information regarding the features of software v20.20.

Black bars adjacent to revised information correspond to changes described in the revision summary table.

Features and screen images are dependent upon the installed software version and its configuration. For more information regarding feature availability, refer to the pilot's guide.

An electronic version of the pilot's guide is available for viewing on your computer or portable device. Go to garmin.com/manuals.

COPYRIGHT & TRADEMARKS

INFORMATION & SUPPORT

For information regarding the Aviation Limited Warranty, refer to Garmin's website.

For aviation product support, visit flyGarmin.com.

Overview

GTN Xi Series Main software version 20.20 includes the following significant changes:

Smart Glide

In the event of an engine failure, the pilot needs to perform several essential tasks as soon as possible. The **Smart Glide** feature assists the pilot with emergency procedures and provides guidance to navigate to an airport and, with a compatible autopilot, fly the aircraft en route.

Once the pilot activates Smart Glide by pressing a dedicated panel-mounted switch or on the GTN Xi navigator or compatible flight display, the following actions occur:

- The system will consider the aircraft's estimated glide range (including terrain and obstacles) and recommend a suitable destination airport for landing as well as provide a list of alternative airports. It will also alert if no airport is estimated to be within glide range.
- The moving map will declutter and replace the existing flight plan with a direct course to the center of an airport reachable without power while avoiding any terrain or obstacles on the selected flight path.
- GTN Xi will display the configured best glide speed.
- The CDI will switch to GPS mode, engage the Garmin autopilot in IAS mode at best glide speed, and activate the flight director command bars on the compatible flight display. With compatible third-party autopilots, the pilot can activate the appropriate autopilot modes to receive lateral GPS guidance.
- The selected airport's CTAF or tower frequency will automatically load to the primary Comm standby position. If no airports are estimated to be within glide range, Emergency Frequency 121.5MHz will be loaded into the primary Comm standby position.
- GTN Xi will provide a Squawk 7700 shortcut key. Selecting it will tune the compatible transponder to alert air traffic control of an emergency.
- Aural alerts will announce the distance and bearing to the airport, and when to prepare for manual maneuvering and landing.
- The Emergency page will display active route and longest runway details, the configured best glide speed for the aircraft, and longest runway winds (if available). The pilot determines where to land after reaching the airport environment.

Smart Glide is compatible with the following Garmin LRUs:

- G500 TXi, G600 TXi, G700 TXi (v3.30)
- GI 275 (v2.40)/ GFC 500
- GFC 600 (v2.80)

Option to bypass Instrument Self-test page

During initialization, the Instrument Self-test page would previously appear. GTN Xi can now be configured to bypass the Instrument Self-test page. This feature is for installations that do not have instruments requiring a self-test.

Remote Database Confirmation

A new feature on the start-up page of the primary GTN Xi will display current database information for compatible configured LRUs in the cockpit. In addition, any out-of-date databases will appear as such on GTN Xi. This feature reduces pilot workload for installations with multiple GTN Xi and/or G500(H)/G600/G700 TXi (v.3.30) units.

New label for "ADS-B Out" key

The Transponder menu page would previously show an "Enable ES" key used to command the transponder to send ADS-B out data. The new “ADS-B Out” label is more suitable for the key's function.

Change List

GTN Xi Series Pilot's Guide, P/N 190-02327-03, Rev. D contains the following significant changes:

REV C PAGE	REV D PAGE	DESCRIPTION
Section 1 - System at a Glance		
1-4	1-4	Added Smart Glide to list of common features.
		Applied note 2 to Smart Glide list item.
1-7	1-7	Added "For Mac Users" inset for readers formatting the SD card or Wireless Transceiver using macOS.
1-10	1-10	Added Emergency page icon to graphical list of Home page icons.
Section 2 - Get Started		
2-2	2-2	Updated GTN 750Xi series start-up page depiction and accompanying description.
		Added "Fuel Setup Access" segment.
	2-3	Added "Remote Database Confirmation" subsection.
2-3	2-4	Updated GTN 750Xi series start-up page depiction and accompanying description.
	2-6	Added feature limitation regarding self-test page availability.
		Revised Instrument Panel Self-Test page description.
2-6	2-9	Added "Database Conflicts" subsection.
2-10	2-13	Added pilot's tip for how to allow remote database confirmation from the primary GTN Xi series navigator (dual GTN Xi and GTN Xi/GDU TXi installations only).
2-17	2-20	Added pilot's tip for how to prevent crossfill errors after performing database synchronization (dual GTN Xi installations only).
2-37	2-40	Revised information in "Load Frequency Options" segment to specify COM and NAV radios.

REV C PAGE	REV D PAGE	DESCRIPTION
2-44	2-47	Changed subsection title to "Search Tabs."
2-51	2-54	Added note regarding pilot squelch setting requirements for configuring discretes on GMA 35.
		Revised Auto Squelch key description to include guidance for making manual adjustments.
2-52	2-55	Made minor edits to note regarding use of the GSR 56 Iridium phone system.
2-70	2-72	Added "Where to find it" screen navigation diagram.
2-94	2-97	Replaced all instances of "GTN" with "GTN Xi."
Section 3 - Navigation		
3-13	3-13	Added AFM as a possible information resource.
		Revised Glide Range Ring description and changed data update cycle to approximately every 5 seconds.
3-42	3-42	Added AGL to list of Data tab user field options.
3-49	3-49	Applied note 1 to Chart Information setup option.
3-122	3-122	Added information about phase of flight caution alerts.
3-135	3-135	Added "VOR+V Approaches" subsection.
3-140	3-140	Made minor edit to pilot's tip regarding the "LP+V" annunciation.
Section 5 - Hazard Awareness		
5-50	5-50	Revised Stormscope feature limitation to specify mutual exclusivity with datalink "lightning" weather products.
5-70	5-70	Made minor edits to "Traffic Awareness" section introduction.
5-102	5-102	Added second bullet to description of TAWS Inhibit setup selection.
5-119	5-119	Added figure caption and made minor edits to information in "TAWS-A Inhibit Annunciations" segment.

REV C PAGE	REV D PAGE	DESCRIPTION
5-136	5-136	Made minor edits to "Power Up" segment information.
Section 6 - Abnormal Operations		
6-2	6-2	Added “Emergency Modes at a Glance” subsection.
	6-4	Added “Smart Glide” subsection.
	6-28	Made minor edit to “Emergency Descent” section introduction.
Section 8 - Messages		
8-8	8-7	Revised condition description for "DATALINK GSR 56 data services inoperative; registration required" advisory to exclude Phone from list of available GSR 56 data services.
		Made minor edits to condition description for "DATALINK GSR 56 is inoperative or connection to GTN is lost" advisory.
8-15	8-15	Added “Smart Glide Advisories” subsection.

Apps & Features

COMMON FEATURES
Airways
Arrivals
Approaches
CDI
Checklists
Database Concierge Access[1]
Datalink Weather[2]
Departures
Flight Plan
Graphical Flight Planning
Iridium Phone/SMS[2]
Moving Map
Waypoints (includes user-generated and nearest waypoint info)
Remote Transponder Control[2]
SafeTaxi
SiriusXM Music[2]
Smart Glide[2]
Stormscope[2]
TAWS/HTAWS[2]
Telligence Voice Command[2]
Traffic[2]
VNAV Descent[2]

While features vary depending on model and unit configuration, all models share many of the same features.

[1] Requires Wi-Fi connection via Flight Stream 510.
[2] Optional. Function availability dependent upon aircraft interfaces or enablement.

SD Card Slot

NOTE

Do not remove or insert an SD card while in flight. Always verify the system is powered off before inserting or removing an SD card.

FEATURE LIMITATIONS

- *SD card in the FAT32 format, with memory capacity between 8 GB and 32 GB*

The navigator requires an SD card for the following tasks.

- Exporting data logs
- Capturing screen images
- Upgrading software
- Enabling Flight Stream connectivity
- Updating databases

INSERT AN SD CARD

When inserting an SD card:

1. Verify unit power is off and the slot is empty.
2. Hold card such that label faces left edge of display screen.
3. Ensure back edge of card is flush with display bezel after insertion.

EJECT AN SD CARD

1. Power off the unit.
2. Release the spring latch by pressing lightly on exposed edge of card.

For Mac Users

Do not use macOS to format an SD card or the Flight Stream 510 wireless transceiver if you plan to use either as a media storage device for updating databases.

In the event there is a file corruption problem with the SD card (including the wireless transceiver when used as a database storage device), it may be necessary to reformat the card. This can cause an issue when formatting the SD card using macOS, where the newly formatted card will not be recognized by the avionics system. When using a Macintosh computer to format the SD card, or wireless transceiver, Garmin recommends using the SD Memory Card Formatter application available as a download from SDcard.org. When running the application, use the Quick Format option.

FUNCTION KEYS

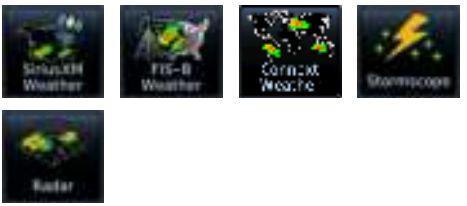
Toggle keys turn a specific function on or off. The current state of the function is indicated below the key label.

APP ICONS

Home Page Icons [1]

Tapping one of these icons opens the corresponding application. Some apps provide additional icons for accessing functions on subpages (e.g., System, Utilities).

Optional Weather Menu Icons



Additional icons are available when certain optional features are installed and the associated functions are enabled (e.g., Music, Phone, SXM Weather).

[1] Actual icons dependent upon model type and configuration.

Power Up

The unit receives power directly from the aircraft's electrical system. Upon power-up, the bezel key backlight momentarily illuminates. System failure annunciations typically disappear within the first 30 seconds after power-up.

The start-up page presents the unit software versions and the name and status of all installed databases.

From here you may:

- *View available databases:* Tap **Databases**.
- *Advance to the next page:* Tap **Continue**.

For more about the Database Updates page, read *Manual Updates* in the *Databases* section.

WI-FI SETUP ACCESS

If a Flight Stream 510 wireless datacard is present, the **WiFi Info** key appears in the control bar. Tapping this key opens a setup page. Read *Wi-Fi Setup* for instructions.

FUEL SETUP ACCESS

Fuel settings may be accessible from the start-up page depending on configuration.

If databases require attention (e.g., an expired or mismatched database exists), the **Fuel Setup** key appears in the control bar. Tapping this key opens a menu of fuel setup options. Read *Preset Fuel Quantities* for instructions.

Remote Database Confirmation

FEATURE REQUIREMENTS

- *GTN Xi software v20.20 or later*
- *Second GTN Xi series navigator and/or GDU TXi*[1]
- *SD cards containing databases must be removed from the second GTN Xi series navigator and/or GDU TXi unit(s)*

FEATURE LIMITATIONS

- *Available for dual GTN Xi and GTN Xi/GDU TXi installations only*

Start-up Page, Primary GTN Xi

A check mark means that no databases require attention.

Confirm database information for all configured GTN Xi and/or GDU TXi units from the start-up page of the primary GTN Xi.

A message informs when databases are up to date. Note the date that the next database is set to expire.

Access keys allow you to view database information for all configured GTN Xi and GDU TXi units in the system.

- *View the available database updates for each unit:* Tap **Database Updates**.
- *View a list of databases for each configured unit:* Tap **View All Databases**.
- *Advance to the next page:* Tap **Continue**.

Upon power up, database information for each configured GTN Xi and GDU TXi in the system is sent to the primary GTN Xi for pilot acknowledgment. All other configured LRUs automatically skip the database start-up page once it is determined that no database issues exist.

If the database of a configured LRU is corrupt or missing, the unit will display its database list and indicate the database in question. Confirmation via the primary GTN Xi will still occur for all other configured units if their databases are present and not corrupt.

If an SD card containing databases is installed in the LRU, remote database confirmation will not be available for that unit.

Read more about database conflicts and effective cycles in the *Databases* section.

[1] Requires GDU TXi software v3.30 or later.

Preset Fuel Quantities

CAUTION

Ensure that estimated fuel quantity values are accurate before flight.

FEATURE LIMITATIONS

For the operating limitations of a specific aircraft, consult the POH.

GTN Xi stores preset fuel amounts for estimated full and tab amounts. These settings may not be editable if the unit is interfaced with a digital fuel computer.

Fuel setup keys reside on the start-up page or the Instrument Panel Self-Test page depending on unit configuration.

Fuel on Board

Specify the current fuel quantity.

Tapping this key opens a keypad. Preset keys for "full" and "tabs" aid in fuel data entry.

Initial value automatically reduces based on current fuel flow.

Fuel Flow

Set fuel flow amount.

Tapping this key opens a keypad.

Instrument Panel Self-Test

FEATURE LIMITATIONS

- *Self-test page availability dependent upon dealer configuration*

To ensure safe operation, continuous built-in test features exercise the unit's processor, memory, external inputs, and outputs.

If configured, the results of all external equipment checks performed by the unit display on the Instrument Panel Self-Test page.

Review this list to ensure that all CDI/HSI outputs and other displayed data are correct for the connected equipment.

Tapping **Continue** advances to the next page.

If an instrument remains flagged after one minute, check the status of the associated LRU, then contact a Garmin dealer for support.

Database Conflicts

FEATURE LIMITATIONS

- *Applicable to dual GTN Xi and GTN Xi/GDU TXi[1] installations only*

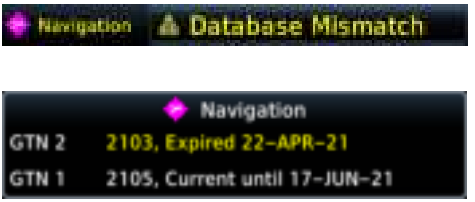
Conflicts occur when the database of a configured GTN Xi or GDU TXi is corrupt, missing, or past its expiration date.

When this happens:

- A caution indication appears on the start-up page of the primary GTN Xi. Depending on the type of conflict, a selectable information key may appear next to the database name.
- The database list displays on the appropriate LRU (remote confirmation is no longer available for that unit).
- The database name appears in yellow on both the primary GTN Xi and the associated LRU.

Resolve database conflicts when they occur.

DATABASE MISMATCH



Tapping **Database Mismatch** displays all databases of that particular type and their associated LRUs. Expired or corrupt databases appear in yellow at the top of the list.

MISSING DATABASE INFORMATION

A message informs when database information from the indicated LRU is missing. This appears when an LRU is not powered on during start-up.

Always verify that all LRUs are online before tapping **Continue**.

[1] Applicable only to GDU TXi software v3.30 and later.

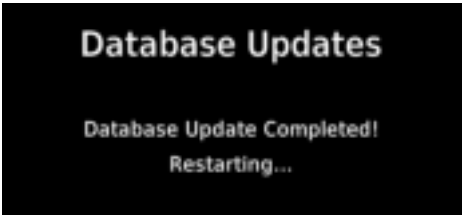
SELECT ALL DATABASES

Select individual databases for transfer, or choose **Select All** if all listed databases require updating.

By default, this page displays only the databases recommended for update.

A message notifies when no such databases are available.

After all selections are made, initiate the update process by tapping **Start**.



The unit automatically restarts once all updates are complete.

Dual GTN Xi and GTN Xi/GDU TXi Installations[1]

To allow remote database confirmation from the primary GTN Xi series navigator, remove the SD card from the second GTN Xi series navigator and/or GDU TXi unit after installing databases.

[1] Applicable only to GTN Xi series navigators with software 20.20 or later and GDU TXi units with software v3.30 or later.

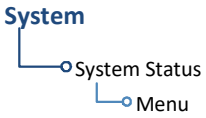
Database SYNC

Database SYNC minimizes database maintenance by synchronizing active and standby databases across all configured LRUs. Once a standby database becomes effective, each LRU automatically generates an update prompt.

FEATURE LIMITATIONS

- *Not applicable to Terrain database*

WHERE TO FIND IT



This function resides in the System Status menu.

Home > **System** > **System Status** > **Menu** > **Database SYNC**

A pop-up informs you that enabling Database SYNC may overwrite any databases currently in standby.

Toggling **Database SYNC** off disables the Chart Streaming function (if enabled).

Database SYNC Transfer Function

- Enables automatic database synchronization across all capable Garmin avionics
- Includes active and standby databases
- Prompts unit restart if a new database is effective and the aircraft is ground

Dual GTN Xi Installations

To prevent crossfill errors after installing new databases, be sure to install matching databases on both GTN Xi units and allow Database SYNC to complete before departure.

LOAD FREQUENCY OPTIONS

You can load active or standby frequency values to a COM or NAV radio from a search tab or waypoint information page (i.e., Airport, VOR). Selecting a frequency from one of these locations opens a pop-up.

Select the **Active** or **Standby** key for the appropriate radio.

Monitor Mode

Enabling monitor mode allows you to listen to the standby frequency while the unit continues monitoring the active COM channel.

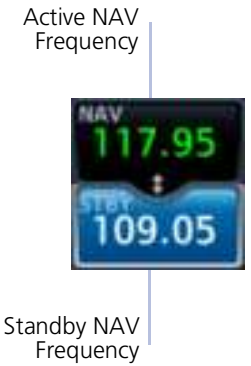
When the COM active frequency receives a signal, the unit automatically switches back to the active frequency. Once activity on the COM active channel ceases, the unit returns to listening to the standby frequency.

Tower Transmission (Active Frequency)

ATIS Broadcast (Standby Frequency)

Monitor mode is useful when you want to listen to a recorded broadcast (e.g., ATIS) on the standby channel, but still receive control tower transmissions on the active channel.

STANDBY NAV FREQUENCY ENTRY



To change the standby frequency:

1. Push the dual concentric control knob repeatedly until the standby NAV frequency window is activated.
2. Rotate the inner and outer knobs or tap **STBY** and enter the frequency using the data entry keys.

Upon selection, the standby frequency window remains active for approximately 30 seconds.

You can tap **XFER** to assign the standby value as the active frequency, or select the active NAV frequency window to flip/flop values.

Navigation frequencies include:

- Glideslope
- Localizer
- VOR

Search Tabs

The **Find** key provides access to multiple search tabs. Each tab displays a list of selectable identifiers based on specific criteria.

Intercom Setup

Setup controls allow you to access:

- Communication modes between pilot, co-pilot, and passenger
- Distribution and mute options for two music interfaces
- Distribution and volume of phone calls

Passengers cannot transmit over the active COM radio, even if equipped with a PTT key.

VOLUME AND SQUELCH ADJUSTMENTS

NOTE

Installations that utilize GMA 35 discretes must have the pilot squelch set to manual and 100% volume to allow installers to configure the GMA 35 discretes.

Volume and squelch may be set separately for the pilot, co-pilot, and passenger intercoms.

To set volume and squelch levels, tap **Pilot VOL/SQ**, **Co-Pilot VOL/SQ**, or **Passenger VOL/SQ**.

Directional keys increase or decrease volume and squelch.

Tapping **Auto Squelch** allows the unit to set squelch level automatically. Toggle this function off for manual adjustments.

Music Setup

The GMA 35 provides two music interfaces. Select **Music 1** or **Music 2** to set:

- Who hears music
- When to mute music
- Music volume

At every power cycle, the "Mute music during radio" selection is active.

Telephone Setup

NOTE

When using the GSR 56 Iridium phone system, Garmin recommends activating audio only during phone calls.

The GMA 35 provides a 2-way telephone interface and depends on the state of the telephone distribution. Telephone communication is much like using the intercom, allowing both parties to talk at once.

Tap **Telephone** to set:

- The recipients of a telephone call
- The volume of the telephone call

Telephone audio distribution is retained across power cycles for the passengers. Pilot and co-pilot telephone distribution deactivates after a power cycle.

Bluetooth Audio

The GMA 35c provides an audio connection to a portable device via Bluetooth wireless technology.

Tap **Bluetooth** to set:

- Who can hear the Bluetooth enabled device
- When to mute audio
- Volume level

Keyboard Type

WHERE TO FIND IT

Home
System
Setup

Select a preferred keyboard type for use during alphanumeric data entry operations. This option resides in the System Setup app.

Tapping this key opens a menu of available keyboard types. Options and layout vary according to display size.

KEYBOARD TYPE	GTN Xi SERIES	
	650	750
Alphabetical (ABC)	•	•
U.S. standard (QWERTY)	•	•
Slider	•	

Nearest Airport Runway Criteria

Specify runway criteria to determine which airports appear on the Nearest Airport page.

WHERE TO FIND IT

System
Setup
Nearest Airport

Customization options are accessible via the System Setup app.

To avoid nuisance alerts during an approach, separate airport runway settings may be configured for the TAWS/HTAWS alerting function. Contact your installer for information about these settings.

Nearest airport runway criteria do not affect the best glide airport indicator. Contact a Garmin dealer to adjust runway criteria for this specific feature.

Data Logging at a Glance

To automatically upload data to flyGarmin, install Flight Stream into GTN Xi or GDU TXi.

Upon power up, GTN Xi begins logging flight data automatically, storing the data in its internal memory.

If Flight Stream is present in GDU TXi:

- GDU TXi streams data to Garmin Pilot via Flight Stream[1]

If Flight Stream is present in GTN Xi:

- GDU TXi transfers logs to GTN Xi, which then streams the data to Garmin Pilot via Flight Stream[1]
- GTN Xi is the preferred location for Flight Stream installation

If an SD card is present in GTN Xi:

- Pilot uses the export function to write GTN Xi data to the SD card

What happens if there's a power interruption?

Data logging stops if power is lost. All data recorded up to that point remains stored in the internal memory. Data is not recorded for the duration of the outage. When GTN Xi reboots, data logging automatically resumes with a new log file.

[1] Pilot setup required.

Glide Range Ring

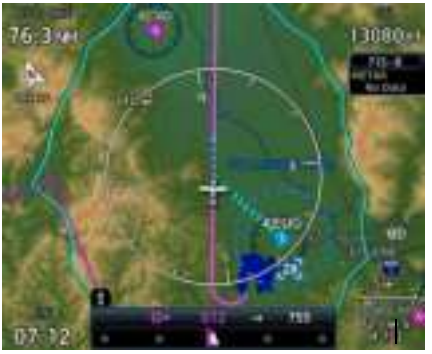
FIXED WING AIRCRAFT ONLY

FEATURE REQUIREMENTS

For best glide performance, the aircraft must be configured in accordance with AFM/POH guidance.

OPTIONAL COMPONENTS

Glide Range Ring wind compensation requires datalink winds or a compatible PFD.



Identifies map region and features within gliding distance. A cyan border indicates where the projected glide descent reaches 50 ft above terrain.

The Glide Range Ring is an estimate based on the best glide speed and glide ratio published for the aircraft. For more information, consult the AFM/POH.

This overlay receives wind information from the ADAHRS (if present). It does not require an ADAHRS unit for operation.

Glide Range Ring Options

- Off
- Ring Only
- Glide Only
- Ring and Glide

The Glide Range Ring depicts the estimated glide range down to 50 ft AGL. It does not show beyond 50 ft AGL where the aircraft reaches the ground.

Data updates occur approximately every 5 seconds.

Data Tab Options:

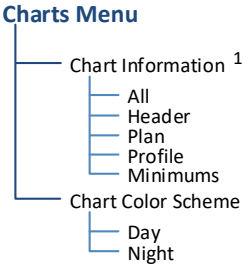
Available field types and their corresponding labels are as follows:

ACTV WPT	Active waypoint	MSA	Minimum safe altitude
AGL	Above ground level	NAV/COM	Active NAV/COM frequency[4, 7]
BRG	Bearing to waypoint	OAT (static)	Outside static air temperature
D/B APT	Distance/bearing from destination airport (i.e., the straight line distance)	OAT (total)	Outside total air temperature
DIS	Distance to waypoint	Position	Current position (lat/lon)
DIS to Dest	Distance to destination (i.e., the distance along the flight plan)	RAD ALT	Height above ground as indicated by the radar altimeter[3]
DTK	Desired track	TKE	Track angle error
ESA	En route safe altitude	TRK	Track
ETA	Estimated time of arrival	Time	Current time
ETA at Dest	ETA at destination	Time	Current time with seconds
ETE	Estimated time en route	Time to TOD	Time to top of descent
ETE to Dest	ETE to destination	Trip Timer	Timer display
FLT ID	Flight ID[1]	VOR/LOC	Tuned VOR/LOC information[4, 5, 6]
Fuel Flow	Total fuel flow[2]	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

"Destination" refers to the missed approach point (if an approach is loaded) or the final airport in the flight plan.

[1] Available when a transponder or GDL 88 is present. [2] Available when a fuel sensor is present.
[3] Available when a radar altimeter is present. [4] Label information dependent upon active frequency selection.
[5] Tuned LOC shows airport and runway. Tuned VOR shows radar altimeter and distance to waypoint values.
[6] GTN 650Xi and GTN 750Xi units only. [7] GTN 650Xi only.

Chart Setup



Tap **Menu** to access setup selections.

From here you can:

- View individual chart sections (ChartView only)
- Change the chart's color scheme for day or night viewing

Chart Information [1]	Displays individual sections of a chart in the ChartView database only. Options include: • All • Header • Planview • Profile • Minimums
Invert Colors	Toggles chart color scheme between day and night modes. • Day mode displays black on white background • Night mode displays inverse white on black background

[1] ChartView only.

GPS Flight Phase Annunciations

Check the annunciator bar for current phase of flight.

Map complements your printed approach plates by improving situational awareness during the approach. It does not replace printed approach plates. **Always fly an approach as it appears on the approach plate.**

Phase of flight annunciations are a direct indication of the current CDI behavior for the selected navigation source. Under normal conditions, these annunciations are green. They turn yellow when cautionary conditions exist.

A caution alerts you when the GPS/WAAS accuracy required for the displayed service level has not been met within the last 30 seconds. This means that an approach downgrade or failure may occur. Always monitor flight phase annunciations and system messages for any change in status.

Not all annunciations are available for every navigator.

ANNUNCIATION	FLIGHT PHASE
0.30 NM	• 0.3 nm CDI scale • Based on pilot selection
1.00 NM	• 1.0 nm CDI scale • Based on pilot selection
DPRT	**Departure** • Terminal level with departure procedure as the active navigation • System using non-precision approach integrity • CDI full-scale deflection: 0.30 nm
DR	**Dead reckoning** • CDI not available
ENR	**En route** • CDI full-scale deflection: 2.0 nm or current CDI scale selection, whichever is smaller
LNAV	**Lateral Navigation Approach** • Fly to published LNAV minimums
LNAV+V	**Lateral Navigation Approach with Advisory Vertical Guidance** • Fly to published LNAV minimums

ILS Approach

NOTE

ILS and LOC approaches are not approved for GPS. GPS guidance is for monitoring purposes only.

Selecting an ILS or LOC approach results in a pop-up message. Activate the approach or select a different one.

Do not attempt to use the unit as the primary navigation source during ILS approach.

VOR+V Approaches

Per guidance provided in AC 90-108 regarding the use of GPS as an alternate means of navigation, VOR and NDB approaches may be treated as LNAV+V approaches (i.e., LNAV with advisory vertical guidance) as long as the pilot monitors the VOR.

During approach selection, "+V" displays for VOR and NDB approaches when advisory guidance is available. Approach strings remain unmodified when no vertical guidance is available.

If the approach indicates "VOR+V," then advisory vertical guidance may be removed without indication. This is due to the vertical guidance not being within tolerances.

This does not constitute a downgrade. You may still fly the approach to VOR minimums.

Flying a VOR approach with advisory vertical guidance (VOR+V) does not change how the approach should be flown. The pilot is still responsible for descending to the correct altitude at each step down.

The result is still an MDA and missed approach point.

If pilot exceeds the horizontal alarm limits:

- Approach downgrades to non-precision
- "LNAV" annunciates on Map to inform of the change
- Advisory message: "GPS approach downgraded. Use LNAV minima."
- Pilot continues approach using LNAV non-precision minimums, if applicable

If GPS integrity does not meet the non-precision horizontal alarm limits:

- Advisory message: "Abort Approach. GPS approach is no longer available."
- Pilot acknowledges message
- Unit reverts to terminal limits of 1 nm to support navigation to the missed approach

If the approach indicates "LP+V," then advisory vertical guidance may be removed without indication. This is due to the vertical guidance not being within tolerances.

This does not constitute a downgrade. You may still fly the approach to LP minimums.

Flying an LP approach with advisory vertical guidance (LP+V) does not change how the approach should be flown. The pilot is still responsible for descending to the correct altitude at each step down.

The result is still an MDA and missed approach point.

When crossing the final approach fix:

- Waypoint sequences to the missed approach point (e.g., RW31, the runway threshold)
- Pilot flies toward missed approach point, keeping the needle on the external CDI (or HSI) at center, observing published altitude minimums
- Final course segment becomes the active flight plan leg on Map

Approaching missed approach point:

- Advisory message: "Arriving at Waypoint."

Stormscope

Stormscope lightning information displays on a dedicated weather page and as overlays on Map.

WARNING

Do not exclusively use the lightning detection system for weather avoidance. The system may display inaccurate or incomplete information. For additional information, consult the lightning detection system documentation.

FEATURE REQUIREMENTS

- *WX-500 Stormscope Weather Mapping Sensor*

FEATURE LIMITATIONS

- *Stormscope lightning information cannot display concurrently with a datalink lightning weather product (SiriusXM, Connext, or FIS-B)*

Stormscope Features

- Passive weather avoidance system
- Detects electrical discharges from thunderstorms within 200 nm of current position
- Plots strike count and relative bearing location every two seconds
- Heading and distance from aircraft
- Arc and 360° viewing options

For more information, consult the WX-500 pilot's guide.

Traffic Awareness

WARNING

Do not rely solely upon the display of traffic information for collision avoidance maneuvering. The traffic display does not provide collision avoidance resolution advisories and does not under any circumstances or conditions relieve the pilot's responsibility to see and avoid other aircraft.

FEATURE LIMITATIONS

- *Traffic symbols vary according to traffic source (e.g., TIS-A, TAS, ADS-B)*
- *Intruding aircraft without altitude reporting capabilities do not display altitude separation data or climb /descent indications*
- *Available display ranges and vector types are dependent upon traffic source*

Available Traffic Sources

- TIS-A
- TCAD 9900B
- TCAD 9900BX
- Ryan TCAD 9900BX w/GDL 88
- TAS/TCAS I
- TCAS II
- ADS-B

Available functions, alerting features, and options are dependent upon on the traffic system source.

ADS-B controls are accessible from the Traffic setup menu. Controls for other traffic systems reside in a control menu and/or on the Traffic page.

TERRAIN SETUP SELECTIONS

View	**360**	• Changes view format to a 360° ring encircling the aircraft (default view)
	Arc	• Changes view format to a forward-looking 120° arc
Layers	**Flight Plan**	• Toggles the active flight plan overlay on or off (Terrain page only)
	Legend	• Toggles the Terrain and Obstacle/Wire legend on or off
HTAWS & (H)Terrain Alerting	**Test [NAME]**	• Performs a system test of the terrain alerting function • Verifies the validity of required databases
	[NAME] Inhibit	• Inhibits visual alerts for terrain, obstacles, and power lines • Inhibits the FLTA aural and visual alerts
	RP Mode	• Reduces alerting thresholds for low-level operations (rotorcraft only)
TAWS-A	**Flap Override**	• Overrides flap-based FIT alerting while other FIT alert functions remain in effect • Inhibits nuisance FIT alerts where flap extension is not desired
	G/S Inhibit	• Inhibits glideslope or glidepath alerts depending on current state • Use to prevent glideslope/glidepath deviation alerts (e.g., when flying a localizer backcourse approach) • Active only for a single approach
	GPWS Inhibit	• Inhibits GPWS audible and visual alerts • (i.e., EDR, ECR, FIT, and NCR)
TAWS A & B	**TAWS Test**	• Performs TAWS alerting system test • Verifies the validity of required databases
	TAWS Inhibit	• Inhibits PDA/FLTA audible and visual alerts • Inhibits EDR/NCR audible and visual alerts for TAWS-B

Alert Inhibit, TAWS & Terrain Alerting

The **Terrain Inhibit** control is accessible via the terrain pop-up alert or the Terrain page menu.

Always use discretion when inhibiting TAWS or Terrain Alerting alerts. Re-activate the alert function when appropriate.

TERRAIN INHIBIT FUNCTIONS	
INHIBIT	Manually inhibits TAWS or Terrain Alerting aural and visual alerts for low altitude approaches or rotorcraft operation.
AUTOMATIC INHIBIT	Automatically inhibits TAWS and Terrain Alerting alerts when the aircraft meets the following approach criteria. **TAWS:** • GPS/SBAS approach • Position inside FAF **TAWS & TERRAIN ALERTING:** • Altitude <200 ft above runway elevation • Position <0.5 nm of approach end or between each runway end

TAWS-A INHIBIT ANNUNCIATIONS

Terrain Page

TAWS-A alert inhibit annunciations appear at the bottom right of the display.

- "FLAP OVRD" does not annunciate if GPWS Inhibit is already active, as both functions inhibit FIT alerts.
- A plus sign indicates multiple alerts (e.g., "TAWS INHB+")

HTAWS/(H)Terrain Alerting

NOTE

HTAWS-enabled units can be identified by going to the Terrain page and checking the lower right-corner for "HTAWS."

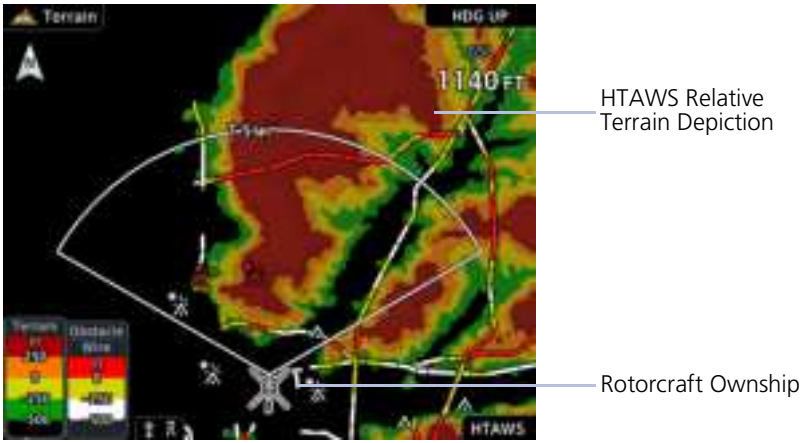
FEATURE REQUIREMENTS

- *Valid 3D GPS position*
- *Valid terrain/obstacle database*

Garmin's Helicopter Terrain Awareness Warning System (HTAWS) is an optional feature to increase situational awareness and aid in reducing controlled flight into terrain. Garmin HTAWS is TSO-C194 authorized. (H)Terrain Alerting is **not** TSO-C194 authorized.

HTAWS provides visual and aural annunciations when terrain and obstacles are a hazard to the aircraft.

HTAWS Terrain Display



POWER UP

During unit power up, terrain and obstacle database versions display along with a pilot disclaimer. At the same time, the HTAWS self-test begins. HTAWS provides the following aural messages upon test completion:

- *The test is successful:* "HTAWS System Test, OK"
- *The test fails:* "HTAWS System Failure"

Self-test failures are accompanied by a textual annunciation. For a list of possible HTAWS alerts, refer to the annunciations table at the end of this section.

Emergency Modes at a Glance

Emergency modes are available to assist you in the event of engine failure or a loss of cabin pressure.

NOTE

While emergency features can assist in workload reduction, it is the responsibility of the pilot in command to know and follow all published AFM/POH normal and emergency procedures.

Emergency Page, GTN 650Xi

A status window displays information related to the active emergency mode.

Emergency modes are accessible via the Emergency page. Available options are dependent upon configuration.

Contact a Garmin dealer to see if emergency features are available for your aircraft.

	Smart Glide	Emergency Descent Mode
Emergency Condition	engine failure	cabin depressurization, fire
Pilot Assumption	coherent	hypoxic[1]
Mode Activation	manual	automatic[2] or manual
Active AFCS Vertical Mode[3]	IAS to best glide speed	IAS to V_{MO} (fast)
Active AFCS Lateral Mode[3]	GPS or ROL at wings level	HDG
Controlling LRU	GTN Xi	GDU TXi (PFD)

[1] Pilots experiencing hypoxia may be incoherent or unconscious.
[2] Mode activation may occur automatically depending on configuration.
[3] Automatic flight director mode change available only with GFC 500/600.

Smart Glide

In the event of engine failure or partial power loss, this feature allows you to quickly locate and plot a direct course to the most suitable airport within glide range, avoiding terrain and obstacles along the way.

WARNING

Do not rely solely upon Smart Glide for navigation, airspeed and altitude management, or landing field selection. It is the pilot's responsibility to navigate, manage airspeed and altitude, and determine the best field for landing.

NOTE

Smart Glide is not an autonomous landing system. It indicates the latest appropriate time for the pilot to take control of the aircraft by issuing visual and aural "Maneuver and Land" alerts. It is the pilot's responsibility to disengage the autopilot (if present) and safely fly the approach and landing.

FEATURE REQUIREMENTS

- *GTN Xi software v20.20 or later*
- *Garmin PFD or Garmin ADI (e.g., GI 275)*

FEATURE LIMITATIONS

- *Availability dependent upon configuration*
- *Does not provide automatic weather avoidance, vertical guidance, or altitude management*
- *Manual activation only*

Smart Glide is unavailable when:

- *on the ground and below 1,000 ft AGL (after takeoff)*
- *descending below 200 ft AGL (after having reached 1,000 ft AGL)*
- *flying at altitudes above 36,000 ft (11,000 m)*
- *one of the following is lost: GPS, ADC, or AHRS*
- *a crossfill error occurs and the cross-side navigator is GTN Xi*[1]
- *the system is initializing (lasts approximately 40 seconds after unit power up)*[2]

OPTIONAL COMPONENTS

Feature availability is dependent upon software version. Contact a Garmin dealer for more information.

- *G3X*
- *G5 EFI*
- *GDL 69/69A*[3]
- *GI 275*
- *G500/G600/G700 TXi*[4]
- *GFC 500/600 autopilot*[5]
- *FIS-B In source*[3]

[1] Dual GTN Xi installations only. Crossfill errors occur only when both units are online. For information on how to prevent crossfill errors after installing databases, read *Database SYNC* in section 2.
[2] Results in a system advisory message if initialization occurs during flight.
[3] Provides datalink winds aloft and METAR information. [4] Requires GDU TXi software v3.30 or later.
[5] Automatically engages servos and activates airspeed, wings-level, and GPS flight director modes.

How it Works

*The "Hold for Smart Glide Activation" control label appears near the bottom of the display when you activate the feature using the **Direct To** key.*

Activate Smart Glide when engine failure occurs. Activation options vary according to airframe.

- *Airframes with a dedicated Smart Glide switch:* Push and release the dedicated switch.
- *Airframes without a dedicated Smart Glide switch:* Push and hold the **Direct To** key on GTN Xi for 2 seconds.
- *All installations:* Go to the Emergency page and tap **Smart Glide**.

GTN Xi signals all configured LRUs that Smart Glide is active.

UPON ACTIVATION

Dual GTN Xi configuration with dedicated map display on GTN 750Xi (GTN 1) and Emergency page on GTN 650Xi (GTN 2).

Dual GTN Xi Installations:

GTN 1 displays Smart Glide indications on Map, while GTN 2 defaults to the Emergency page.

Single GTN Xi Installations:

Map automatically opens and displays Smart Glide indications.

Installations with GFC 500/600 Autopilot:

If present, the GFC 500/600 autopilot engages servos when the aircraft is more than 2 nm from the destination airport. Coupling will not occur if less than 2 nm; however, the autopilot will remain coupled if servos are already engaged. Flight director modes activate as follows:

- IAS to target the configured glide speed
- ROL with wings level reference attitude
- GPS upon calculation of the Smart Glide route

Smart Glide Function

Functionality changes based on whether or not a suitable destination airport is within the estimated glide range.

Suitable airport within glide range:

- Configures Map to show pertinent glide information, including Smart Glide Range Ring and arrival AGL
- Replaces existing flight plan with a direct glide route to a suitable destination airport
- Provides a list of alternate airports that are within the estimated glide range
- Indicates the best glide speed for the aircraft at gross weight
- Triggers autopilot flight director modes to target configured best glide speed and follow the GPS Smart Glide direct-to route[1]
- Alerts pilot if glide destination falls outside the Smart Glide Range Ring
- Allows direct tuning of emergency transponder code 7700[2]
- Tunes standby COM to destination CTAF or tower frequency
- CDI scale is set to 0.30 nm

No suitable airport within glide range:

- Configures Map to show pertinent glide information, including Smart Glide Range Ring
- Indicates the best glide speed for the aircraft at gross weight
- Triggers autopilot flight director modes to target configured best glide speed and level the wings[1]
- Allows direct tuning of emergency transponder code 7700[2]
- Tunes standby COM to emergency frequency 121.5
- Provides altitude voice callouts for 2,000, 1,000, and 500 ft AGL

[1] Requires a GFC 500/600 autopilot.
[2] Requires a compatible transponder that can be controlled from GTN Xi.

DURING SMART GLIDE MODE

*The **Glide** key replaces the **Messages** key when the Emergency page is not active.*

Smart Glide calculates the glide route to a suitable destination airport. It then plots a direct course to the airport, replacing the existing flight plan.

Airport selection is based on specific characteristics and conditions. For more about how Smart Glide prioritizes airports, read *Glide Destination Airport Criteria*.

Standby COM frequency tunes to either the airport CTAF or tower frequency (if the active frequency is not already tuned).

Glide Destination Airport Criteria

Smart Glide will only suggest airports that meet the runway surface requirement.[1] Any remaining airports are prioritized if:

- Weather conditions are MVFR or better[2]
- Estimated AGL altitude upon arrival is higher
- The runway is longer

Airports are de-prioritized if:

- The airport type is Private
- Weather conditions are IFR or lower[2]
- The longest runway is less than the configured minimum desired runway length[1]
- Gust speed is higher than configured maximum gust speed[1]

[1] For aircraft specific information, consult the AFMS.
[2] Weather rankings apply only to airports with weather reporting capability. Weather affects ranking only if the aircraft is equipped for weather data and weather information is current.

Map features automatically declutter and TOPO and Terrain overlays turn on if not already active. Map features revert to their previous settings when you cancel Smart Glide.

The yellow Smart Glide Range Ring automatically appears on all configured moving map displays (i.e., Map and HSI Map). Unlike the normal mode Glide Range Ring, this ring uses real-time data to calculate an estimated glide ratio based on current aircraft glide performance and available wind data. Shading outside the ring denotes areas not within estimated gliding distance.

An altitude label indicates the estimated arrival AGL for the airport. Runway extensions and AGL and DIS/ BRG APT user fields turn on if not already active.

HSI Map & MFD Map, GDU TXi

Smart Glide & Glide Range Ring

The Glide Range Ring uses color to indicate its current behavior. Under normal conditions, the ring is based on the configured glide ratio (cyan coloration). Upon Smart Glide activation, GTN Xi begins to measure the actual glide ratio and updates the ring accordingly (yellow coloration). If no aircraft configuration changes are made (e.g., flaps, gear), the measured glide ratio should reach steady state within 30 seconds of achieving stable glide. After configuration changes, it may take up to 30 seconds for GTN Xi to determine the new glide ratio.

While en route, GTN Xi navigates directly to the center of the airport.

Unless already completed, disengage the autopilot (if equipped) and land the aircraft when you receive the "Maneuver and Land" alert.

Smart Glide does not manage altitude. In order to make a safe landing, you may need to add drag and/or maneuver the aircraft off route before reaching the airport.

Flashing textual annunciations alert the pilot of warning, caution, and advisory conditions. These annunciations appear in a banner on the Emergency page and over the route display on Map. They turn solid or disappear after 5 seconds.

Advisory Alert

APPROACHING AIRPORT

Annunciates when the aircraft is 4 nm from airport.

Caution Alert

AIRPORT OUT OF RANGE

Annunciates when the destination airport is unreachable.

Warning Alert

MANEUVER AND LAND

Annunciates when the aircraft is 2 nm from airport.

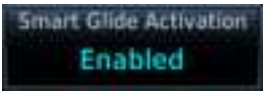
Flashing Alert Annunciations

- "AIRPORT OUT OF RANGE"[1]
- "APPROACHING AIRPORT"[1]
- "MANEUVER AND LAND"[1]
- "ALTN APT OUT OF RANGE"[2]

[1] Turns solid after 5 seconds.
[2] Disappears after 5 seconds.

For a list of possible Smart Glide alerts, refer to the annunciation tables in *Smart Glide Alerts*.

Enable Smart Glide Activation



Tapping **Smart Glide Activation** toggles activation between Enabled and Disabled. This key resides in the Emergency menu.

Disabling Smart Glide activation inhibits all methods of activation. An advisory message informs: "SMART GLIDE Disabled. Activation manually disabled by pilot."

To enable or disable Smart Glide activation:

From the Home page, tap **Emergency** > **Menu** > **Smart Glide Activation**.

Activate Smart Glide

NOTE

Contact a Garmin dealer if your installation does not provide access to emergency features.

FEATURE LIMITATIONS

*Activation options are dependent upon installer configuration. If configured for an external switch, activation via the **Direct To** key is not available.*

Emergency Page, GTN 650Xi

A message in the Emergency Mode Status window informs you that no emergency modes are active.

You may activate Smart Glide from any configured GTN Xi series navigator or MFD TXi series display unit. If installed, an external switch allows manual activation without the use of a touchscreen.

ACTIVATE SMART GLIDE VIA EXTERNAL SWITCH

From a dedicated external switch:

Press or toggle the dedicated switch (if configured).

ACTIVATE SMART GLIDE USING THE DIRECT TO KEY

Push and hold the **Direct To** key for 2 seconds. Activation occurs following a 3-2-1 countdown.

ACTIVATE SMART GLIDE FROM THE EMERGENCY PAGE

WHERE TO FIND IT

Home
Emergency
Smart Glide

The **Smart Glide** activation key resides on the Emergency page of the configured GTN Xi series navigator or MFD TXi series display unit.

From the Home page:

Tap **Emergency** > **Smart Glide**.

View Smart Glide Status Information

Tapping **Glide** opens the Emergency page. Refer here for active route and longest runway details, the configured best glide speed for the aircraft, and available control options. This page is also accessible via the **Emergency** icon on the Home page.

When Smart Glide is active, this key replaces the **Message** key in the control bar.

The **Message** key returns once the Emergency page opens or when you cancel Smart Glide.

Emergency Page, GTN 750Xi

1	Mode Status Banner	**5**	Menu Key
2	Active Route Display	**6**	Smart Glide Controls
3	Longest Runway Information	**7**	Best Glide Speed Indication
4	MSG Key (active)		

ACTIVE ROUTE DISPLAY

Shows the active direct route for gliding to the destination airport. Information includes:

- Active airport identifier
- Airport name
- Estimated arrival AGL

Arrival AGL (or *extra altitude*) is the aircraft's estimated height above ground level when crossing the center of the airport.

Active Flight Plan, GTN 750Xi Series

Upon activation, Smart Glide replaces the active flight plan with a new direct course.

A message informs you that the flight plan is unavailable while Smart Glide is active.

GTN 650Xi SERIES

Active route identifiers appear on the Emergency page, active flight plan, Default Navigation page, and Map.

GTN 750Xi SERIES

Active route identifiers appear on the Emergency page, active flight plan, and Map.

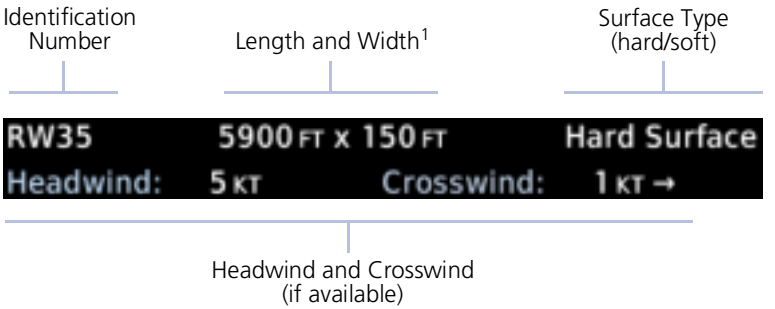
Active route identifiers appear in multiple locations on configured Garmin displays. For details about the Smart Glide indications on these units, consult the associated pilot's guide.

LONGEST RUNWAY INFORMATION

NOTE

Wind data displays for airports without weather reporting if another airport with valid weather data is within 5 nm. The pilot is responsible for determining current wind direction and intensity.

View details about the destination runway.



Headwind data field changes color to indicate when tailwind conditions exist.

Advisory wind data received via datalink could be up to 90 minutes old.

"Wind data not available" Indication

This message displays in the absence of valid wind data.

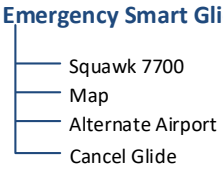
[1] Runway length is always listed first followed by the runway width.

BEST GLIDE SPEED INDICATION

Shows the airspeed necessary to follow the calculated glide route.

This value is configured by the installer and based on the published AFM/POH value for best glide speed at gross weight.

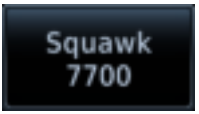
SMART GLIDE CONTROLS



Available control options allow you to:

- Direct tune emergency transponder code 7700
- View Smart Glide information on Map
- View and select alternate airports
- Cancel Smart Glide

Tune Transponder



Tapping **Squawk 7700** tunes the transponder to emergency code 7700. Use this function to immediately alert all air traffic control facilities in the area of your emergency.

A pop-up message requests confirmation.

Tapping **OK** confirms the request.

Tapping **Cancel** closes the pop-up without alerting ATC.

View Smart Glide Information on Map

The **Map** key provides direct access to the moving map. Map shows a graphical representation of the active direct-to course for the suggested airport. Shading denotes areas estimated to be unreachable on glide.

Map, GTN 750Xi

*To return to the Emergency page, tap **Glide**.*

An alert banner displays textual warning, caution, and advisory annunciations. User fields indicating the aircraft's present AGL and its distance/bearing from the destination airport display on a solid black background for greater visibility. Other user fields declutter along with unnecessary map overlays.

If previously configured by the pilot, these two user fields remain in the same location once Smart Glide is activated. If not configured, they will appear in the upper corners as shown. If only one field is configured, the other will appear in the upper left or right corner.

Data removed during Smart Glide	Data depicted during Smart Glide
• Airways • Best Glide Airport indicator • Charts overlay • Fuel Range Ring • Heliports • Intersections • METAR product timestamp • NAV Range Ring • NEXRAD • TOPO Scale • User fields other than AGL and DIS/BRG APT • Visual Approach selector key	• Airports • Active glide route • AGL and DIS/BRG APT user fields • Alert banner • Estimated Arrival AGL label • Glide Range Ring • Runway Extensions • Terrain overlay • TOPO overlay

GTN 750Xi SERIES

Active glide route identifiers appear on the GPS NAV Status bar.

Select an Alternate Airport on Map

You can select an alternate airport by tapping your finger directly on the map display. Selecting an airport icon within glide range opens an information banner. The **Glide to Airport** key replaces the **Graphically Edit FPL** key during Smart Glide mode.

FEATURE LIMITATIONS

Map displays up to 25 alternate airports within the estimated glide range. If more than 25 airports are within glide range, not all will be selectable for the destination airport. This feature is available only for airports in the database.

Map, GTN 650Xi

1. Open Map to view all airports within glide range.

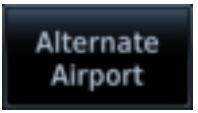
Selected Airport

2. Select the airport that best suits your needs.
3. Tap **Glide To Airport**.

The active glide route adjusts to reflect the new destination. GPS NAV status bar updates to show the new route identifiers (GTN 750Xi Series only).

The new waypoint now appears as active atop the alternate airport list.

Find Alternate Airport



You may select an alternate airport directly from the map display or from the Alternate Airport list. Tapping **Alternate Airport** displays only the airports and runways within the projected glide range.

WARNING

Be aware that other airports or off airport landing areas may be available and more suitable but unknown to the Smart Glide system. The pilot must evaluate all options and choose the most appropriate course of action given the conditions.

NOTE

This system is intended to aid the crew in the initial avionics setup during a glide emergency and, if possible, assist the pilot in finding and navigating to a suitable airport within the estimated glide range of the aircraft. The pilot must make every effort to ensure that the system guidance is as desired.

FEATURE LIMITATIONS

- *Lists up to 25 alternate airports within the estimated glide range*
- *Available only for airports in the database (e.g., private airports not in the database do not appear in the list)*

Alternate Airport List, GTN 650Xi

Alternate airports appear until no longer within the projected range.

Selecting an airport immediately creates a new direct route.

Tapping **Glide** or **Back** returns to the Emergency page.

Using the Direct To function to create and activate a new direct course automatically cancels Smart Glide.

Deactivate Smart Glide

You may deactivate Smart Glide at any time by tapping **Cancel Glide**.

A pop-up message requests confirmation.

Tapping **OK** confirms the request.

Tapping **Back** closes the pop-up without deactivating Smart Glide.

Upon deactivation:

- Map features revert to their previous settings
- Active Flight Plan restores and activates the previous flight plan route
- Aural message "Smart Glide canceled" alerts flight crew of deactivation
- Autopilot (if present) remains in its current active modes or reverts to ROL lateral mode
- CDI scale reverts to its previous setting

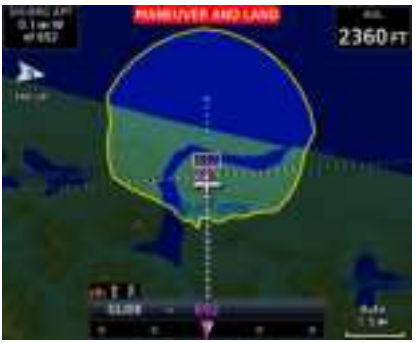
Smart Glide Alerts

WARNING

Do not rely solely upon Smart Glide data for guidance or decision-making. Smart Glide is intended only to enhance situational awareness during an emergency. Always manage any emergency in accordance with the approved flight manual or third-party operating instructions.

Textual annunciations alert the pilot of warning, caution, and advisory conditions related to Smart Glide. An aural voice message may play depending on the alerted condition.

Map, GTN 750Xi



Emergency Page, GTN 650Xi

Smart Glide Alert Banner

When an alert occurs:

- Textual annunciations appear in a banner on the Emergency page and over the route display on Map[1]
- Emergency page opens if another page is active[2]
- An aural voice message may play

[1] System failure alerts do not appear on Map.
[2] System failure alerts only. In dual GTN Xi installations, this occurs on GTN 2 only.

SMART GLIDE ALERTING	
ANNUNCIATION	**ALERT TYPE | CONDITION | AURAL MESSAGE**
MANEUVER AND LAND	**Alert Type:** Warning **Condition:** Aircraft is 2 nm from the destination airport's center. If not already doing so, the pilot should disconnect the autopilot (if equipped) and maneuver to manage altitude for a safe landing. **Aural Message:** "Maneuver and land. Airport X o'clock. Two miles." **Alert Behavior:** Flashing annunciation turns solid after 5 seconds.
NO AIRPORT IN RANGE	**Alert Type:** Caution **Condition:** Smart Glide activates with wings level and no airport within estimated glide range. **Aural Message:** "No airports within glide range."
AIRPORT OUT OF RANGE	**Alert Type:** Caution **Condition:** Destination airport is out of estimated glide range. May occur due to decreasing glide performance. **Aural Message:** "Airport out of range." (plays only once) **Alert Behavior:** Flashing annunciation turns solid after 5 seconds. **Note:** Estimated arrival AGL not available.
ALTN APT OUT OF RANGE	**Alert Type:** Caution **Condition:** The pilot selects an alternate airport via Map or the alternate airport list, but the airport becomes unreachable before Smart Guide can complete route calculation. **Duration:** 5 seconds **Aural Message:** None **Alert Behavior:** Flashing annunciation disappears after 5 seconds.

SMART GLIDE ALERTING	
ANNUNCIATION	**ALERT TYPE | CONDITION | AURAL MESSAGE**
None	**Alert Type:** Caution **Condition:** Smart Glide is active within 2 nm of the destination airport, the autopilot is engaged, and there is not enough altitude for the system to safely make a full circle descent with 2,000 ft remaining. Disengage autopilot to manage energy. **Aural Message:** "Disconnect autopilot." (plays 10 seconds after arriving within 2 nm of destination airport)
CALCULATING ROUTE	**Alert Type:** Advisory **Condition:** System is calculating the glide route to a suitable destination airport. Occurs during the following: • Smart Glide activation • Selection of an alternate destination (pilot override) • When the CDI exceeds half of full-scale deviation **Aural Message:** None **Note:** Estimated arrival AGL not available until route calculation is complete.
ACTIVE	**Alert Type:** Advisory **Condition:** Destination airport within range. Follow the displayed GPS route. **Aural Messages:** • "Airport X o'clock. More than thirty miles." • "Airport X o'clock. X miles." • "Airport X o'clock. X and a half miles." • "Airport X o'clock. One mile." • "Airport X o'clock. Less than one mile."

SMART GLIDE ALERTING	
ANNUNCIATION	**ALERT TYPE | CONDITION | AURAL MESSAGE**
None	**Alert Type:** Advisory **Condition:** Pilot attempts to activate Smart Glide via dedicated aircraft switch or **Direct To** key while the system is experiencing an error. On-screen **Smart Glide** key not available. **Aural Message:** "Smart Glide disabled."
APPROACHING AIRPORT	**Alert Type:** Advisory **Condition:** Aircraft is 4 nm from the destination airport's center. **Aural Message:** "Approaching airport. X o'clock. Four miles." **Alert Behavior:** Flashing annunciation turns solid after 5 seconds.
Smart Glide disabled until aircraft reaches 1,000 ft AGL	**Alert Type:** Advisory **Condition:** Pilot attempts to activate Smart Glide via dedicated aircraft switch or **Direct To** key while Smart Glide is disabled on ground or before reaching 1,000 ft AGL. **Aural Message:** "Smart Glide disabled. Low altitude."
None	**Alert Type:** Advisory **Condition:** Pilot deactivates Smart Glide by tapping **Cancel Glide**. **Aural Message:** "Smart Glide canceled."
None	**Alert Type:** Advisory **Condition:** Pilot activates Smart Glide. **Aural Message:** "Smart Glide active."
None	**Alert Type:** Advisory **Condition:** Smart Glide is active and current AGL reaches 500 ft. **Aural Message:** "Five hundred." **Note:** Occurs only if unit is configured for Terrain Proximity.

SMART GLIDE ALERTING	
ANNUNCIATION	**ALERT TYPE | CONDITION | AURAL MESSAGE**
None	**Alert Type:** Advisory **Condition:** Smart Glide is active and current AGL reaches 1,000 ft. **Aural Message:** "One thousand." **Note:** Occurs only if no airports are within range.
None	**Alert Type:** Advisory **Condition:** Smart Glide is active and current AGL reaches 2,000 ft. **Aural Message:** "Two thousand." **Note:** Occurs only if no airports are within range.
None	**Alert Type:** Advisory **Condition:** GFC transitions to autopilot engaged. **Aural Message:** "Engaging autopilot."

System Failure Alerts

In the case of a Smart Glide system failure (e.g., position data failure), discontinue use of Smart Glide for navigation. Use alternate forms of navigation and consider alternate landing areas.

When a Smart Glide system failure occurs, the Emergency page automatically opens if another page is active. In dual GTN Xi installations, this occurs on GTN 2 only.

These alerts do not appear on Map.

SYSTEM FAILURE ALERTING	
ANNUNCIATION	**ALERT TYPE | CONDITION | AURAL MESSAGE**
TERRAIN DB ERROR	**Alert Type:** Warning **Condition:** Terrain database has an error. **Aural Message:** "Smart Glide failure. Consider alternate landing area."
NAVIGATION DB ERROR	**Alert Type:** Warning **Condition:** Navigation database has an error. **Aural Message:** "Smart Glide failure. Consider alternate landing area."
POSITION DATA ERROR	**Alert Type:** Warning **Condition:** Position or altitude data has an error. **Aural Message:** "Smart Glide failure. Consider alternate landing area."
FPL LOAD FAILURE	**Alert Type:** Warning **Condition:** Error occurs while attempting to calculate a route. **Aural Message:** "Smart Glide failure. Consider alternate landing area."

Emergency Descent

Emergency Descent Mode (EDM) assists pilots of pressurized aircraft in the event of cabin depressurization. Depending on installation type, GTN Xi provides access to this feature via the Emergency page.

FEATURE REQUIREMENTS

- *GDU 700( )/1060 PFD (host)*
- *GFC 600 autopilot configured for EDM*

For automatic activation, GFC 600 must be configured with an air data module that provides cabin pressure monitoring.

FEATURE LIMITATIONS

Availability and the manner in which activation occurs (manual or automatic) are dependent upon configuration.

EDM Activation

Emergency Page, GTN 650Xi

If configured for cabin pressure monitoring, the system monitors cabin pressure once EDM is armed. EDM is considered armed when:

- Autopilot is active
- Aircraft is above 15,000 ft MSL

Once armed, activation may occur manually or automatically.

EDM is a function of GDU TXi. For more information regarding functionality, consult *G500(H)/G600/G700 TXi Pilot's Guide*.

ADVISORY	CONDITION	CORRECTIVE ACTION
DATALINK GDL 88 configuration module needs service.	GDL 88 detects a configuration module fault.	Service required. Contact dealer for support.
DATALINK GDL 88 control input fault. Check transponder is in correct mode.	GDL 88 loses communication with the transponder.	
DATALINK GDL 88 is inoperative or connection to GTN is lost.	GTN loses communication with the datalink device (GDL 88). Traffic and/or FIS-B weather data not available.	
DATALINK GDL 88 needs service.	GDL 88 reports an internal fault.	
DATALINK GSR 56 data services inoperative; registration required.	GSR 56 requires registration. GSR weather and position reporting services are not available.	1. Register the GSR 56. 2. Activate a Connext subscription. 3. Contact dealer for service.
DATALINK GSR 56 is inoperative or connection to GTN is lost.	GTN loses communication with GSR 56. GSR weather, position reporting, and phone services are not available.	1. Close the GSR 56 circuit breaker. 2. Verify that the GSR 56 unit is receiving power. 3. Contact dealer for service.

Smart Glide Advisories

The unit automatically inhibits Smart Glide when the required conditions are not met.

ADVISORY	CONDITION	CORRECTIVE ACTION
REMOTE KEY STUCK Engage/Disengage Smart Glide key is stuck.	System detects the indicated remote key is depressed for at least 30 seconds. It will now ignore this input.	Push the indicated key again. If it remains stuck, contact dealer for service.
SMART GLIDE Disabled. Activation manually disabled by pilot.	Pilot disables Smart Glide activation by toggling the **Smart Glide Activation** key to Disabled.	Re-enable Smart Glide activation. From the Home page, tap **Emergency** > **Menu**, and toggle the **Smart Glide Activation** key to Enabled.
SMART GLIDE Disabled. Erroneous activation detected. May be re-enabled via Emergency page menu.	System disables Smart Glide activation because the feature exceeded the maximum number of activations allowed within a one minute period. System allows up to three activations per minute.	
SMART GLIDE Disabled. System initializing.	System disables Smart Glide activation for 40 seconds after unit power up.	Wait 40 seconds for system initialization to complete, then re-attempt activation.
SMART GLIDE Unavailable above 11,000M/36,000FT.[1]	Aircraft altitude is above the indicated MSL.	Descend below 11,000 m/36,000 ft and attempt to activate Smart Glide.

ADVISORY	CONDITION	CORRECTIVE ACTION
SMART GLIDE Unavailable. AHRS roll angle lost.	GTN Xi is not receiving a valid roll angle from the AHRS source.	Contact dealer for service.
SMART GLIDE Unavailable. Barometric altitude lost.	GTN Xi is not receiving valid barometric altitude.	
SMART GLIDE Unavailable. Crossfill Error.	A crossfill error prevents Smart Glide from functioning properly.	
SMART GLIDE Unavailable. Magnetic heading lost.	GTN Xi is not receiving a valid heading from AHRS source.	
SMART GLIDE Unavailable. True airspeed lost.	GTN Xi is not receiving valid true airspeed from ADC source.	

[1] Actual units dependent upon configuration.

190-02327-11 Rev. A