# GARMIN.

# GTR 205
# GNC 215

Pilot's Guide

## COPYRIGHT & TRADEMARKS

## SOFTWARE VERSION

This manual reflects the operation of system software v2.10. Some differences in operation may be observed when comparing the information in this manual to later software versions.

## INFORMATION & SUPPORT

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

For aviation product support, visit flyGarmin.com.

⚠️ **WARNING**

*Do not learn operational procedures for this product in the air. For safety reasons, thoroughly practice basic operation of this product on the ground before use during flight.*

⚠️ **WARNING**

*Review and understand all aspects of this pilot's guide. Doing so reduces the risk of unsafe operation.*

⚠️ **WARNING**

*Never use expired databases. Update databases regularly to ensure currency. Use out of date database information at your own risk.*

⚠️ **WARNING**

*Always resolve any discrepancies between the display and other navigation sources when they occur. During flight operations, compare display indications to information from other NAVAIDs, visual sightings, charts, and other available sources before continuing navigation.*

⚠️ **WARNING**

*Be aware that this product, its packaging, and its components contain chemicals known to the State of California to cause cancer, birth defects, or reproductive harm. This notice is being provided in accordance with California's Proposition 65. If you have any questions or would like additional information, please refer to our website at www.garmin.com/prop65.*

# CAUTION

*Do not clean display surfaces with abrasive cloths or cleaners containing ammonia. They will harm the anti-reflective coating. Use a clean, lint-free cloth and anti-reflective lens cleaner.*

# CAUTION

*Ensure that any unit repairs are made by an authorized Garmin service center. Unauthorized repairs or modifications could void both the warranty and affect the airworthiness of the aircraft.*

# NOTE

*The COM application supports channel tuning for both 8.33 kHz and 25 kHz channels within radio-frequency range. If flying in a region where 8.33 kHz channel spacing is available, set the COM radio to 8.33 kHz to prevent the loss of any stored or recently used frequencies.*

# NOTE

*The COM transceiver antenna(s) of the device is (are) intended to be mounted along the fuselage of the aircraft and accessible only to aircraft maintenance personnel. To reduce RF exposure, avoid installation of antenna(s) in areas of the aircraft that provide crew or passengers direct exposure to antenna radiation. For installations that may provide direct exposure, the limits specified by FCC regulations 47 CFR 1.1310 should be referenced by the installer.*

# NOTE

*All visual depictions contained within this document, including screen images of the system panel and displays, are subject to change and may not reflect the most current system software and aviation databases. Depictions of equipment may differ slightly from the actual equipment. Feature depictions may differ from actual unit features depending on configuration.*

# NOTE

*This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.*

# NOTE

*Use of polarized eye wear may cause the flight displays to appear dim or blank.*

**NOTE**

*Canadian installations: In accordance with Canadian Radio Specifications Standard 102 (RSS 102), RF field strength exposure to persons from an antenna connected to this device should be limited to 51 V/m for controlled environment and 22 V/m for uncontrolled environment.*

*Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.*

**NOTE**

*The pilot/operator must review and be familiar with Garmin's database exclusions list, as discussed in SAIB CE-14-04, to determine what data may be incomplete. Visit flyGarmin.com and select "Database Exclusions List."*

**NOTE**

*The pilot/operator must have access to Garmin and Jeppesen database alerts and consider their impact on the intended aircraft operation. To view these alerts, visit flyGarmin.com and select "Aviation Database Alerts."*

**NOTE**

*Contact Garmin Product Support if you want or need to adjust the database.*

**NOTE**

*Garmin requests the flight crew report any observed discrepancies related to database information. These discrepancies could come in the form of any displayed item used for navigation or communication in the air or on the ground. Visit flyGarmin.com and select "Aviation Data Error Report."*

**NOTE**

*This unit has a very high degree of functional integrity. However, the pilot must realize that providing monitoring and/or self-test capability for all conceivable system failures is not practical. Although unlikely, it may be possible for erroneous operation to occur without fault indication. It is the responsibility of the pilot to detect such occurrences by cross-checking with all redundant or correlated information available in the cockpit.*

## Record of Revision

| REVISION | DATE | CHANGE DESCRIPTION |
|:---:|:---:|:---|
| A | 01.11.24 | Production Release. |

## Available for Download

**Electronic Pilot's Guide**

A version of this guide saved in Adobe Acrobat. Available for viewing on your computer or portable device.

Go to garmin.com/manuals.

## Product Descriptions

This guide covers the operation of the following Garmin product series.

GTR 205                     GNC 215

| When you see | It means |
|---|---|
| a product name in bold (e.g., **GNC 215**) | the information pertains to that specific model only |
| product names separated by a forward slash (e.g., GTR 205/GNC 215) | the information pertains to both products |

Unless otherwise stated, information pertaining to *the unit* is applicable to both products: GTR 205 and GNC 215

## Feature Depictions

Except for cases when operational differences dictate, the GNC 215 display is shown as typical.

## Special Notations

This guide uses the following message types when applicable.

**WARNING**
> *Indicates when serious injury or death will occur.*

**CAUTION**
> *Indicates when equipment damage is possible.*

**NOTE**
> *Emphasizes a point about a specific feature, function, or operation.*

**Insets**
These boxes may include a list of features or application functions, references to additional information, or a useful pilot's tip.

## Reference Websites

| WEBSITE | QR CODE (SCAN/GO) |
|---|---|
| **Aviation Limited Warranty**<br>https://www.garmin.com/en-US/legal/aviation-limited-warranty | |
| **Declarations of Conformity**<br>https://www.garmin.com/compliance | |

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# Table of Contents

# 1 System at a Glance

# Overview

GTR 205 and GNC 215 are panel-mount COM radio transceivers that employ a 3.2″ high-resolution color liquid-crystal display. They comprise the Slimline series of 1.35″ by 6.25″ COM radio products.

*GNC 215 shown as typical.*

Each unit has 10 W of transmit power. Optional 16 W of transmit power is available with the purchase of a feature enablement.

# Unit Configurations

*GTR 205*

**COM**

*GNC 215*

**COM/NAV**

# Unit Features

Features vary depending on model and unit configuration.

| GTR 205<br>COM TRANSCEIVER | GNC 215<br>NAV/COM TRANSCEIVER |
|---|---|
| • 8.33 kHz or 25 kHz channel spacing<br>• 16 W transmit power capability[1]<br>• Bearing and distance to NAVAID[2]<br>• Find frequency<br>• Flight timers<br>• NVIS[1]<br>• Remote COM radio frequency tuning[3]<br>• Reverse frequency look-up[2]<br>• System messages<br>• VHF radio transceiver | • 8.33 kHz or 25 kHz channel spacing<br>• 16 W transmit power capability[1]<br>• Bearing and distance to NAVAID[2]<br>• CDI<br>• Provide NAV frequency for DME tuning[3]<br>• Find frequency<br>• Flight timers<br>• NAV radio receiver<br>• NVIS[1]<br>• Remote COM/NAV radio frequency tuning[3]<br>• Reverse frequency look-up[2]<br>• System messages<br>• VHF radio transceiver |

[1] Optional. Requires feature enablement.
[2] Requires Navigation database and input from a GPS navigator for location-based information.
[3] Availability dependent upon aircraft interfaces.

# Pilot Interface

## Bezel

The bezel provides a combination of mechanical knobs and push-keys. Soft keys correspond to selectable features on the display screen.



**1  microSD Card Slot**
Interface for loading database, exporting log files, and updating software.

**2  Soft Keys**
Controls for navigating display pages and executing onscreen commands.

**3  Transfer (Flip-Flop) Key**
Swaps active and standby frequency values for the active radio.

**4  Menu Key**
Provides direct access to customization options and system information.

**5  Monitor Key**
Allows monitoring of the active frequency while listening to the standby frequency.

**6  Volume/Power Knob**
Allows audio volume adjustment for the active COM radio. COM squelch functionality is accessible via knob push. Turning the knob past the detent powers the unit on/off.

**7  Inner & Outer Knobs**
Multipurpose dual concentric knob allows data entry, list scrolling, frequency look-up, NAV ident, and NAV/COM direct tuning.

**8  Photocell**
Measures cockpit ambient light level to automatically adjust display brightness for day and night.

### Bezel Shortcuts

Pushing and holding either the volume knob or **Flip-Flop** key for 0.5 seconds automatically tunes the COM emergency frequency (121.50 MHz).

Pushing and holding the dual concentric knob for 0.5 seconds provides direct access to frequency search options.

Read more about these features in Section 3.

# microSD Card Slot

**NOTE**

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

### FEATURE LIMITATIONS

- *Use only microSD cards in the FAT32 format, with memory capacity between 8 GB and 32 GB*

The unit uses the microSD card slot for the following tasks.

- Capturing screen images
- Exporting data logs and configuration summary
- Updating the database
- Upgrading software

### Insert Card

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

### Eject 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 a microSD card if you plan to use the card as a media storage device for updating databases.

In the event there is a file corruption problem with the microSD card, it may be necessary to reformat the card. This can cause an issue when formatting the microSD card using macOS, where the newly formatted card will not be recognized by the avionics system. When using a Macintosh computer to format the microSD card, 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.

# Display Features

A high-resolution color LCD display provides onscreen controls that correspond to the mechanical knobs and push-keys on the bezel. Optional night vision capability (NVIS) is available with the purchase of a feature enablement.

## Soft Keys

Selections change based on the active page or function.

| COMMON COMMANDS | | | |
|---|---|---|---|
| **MSG** | Open the system messages list. A flashing icon indicates unread messages. | **Find COM** | Display COM frequency search options. |
| **Home** | Return to the home page. | **Back** | Return to the previous page. |
| **Cancel** | Cancel an active function without inputting data. | **Reset** | Reset timer. |
| **Start** | Start timer. | **Stop** | Stop timer. |
| **NAV VOL** | Adjust NAV radio volume.[1] | **Find NAV** | Display NAV frequency search options.[1] |
| **Edit** | Edit a selected user frequency. | **Direct CRS** | Set the manual CDI OBS selector on direct course to the VOR station.[1] |
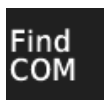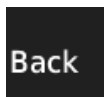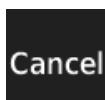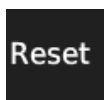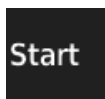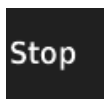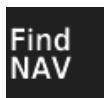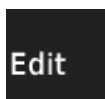
[1] GNC 215 only.

# Menu Tabs

Tabs group information and related controls into individual panes. Contents may include scrolling lists, data fields, function keys, or a combination of controls.

Tabs are located along the left side of the menu pane.



Inactive Tabs

Active Tab

Display

Setup

System

Messages

Backlight

Database

System Info

Active Menu Selection

Scroll Bar

# Pop-ups

Pop-ups present messages related to a function or setting that require confirmation.



Home

Back

**Delete all COM User Frequencies?**

Delete All     Cancel

Available Soft Key Commands

Selectable Options

Underlying Page Hidden

# Control Knobs



Outer    Inner
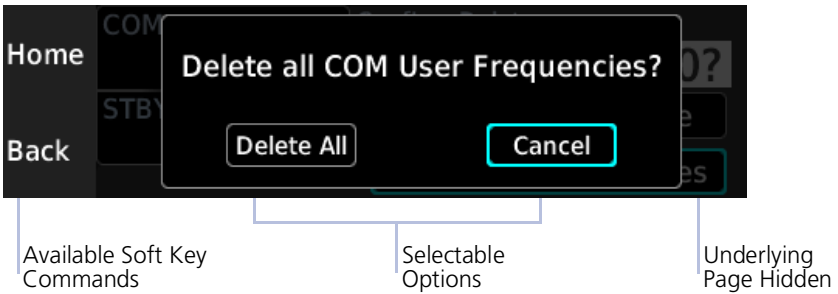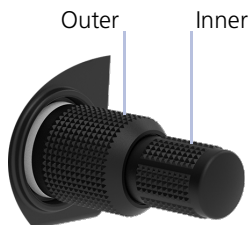


**Dual Concentric Knob**

Inner and outer control knobs offer the ability to select and modify data and settings.

**Volume/Power Knob**

A single volume knob controls audio volume for the COM radio and powers the unit on/off.

Pushing these knobs momentarily performs additional functions.

| VOLUME/POWER KNOB FUNCTIONS | |
| --- | --- |
| **Knob Turn** | • Adjusting COM radio volume<br>• Powering on/off the unit (turn past the detent) |
| **Knob Push** | • Enabling/disabling the COM automatic squelch function<br>• Tuning the emergency COM frequency (push & hold). |

| DUAL CONCENTRIC KNOB FUNCTIONS | |
| --- | --- |
| **Outer Knob Turn** | • Moving cursor forward or backward within data field<br>• Scrolling menu tabs<br>• Tuning major frequency digits |
| **Inner Knob Turn** | • Modifying individual characters in data entry field<br>• Scrolling lists<br>• Tuning minor frequency digits |
| **Knob Push** | • Entering current or specified numerical value<br>• Selecting a menu item<br>• Initiating frequency look-up options (push & hold)<br>• Enabling/disabling the ident tone for the NAV radio[1]<br>• Switching between COM, Timer/OBS, and NAV functions[2] |

[1] GNC 215 only. [2] OBS and NAV functions available with GNC 215 only.

# Knob Function Indicators

Available knob functions annunciate at the bottom of the display. Icons indicate the associated pilot actions: knob turn and/or push.

**Outer Knob Turn Only**

**Single or Inner Knob Turn & Push**

Indications include, but are not limited to:

### COM Standby Frequency Active, GTR 205

**COM VOL | Push SQ**       Freq

Available knob functions:

- Adjust COM radio volume
- Override automatic squelch

- Tune COM standby frequency
- Access frequency search options

### COM Standby Frequency Active, GNC 215

**COM VOL | Push SQ**       Freq Push NAV

Available knob functions:

- Adjust COM radio volume
- Override automatic squelch

- Tune active standby frequency
- Set knob focus to NAV standby frequency
- Access frequency search options

### Find Frequency Active

`Category ← Freq`

Available knob functions:

- Scroll search categories
- Select frequency
- Add user frequency

### Menu Active

`Tab ← Item`

Available knob functions:

- Scroll menu tabs
- Select list items

### NAV Volume Active[1]

`NAV VOL ← Push ID`

Available knob functions:

- Adjust NAV radio volume
- Activate NAV ident

### System Message List Active

`Scroll ←`

Available knob functions:

- Scroll message list

### Timer Active

`Timer Type ← Edit | Push COM`

Available soft key functions:

- Reset timer
- Start/Stop timer

Available knob functions:

- Select timer type
- Set countdown timer
- Set knob focus to COM/NAV standby frequency[1]
- Access frequency search options

[1] NAV radio options available with GNC 215 only.

## KNOB FOCUS INDICATIONS

A cyan border around the active feature window indicates changes in knob focus. This is useful when transitioning between different control modes.

| | |
|---|---|
| Find COM | COM **121.500** Active |
| | STBY MON **121.500** CNT UP 00:00:00 |

Text within the active window turns cyan to indicate that it is selectable.

Knob Focus Indicator
(COM STBY Selected)

Timer Function
Not Selected

# Knob Shortcuts

For convenience, the unit allows you to access certain controls quickly via knob push.

## TUNE A COM FREQUENCY

*From the Home page:*

Pushing the dual concentric knob once switches knob focus between the COM radio and right side features (if available). When knob focus is set to the COM radio (default), turn the inner and outer knobs to tune the COM standby frequency.



## TUNE THE COM EMERGENCY FREQUENCY

Pushing and holding the volume/squelch knob for 1.5 seconds automatically tunes the COM emergency frequency (121.50 MHz) from any page or tab. The frequency automatically loads to the COM standby window and then transfers to the active COM frequency.



*Prior to activation, the "Hold for 121.50" control label appears in the annunciator bar.*

# FIND A COM FREQUENCY

*From any page or tab:*

Pushing and holding the dual concentric control knob for 1.5 seconds automatically displays frequency search options. The Select Frequency menu opens from the last viewed search result.



*Prior to activation, the "Hold for Find" control label appears in the annunciator bar.*

Turn the outer knob to select a search category. Turn the inner knob to select a frequency, waypoint, or station.
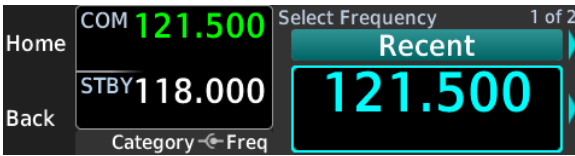


*COM volume and squelch controls remain available via the volume/power knob when a page is active.*

## TUNE OR FIND NAV FREQUENCY

**AVAILABLE WITH: GNC 215**

*From the Home page:*

Pushing the dual concentric knob once enables standby NAV frequency tuning. Turn the inner and outer knobs to tune the NAV standby frequency.



**Find a NAV Frequency**

With standby NAV frequency tuning enabled, push and hold the dual concentric knob for 1.5 seconds to display NAV frequency search options. Turn the outer and inner knobs to select a search category and frequency.

## ACTIVATE TIMER

*From the Home page:*

If enabled, pushing the dual concentric knob once activates the timer function. Turn the outer knob to toggle between timer types. Turn the inner and outer knobs to specify a countdown time. Push knob to enter value.

*GTR 205*

## SET AN OBS COURSE

**AVAILABLE WITH: GNC 215**

*From the Home page:*

If enabled, pushing the dual concentric knob once activates the OBS entry field. Turn the inner and outer knobs to set a course.

| COM | 121.500 | NAV ___°TO | 108.00 |
| STBY | 118.000 | VOR | OBS 360° |

COM VOL | Push SQ  OBS Adjust | Push NAV

**Three-way Toggle Indication**

Locater bars work in conjunction with the inner control knob, providing a quick indication of current knob focus as you transition between multiple functions (e.g., COM standby frequency tuning > CDI/Timer > NAV standby frequency tuning).

| Reset | COM | 121.500 | NAV | 108.00 |
| Start | STBY MON | 125.500 | CNT UP | 00:00:00 |

Timer Type Edit | Push NAV

A cyan locater bar indicates active function and knob focus.

Next Function | Active Function Locater

Pushing the inner knob moves the locater through the available functions. The COM standby frequency window is active by default.

**COM Active**

**Push CDI** 

Push to activate OBS/timer control.

**OBS/Timer Active**

**Push NAV** 

Push to activate NAV frequency control.

**NAV Active**

**Push COM** 

Push to activate COM frequency control.

# Screenshots

### *FEATURE REQUIREMENTS*

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

Save images to a microSD card at any time using Screenshot.

1. Verify that a microSD card is present in the slot.
2. Go to the page of interest.
3. Push and hold the **MON** key.
4. With the **MON** key depressed, push and release the top soft key.

A camera icon momentarily shows in the annunciator bar indicating that Screenshot was successful.

The image automatically saves to the *print* folder in the microSD card root directory.

To view saved images, remove the card and open the *print* folder on a computer.

For more about proper microSD card installation, read *microSD Card Slot*.

# Color Conventions

**Red**
- Radio failure

**Green**
- Active radio frequency, function
- Valid station ID (decoded from Morse code)
- VOR/localizer data

**White**
- Active system message, mode
- Current data and values
- Menu options
- Scales and markings
- Standby radio frequency (non-selected radio)
- Station ID (from database)

**Magenta**
- GPS data

**Cyan**
- Active selection, display feature (e.g., timer)
- Standby radio frequency

**Gray**
- Missing or expired data
- Product unavailable
- Inactive display feature

# Compatible Equipment

## Line Replaceable Units

| SYSTEM REQUIRED LRUs |
| --- |
| COM radio antenna |
| NAV radio antenna[1] |
| **OPTIONAL LRUs** |
| DME |
| G500/G600 |
| G500(H)/G600/G700 TXi |
| GFC 500/600(H) |
| GI 275 |
| GMX 200 |
| Garmin GPS navigator |
| MX20 |
| Non-Garmin Autopilot |

[1] GNC 215 only.

The system consists of multiple LRUs, which are installed behind the instrument panel or in a separate avionics bay. Their modular design aids system maintenance and unit replacement.

Optional LRUs may include compatible equipment from either Garmin or a third party manufacturer. These vary by unit and installation type (VFR or IFR).

Some LRUs provide features that require registration and/or enablement prior to activation.

Compatible LRUs are not limited to the devices shown here. Check unit software version for compatibility.

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# 2  Get Started

# Power Up the Unit

The unit receives power directly from the aircraft's electrical system. Upon power-up:

- Bezel key backlight momentarily illuminates
- Navigation database automatically updates if a newer version is available

*Splash Page*



*Garmin logo displays as the unit checks for an available database update.*

Read more about database update methods in *Load Database*.

# Power Off the Unit

⚠ **WARNING**

***Never attempt to power off the unit while airborne unless operational procedures dictate.***
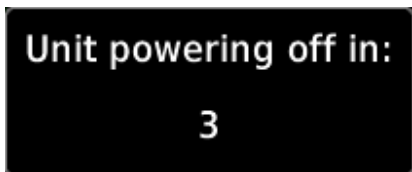


Turning the **Volume/Power** knob past the detent for 0.5 seconds initiates the power off sequence.

Shutdown occurs once the timer reaches zero.

# Load Database

## Supported Database

This system uses the Navigation database for frequency related information (Garmin or Jeppesen).

Databases are stored in the unit's internal memory. To view update cycles, or to purchase individual databases or database packages, go to flyGarmin.com.

# Active and Standby Databases

The unit uses two types of databases. Both transfer to the unit's internal storage.

| Active Database | Standby Database |
| --- | --- |
| • Database currently in use by the system | • Database that has not reached the effective date<br>• Database that was installed prior to the last update |

To view active and standby databases once they are installed, read *View Database Information*.

## DATABASE TRANSFER & ACTIVATION

The Navigation database automatically transfers from the microSD card to the unit's internal Standby storage if it is newer than the database currently in standby. Total transfer time depends on the microSD card type.

Activation of the standby database is required to complete the update. The manner in which this occurs depends on whether or not a GPS source is present.

| If | Then |
|---|---|
| The unit is configured to receive GPS data | The database automatically updates at the next unit power cycle once the database reaches its effective date and the existing database expires. |
| A GPS source is absent | The database automatically updates at the next unit power cycle |

**Installations Equipped with a GPS Source**

In some cases, automatic database updates may occur in two steps:

1. The database transfers to the internal Standby storage but is deemed not yet effective. At this point, the pilot may remove the card. The database will remain in standby until the effectivity date is reached and automatic activation can occur.
2. The unit automatically activates the standby database based on current date and database effectivity.

The unit determines effectivity status using the current date and time from the configured GPS source (if present). Read more about database effective status in *Understand Database Effective Cycles*.

# Load Database from a microSD Card

**NOTE**

*The unit supports microSD cards in the FAT32 format only, with capacities ranging between 8 GB and 32 GB.*

The unit stores all databases it receives in its internal storage. After a database updates, the microSD card is no longer required.

Do not attempt to load or update the database while in flight (on ground only).

**Install or update a database using a micro SD card:**

1. Download a database onto a microSD card.
2. Insert the card with the most recent database into the card slot.
3. Power on the unit.

Once loading completes, you may power off the unit and remove the card.

A unit restart is required to complete installation.

The available database is indicated in the Standby tab.

# Automatic Updates

### Automatic updates occur when:

- A newer database is detected on the microSD card or in the internal Standby storage
- A newer database is within its effective dates[1]

[1] Applicable only if a GPS source is present.

Updates occur during power up when a newer version of the database is available. The same process occurs when you load a new database for the first time.

# Manual Updates
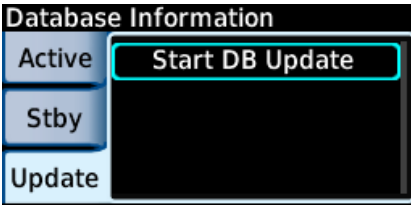


You can access the Update tab at any time for review purposes or to perform a manual database transfer.

**MENU** > **System** > **Database** > **Update** > **Start DB Update**



The unit automatically restarts once the update is complete.

# Database Errors

Database Information
Active  ◆ Navigation
        Eff Date:  03-NOV-22
Stby    Exp Date   01-DEC-22
        Database signature
Update    verification failed

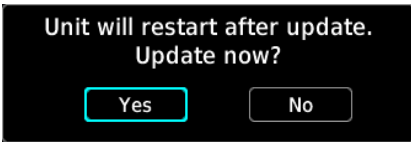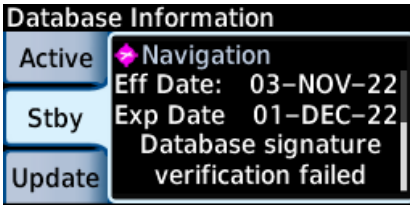If a database error occurs:

- An advisory appears in the message list
- Details regarding the state of the database display on the appropriate information tab

### Aviation Database Errors

Visit flyGarmin.com to report any discrepancies in database information. These may include incorrect procedures, inaccurate depictions of terrain, obstacles and fixes, or errors with any other screen element used for navigation or communication purposes.

For information regarding third-party navigation databases, go to jeppesen.com.

# Revert to Previous Database Version

Updating a database does not overwrite its previous version. Once the update process completes, the previously active version of the database transfers to the unit's internal Standby storage. In the event that an automatic update is undesirable, you can revert to the previous version using the manual update feature.



*Source field displays "Internal" for the previous database version.*

The previous database version appears in the Standby tab. It remains available for manual install until a newer version transfers to the unit's internal Standby storage.

**To revert to a previous database version:**

1. Ensure that the card slot is empty.
2. Verify that the previous database version is in standby (**Menu** > **System** > **Database** > **Standby**).
3. Open the Update tab.
4. Select **Start DB Update**.

The unit restores the previous database version and transfers the newer database to the standby storage. The unit automatically restarts once the swap is complete.

# View Database Information

**WHERE TO FIND IT**

Menu
- System
  - Database
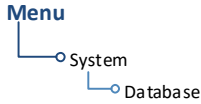
During normal operation, you can view information about active and standby databases from the Database Information page.

**MENU** > **System** > **Database**

Select the appropriate menu tab to view information about active and standby databases.

## Active Database

Selecting **Active** displays information about the database version currently in use.

### ACTIVE DATABASE CORRUPT
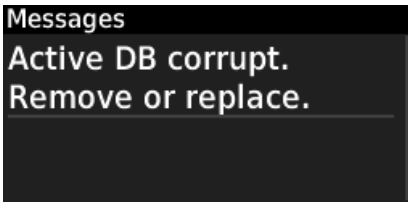
A message informs you when the active database is corrupt and requires removal or replacement.

**Active Database Info**

- Database name
- Cycle number
- Region
- Effective & expiration dates
- Copyright information

# Standby Database



*"Standby database OK" appears at the bottom of the Standby tab whenever a valid database is present on the installed microSD card or in the internal memory.*

Selecting **Standby** displays information about the database that is not currently in use by the system.

The previously installed database also appears here once an update completes.

## DATABASE AVAILABLE ON CARD

The Standby tab informs you when a valid database is available on the installed microSD card.



Check the Source field for the current location of the standby database: "Card" or "Internal."
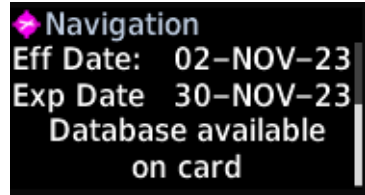


Scroll to the bottom of the tab to see if a standby database is available.

**To view and update the database from the internal standby:**

1. Ensure that the card slot is empty.
2. Verify that a valid database version is in standby (**Menu** > **System** > **Database** > **Standby**).
3. Open the Update tab.
4. Select **Start DB Update**.

### Standby Database Info

- Database name
- Source (e.g., Internal)
- Cycle
- Region
- Effective & expiration dates
- Status

# Understand Database Effective Cycles

| DATABASE EFFECTIVE STATUS | |
|---|---|
| **Database with specified effective dates** | • Effective during a specific period<br>• Unit determines database status using the current date and time from GPS<br>• Automatic activation occurs on the effective date during unit power cycle |

## NO VALID DATABASE
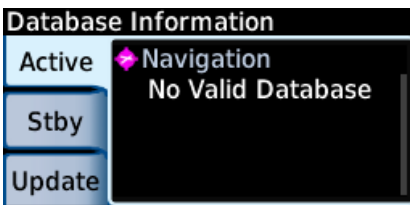


A message informs you when no valid database is available.

When the Navigation database is absent, the radio is still usable but with reduced functionality. Lost features include:

- Waypoint names
- GPS-based distance to station
- Frequency lookup for tuning

### Overwriting microSD Card Database Files

When database files are loaded to the microSD card, any previously loaded database files of the same type residing on the card are overwritten. This includes loading a database of a different coverage area or data cycle than that currently residing on the microSD card.

# Customize Pilot Settings



Unit customization options are accessible via the **MENU** key. For details about specific radio settings and timer functions, refer to the respective section.

| MENU SELECTIONS | |
|---|---|
| **Display Tab** | • Enable flight timer<br>• Return to basic display format[1]<br>• Enable CDI option[2] |
| **Setup Tab** | • Set the display units<br>• Access COM radio settings |
| **System Tab** | • Adjust display brightness<br>• Access database information and update/sync options<br>• View system messages<br>• View system information and COM status |

[1] GTR 205 only. [2] GNC 215 only. CDI and flight timer functions are mutually exclusive; enabling one automatically disables the other.

# Customize Display Layout

**AVAILABLE WITH: GNC 215**

Choose any combination of features for display in the active and/or standby areas of the NAV radio. Options are accessible from the Display tab (**MENU** > **Display**).

*Knob focus is set to Off by default.*

To enable a display feature, select it from the menu. Features that require pilot interaction are active by default (e.g., timer).

Re-open the Display tab to choose a feature for the other area.

| AREA | AVAILABLE DISPLAY FEATURES | |
|---|---|---|
| **VOR Info** | • To | • Off |
| | • From | |
| **Standby** | • CDI[1] | • TMR |
| | • STBY (with Reverse Frequency Look-up) | |

[1] Availability dependent upon configuration.

| **To** | **From** |
|---|---|
| NAV **ID** 117.40<br>183° TO<br>26.6 NM    UBG<br>STBY 115.40<br>CVO VOR | NAV **ID** 117.40<br>003° FR<br>26.6 NM    UBG<br>STBY 115.40<br>CVO VOR |
| Adds decoded "to" bearing information to the active NAV frequency. | Adds decoded "from" radial information to the active NAV frequency. |

"To" and "from" information includes distance to station when an internal database and GPS source are present.

| **TMR** | **CDI** |
|---|---|
| KSLE<br>TOWER<br>CNT UP    00:00:00 | NAV **ID** 117.40<br>183° TO<br>26.6 NM    UBG<br>○  ○  \| ▲○  ○<br>VOR    OBS 180° |
| Adds an active timer to the lower right of the display. Use the outer knob to select timer type or select **Start**. Select **Reset** to stop and clear the timer. | Replaces NAV STBY window with a CDI scale. COM radio is active by default when the frequency is a LOC/ILS or a VOR with decoded OBS heading. OBS field is active when manual entry is required. |

# Customize Unit Settings

**WHERE TO FIND IT**
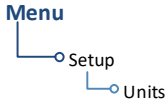
**Menu**
   └─○ Setup
         └─○ Units

Customize the display unit settings. Selecting **Units** opens a menu of available unit types.

**MENU** > **Setup** > **Units**

| Units | |
|---|---|
| Distance | **Nautical Miles** › |
| NAV Angle | **Magnetic** |
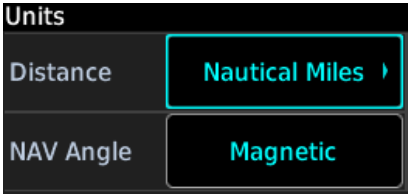
To specify unit type:

1. Review the current unit selections.
2. Select a parameter using the outer control knob.
3. Select a unit type using the inner control knob.

| PARAMETER | UNIT SETTINGS | |
|---|---|---|
| **Distance** | • Nautical Miles (NM/kt) <br> • Statute Miles (sm/mph) | • Kilometers (km/kph) |
| **NAV Angle** | • Magnetic (°) | • True (°T) |

# Adjust Display Brightness

**WHERE TO FIND IT**

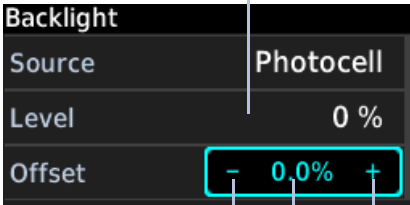Menu
└─○ System
     └─○ Backlight
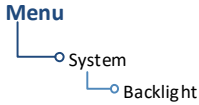
Depending on configuration, display brightness is controlled using inputs from the built in photocell, aircraft dimmer bus, or both.

## Automatic Brightness Control

Dimming is limited to prevent on-screen indications from becoming unreadable. The built-in photocell automatically controls display brightness based on ambient light levels.

Backlight Intensity Level

| Backlight | |
|---|---|
| Source | Photocell |
| Level | 0 % |
| Offset | – 0.0% + |

Decrease Backlight            Increase Backlight

Manual Offset Indicator

During automatic control, you may still adjust brightness using the manual offset controls in the Backlight page.

The unit retains manual offset settings over power cycles.

## Manual Brightness Control

Optionally, the unit is configurable to use an aircraft dimming bus for display brightness control. Upon reaching minimum input level, display brightness reverts to the photocell. This prevents the display from going black in the event of a dimmer input failure.

Installer configured curves determine the amount of change in brightness that occurs in response to a control adjustment. If brightness control is not satisfactory, contact a Garmin dealer to adjust the lighting curves.

# View System Information

**WHERE TO FIND IT**

View information specific to the unit and its software.

**Menu**
└─○ System
      └─○ System Info
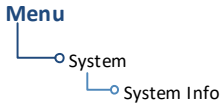
| System Info | |
|---|---|
| Serial Number | 000000000 |
| System ID | E7900ABC12345 |
| SW Version | 2.10 |

Refer here when contacting customer service.

### System Info

- Serial number
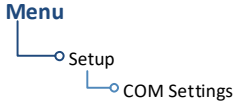- System ID
- Main software version

INTENTIONALLY LEFT BLANK

# 3 COM

# Set Up COM Radio

**WHERE TO FIND IT**

**Menu**
└─○ Setup
     └─○ COM Settings

VHF COM radio customization options are accessible via the Setup tab.

**MENU** > **Setup** > **COM Settings**

| COM RADIO SETTINGS | |
|---|---|
| **COM Squelch** | Set transceiver squelch to Auto or adjust the threshold manually. |
| **COM Spacing** | Set transceiver channel spacing. Options: • 8.33 kHz • 25 kHz (default) |
| **Sidetone Volume** | Enable offset adjustments from the COM receiver volume. Options: • Fixed+Offset • Link to COM |
| **Sidetone Offset** | Adjust sidetone volume offset. Default setting: 0% |

# Set COM Channel Spacing

The unit supports channel tuning for both 8.33 kHz and 25 kHz channels within radio-frequency range. Channel spacing is set to 25.0 kHz by default.

**COM Spacing     25 kHz**

Turning the inner knob toggles the transceiver channel spacing between 8.33 kHz and 25.0 kHz.

| **8.33 kHz** | **25.0 kHz** |
|---|---|
| ‹ **8.33 kHz** | **25 kHz** › |
| 8.33 kHz step configuration is available for European operations. | COM radio operates in the aviation voice band, between 118.000 and 136.975 MHz, in 25.0 kHz steps. |

If flying in a region where 8.33 kHz channel spacing is available, set the COM radio to 8.33 kHz to prevent the loss of any stored or recently used frequencies.

# Adjust Sidetone Volume Offset

***FEATURE LIMITATIONS***

- *Availability dependent upon configuration*
- *Offset range: +/-25% of total COM audio volume range*

Numeric
Offset Value

Sidetone Offset   0%

Manual Offset
Indicator
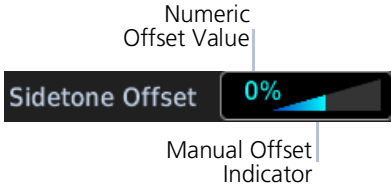
If the unit is wired for audio output, set the sidetone volume offset to the preferred level. By default, the offset value is set to zero percent.

The unit retains manual offset settings over power cycles.

COM sidetone is audio spoken into the microphone that is played back in real time over the headset. The offset setting determines sidetone volume for the COM during radio transmission. Adjustments determine the amount that the sidetone volume level is offset from the COM receiver volume or the configured sidetone volume.

## Link To COM Volume

Sidetone Volume  ‹Link to COM
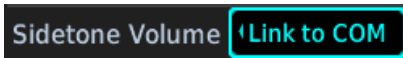
Enabling this function allows you to adjust the amount that the sidetone volume level is offset from the COM receiver volume. These adjustments are dynamic in that they vary with the COM receiver volume level.

To adjust the offset from the COM receiver volume:

1. Enable **Link to COM**.
2. Adjust the offset as necessary.

To adjust the offset from the configured sidetone volume, disable the Link to COM function by selecting **Fixed+Offset** and then adjust the offset as necessary. These adjustments are fixed as they are relative to the configured sidetone volume.

# Adjust COM Radio Volume & Squelch

Percent of Max Volume | Relative Volume Indicator
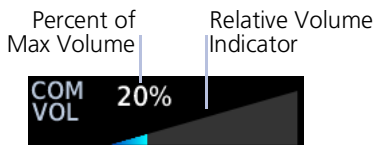


Adjust radio volume with the small knob according to your preference.

The unit retains volume settings over power cycles.
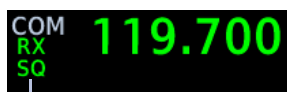
# Open Squelch



Squelch Open Indication

Push the volume/squelch knob to override the automatic squelch function. Push it again to return the squelch to automatic operation.

"SQ" annunciates in the COM active frequency window to show when the squelch is overridden (i.e., when the squelch is open).

The automatic squelch function rejects many localized noise sources. Overriding this function may be helpful when listening to a distant station or setting the volume level.

### Volume/Squelch Knob Adjustments
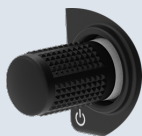


Pushing the volume knob disables automatic squelch control. Turning the knob adjusts the COM volume percentage.

# Tune a COM Frequency

Communication frequencies are split between two selectable windows:

- The upper window presents the active COM radio frequency. This is the frequency currently in use for transmit and receive operations.

- The lower window presents the standby radio frequency. This frequency may be set and activated at any time.
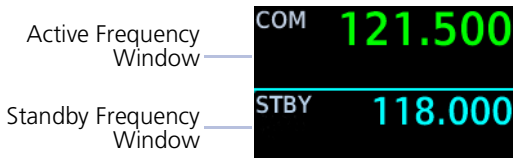
Active Frequency Window — COM **121.500**

Standby Frequency Window — STBY **118.000**

## COM STATUS INDICATIONS

Status annunciations denote active functions, modes, and frequency types.

Receiving Transmission

Transmitting

Automatic Squelch Overridden

COM RX SQ **119.700** KPSP TWR

COM TX **119.700** KPSP TWR

STBY MON **124.650** KPSP ATIS+

Frequency Look-up Result

Monitor Mode Active
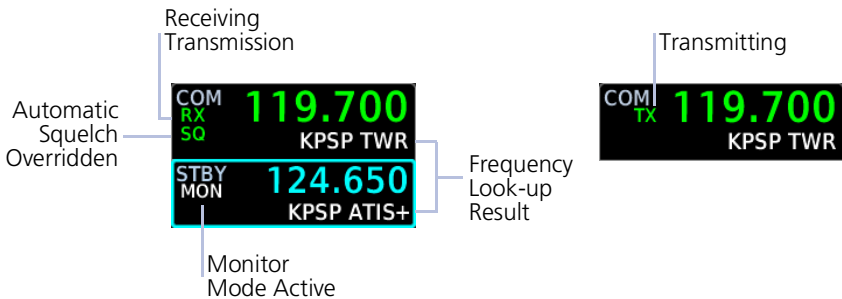
| | |
|---|---|
| **RX** | Receiving transmission |
| **TX** | Transmitting |
| **SQ** | Automatic squelch is overridden (i.e., squelch is open) |
| **MON** | Monitor mode active |
| **MON** | Standby frequency is receiving |
| **KPSP ATIS+** | Reverse frequency look-up information (sample text) |

# Tune a Standby Frequency

The dual concentric control knob allows you to enter a standby frequency. Pushing and holding the dual concentric control knob for 0.5 seconds automatically displays frequency search options.

The selected STBY window turns cyan when you use the control knob to change the standby COM frequency.

If no action occurs, the STBY window reverts to cyan text after 3 seconds. This indicates that the standby COM frequency is still adjustable using the control knob.
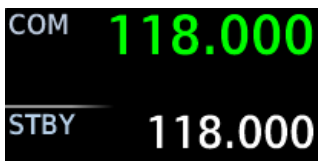
When the STBY COM frequency is no longer selected, it reverts to white text.

# Transfer Frequency to Active (Flip-Flop)

The transfer (or *flip-flop*) function allows you to swap the active and standby frequency values.

**Before**

COM **121.500**

STBY **119.000**

**After**

COM **119.000**

STBY **121.500**

# Monitor a COM Frequency

**MON**

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)

COM **119.700**
KPSP TWR

ATIS Broadcast
(Standby Frequency)

Monitor Mode
Active Annunciation

STBY MON **124.650**
KPSP ATIS+

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.

# Find a COM Frequency

Find and select a standby COM frequency from a list of available database frequencies.

Pushing the **Find COM** soft key while the COM radio is active provides access to multiple search options. Each category displays a list of selectable identifiers based on specific criteria.

*FEATURE REQUIREMENTS*

- *GPS source for Nearest waypoint search options*

*FEATURE LIMITATIONS*

- *Database search option available only when Navigation database is present*

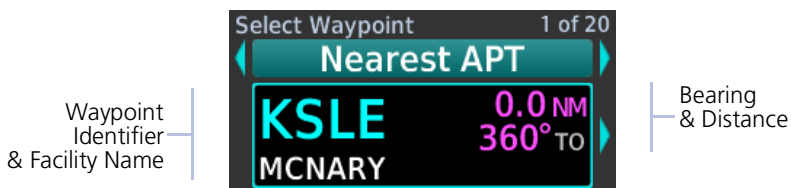| FREQUENCY SEARCH OPTIONS | |
|---|---|
| **Recent** | Lists up to 20 of the most recently tuned frequencies. |
| **User** | Lists up to 20 user-defined frequencies. |
| **Database** | Lists the frequencies associated with the specified 5-character facility identifier. |
| **Nearest Airport** | Lists up to 20 airport frequencies within a 200 NM radius. |
| **Nearest ARTCC** | Lists up to 20 area control center frequencies within a 200 NM radius. |
| **Nearest FSS** | Lists up to 20 flight service center frequencies within a 200 NM radius. |
| **Nearest WX** | Lists up to 20 weather frequencies within a 200 NM radius. |

## Find Frequency via Control Knob
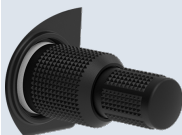
Pushing and holding the dual concentric control knob for 0.5 seconds automatically displays frequency search options from any page or tab.

- "Hold for Find" control label appears in the annunciator bar
- Select Frequency menu opens from the last viewed search result

## SEARCH RESULTS

Each frequency includes general information about the associated waypoint.

Waypoint
Identifier
& Facility Name

Bearing
& Distance

*Nearest airports include bearing and distance to field information based on GPS data.*

## MULTIPLE FREQUENCIES
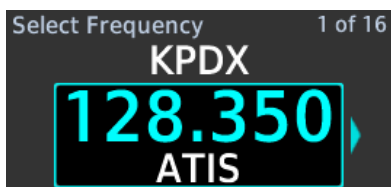
A selector appears when more than one frequency type is available at the indicated identifier.

Applicable to search options displaying information only (ARTCC, FSS, and Nearest Airports).

Frequency Selector

## FREQUENCY SEARCH ERRORS

Search errors may display if any one of the following conditions exist.

**Nearest Frequency Search Options**
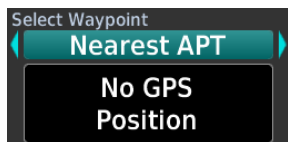
The unit is configured for GPS but is not receiving a position.

The unit is configured for GPS but no database is present.

**Database Search Option**

No database is present.

# Reverse Frequency Look-up



This function automatically displays the facility identifier and frequency type for active and standby frequencies. The unit verifies the displayed frequency against the database at least once per minute.
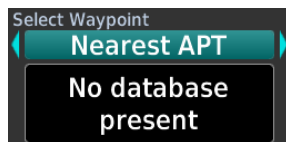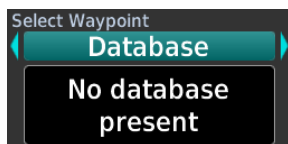
Facility
Identifier

**KPSP ATIS+**
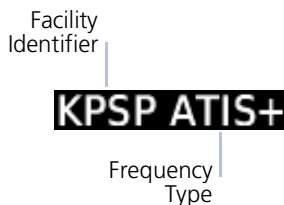
Frequency
Type

"+" denotes more than one type associated with the frequency.

Reverse frequency look-up results are based on GPS position and database information. If no GPS navigator is present in the system, reverse frequency look-up text will only appear if the frequency was recently loaded via the Find function.

**When Reverse Frequency Look-up is active, COM displays:**

• Nearest facility identifier (if available)
• Multiple facility indication (if more than one)
• Frequency type
• Approach or Departure indications (if applicable)

When flying between airports that use the same frequency, it may take up to 2 minutes for look-up information to change after crossing the halfway point.

## DATA SIZE & POSITION

The size and location of Reverse Frequency Look-up text is dependent upon the status of right side features.

*Default View*



Text is larger for easier viewing.

*Timer Enabled*



Text shifts beneath the frequency value when you enable right side features.

## DATA SOURCE PRIORITY

RFL information is received from the following sources in order of priority, from highest (1) to lowest (3), and dependent upon certain required conditions.

| | SOURCE | REQUIRED CONDITIONS |
|---|---|---|
| 1 | Proximity search of database | Navigation database and GPS are present. |
| 2 | Recent database selection | Navigation database present; no GPS. |
| 3 | User frequency list | No required conditions. |

# Remote Frequency Selection

***FEATURE LIMITATIONS***

- *Availability dependent upon configuration*

On units configured for remote frequency recall, COM user frequencies are selectable via a remote switch.

- Pressing the switch once loads the next user frequency into the STBY window
- Pressing the switch repeatedly scrolls through the list of presets
- Some installations may have two dedicated recall switches: one to scroll up, one to scroll down
- Selections do not activate until transfered to active

# Emergency Frequency Selection

Pushing and holding either the volume knob or **Flip-Flop** key for 0.5 seconds provides a quick method for remotely tuning the emergency frequency (121.50 MHz). This feature is available any time the unit is on, regardless of GPS or display status.

## Volume/Squelch Knob Shortcut
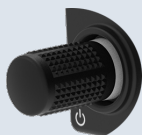
Pushing and holding the volume knob for 0.5 seconds automatically tunes the COM emergency frequency (121.50 MHz).

- "Hold for 121.50" control label appears in the annunciator bar
- Frequency automatically loads to the COM standby window and then transfers to the active COM frequency

Hold for 121.50

# Create COM User Frequencies

*FEATURE LIMITATIONS*

- *Names may be up to 10 characters in length*
- *Maximum number of 20 user frequencies*

Add a frequency to the user frequency list. Controls are accessible via the Select Frequency menu.
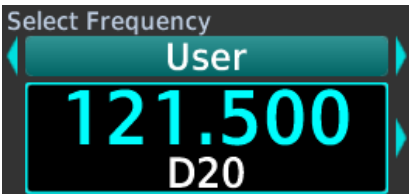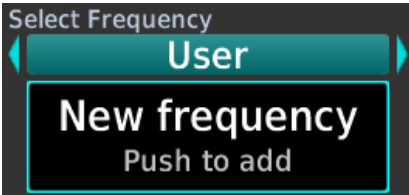
1. Open the Select Frequency menu.
2. Scroll to the User category.
3. Push the inner control knob to add a new frequency.
4. Specify a frequency value.
5. Assign the frequency a unique identifier.
6. Select **Save**.

To cancel the request and close without saving, select **Cancel**.

User frequencies remain in the list until you delete them.

# Edit a COM User Frequency

**Edit**

Modify an existing user frequency. Selecting a user frequency gives you the EDIT option.

**Edit User Frequency**

121.500

D20

Save    Delete

1. Select the user frequency from the list.
2. Push the **Edit** soft key.
3. Modify the current frequency name and/or value using the dual concentric knob.
4. Select **Save**.

# Delete a COM User Frequency
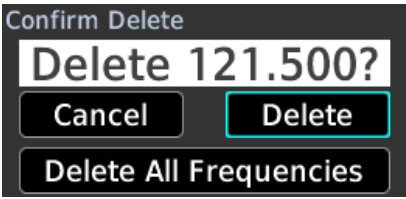
Selecting **Delete** opens a confirmation page. From here you can delete the selected user frequency or all user frequencies in the list.

Confirm the request to remove the selected user frequency from the list.

Selecting **Delete All Frequencies** opens a pop-up. Confirming the request removes all COM user frequencies from the list.
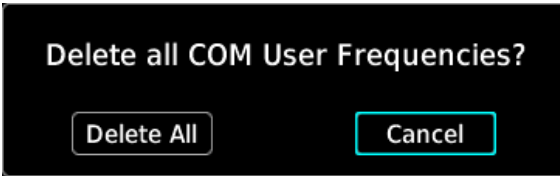
### DELETE A COM USER FREQUENCY

1. Select a COM user frequency from the list.
2. Push the **EDIT** soft key.
3. Select **Delete**.

From here you may:

- *Confirm deletion of the selected user frequency:* Select **Delete**.
- *Delete all COM user frequencies:* Select **Delete All Frequencies** > **Delete All**.
- *Cancel the request:* Select **Cancel**.

# View COM Status
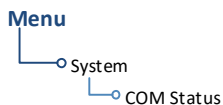
View COM radio transmit voltage and received noise. This information is accessible via the System tab.

**MENU** > **System** > **COM Status**

| COM Status | |
|---|---|
| RX Noise | 0 |
| TX Power | 10 W |

This page is for reference only. Information includes:

- Receiver noise
- Transmit power

# Respond to a COM Alert



Radio failures are indicated by one or more of the following:

- Red "X" displays over the COM radio control
- Advisory message alerts
- COM control options are not available

COM radio fail annunciations are designed to be immediately recognizable.

For information regarding pilot response to a COM radio failure, consult the AFMS.

# Stuck Microphone

The COM transmitter automatically times out after 30 seconds of continuous broadcasting. This may occur when:

- Push-to-talk key on the microphone is stuck or accidentally left in the keyed position
- Push-to-talk function continues to transmit after releasing the key

The advisory message "COM MIC <1/2> key is stuck" alerts for as long as the condition exists.

# 4 NAV

# Adjust NAV Radio Volume

NAV
VOL

Pushing the **NAV VOL** soft key while the NAV or COM radio is selected provides access to volume controls. Adjust radio volume with the inner and outer control knobs according to your preference.

Percent of Max Volume     Relative Volume Indicator

NAV 108.00

NAV VOL 50%

NAV VOL ← Push ID
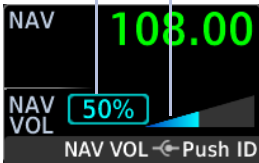
You can adjust the volume by increments of ten (outer control knob) or one (inner control knob).

# Activate NAV IDENT

NAV ID 108.00
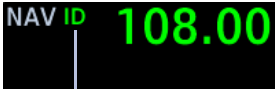
IDENT Active Indication

Activate the NAV IDENT function by pushing the **NAV VOL** soft key then the inner control knob.

- "ID" annunciates in the active NAV frequency window
- Morse code tones are audible

# Tune a NAV Frequency

Navigation frequency tuning, transfer, and selection functions are identical to those used for communication frequencies.

## NAV STATUS INDICATIONS

Frequency Identifier from Morse Code

NAV ID 183° TO 26.6 NM 117.40 UBG

STBY 115.40 CVO VOR

Frequency Identifier Based on GPS Position

The unit automatically decodes Morse code and displays the Ident for the active frequency above it.

The reverse frequency look-up identifier displays below the frequency value. Reverse frequency look-up results are based on GPS position and database information. If no GPS navigator is present in the system, reverse frequency look-up text will only appear if the frequency was recently loaded via the Find function.

Identifier information received via Morse code has display priority over reverse frequency look-up results.

**Received from Database & GPS**

**Received from Morse Code**

Station information appears white when the identifier is inferred from the database and current location.

The identifier turns green when a valid ID is decoded from Morse code.

**Custom User NAV Frequencies**
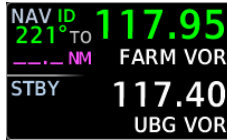
User stored NAV frequencies may display in the absence of a remote source or internal database. These custom user NAV frequencies receive the "FARM VOR" identifier.

## STANDBY NAV FREQUENCY ENTRY

Active NAV
Frequency

**NAV ID** 108.00

**STBY** 108.00

Standby NAV
Frequency
(Selected)
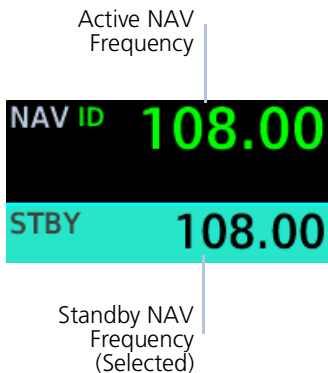
To change the standby NAV frequency:

1. Activate the standby NAV frequency window by selecting **Home**, then pushing the dual concentric control knob once or twice depending on pilot settings. Upon selection, the standby NAV frequency window remains active for approximately 30 seconds.

2. Enter a standby frequency by turning the inner and outer control knobs.

3. Assign the standby value as the active frequency by pushing the **Flip-Flop** key.

### Navigation frequencies include:

- Glideslope (ILS)
- Localizer (LOC)
- VOR

# Monitor a NAV Frequency

**MON**

Pushing the **MON** key while the NAV standby frequency is selected allows you to listen to the standby frequency while the unit continues monitoring the active NAV channel.

Morse ID
Unavailable

NAV I̶D̶ 117.40
341°TO
26.6 NM    UBG VOR
STBY 115.40
009°FR
CVO VOR
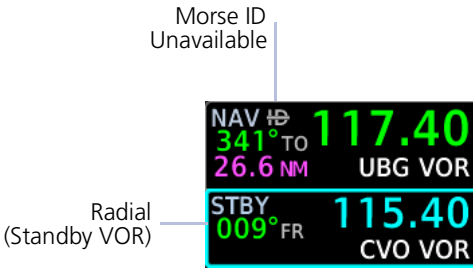
Radial
(Standby VOR)

During monitor mode:

- A gray "ID" with strike-through indicates that Morse ID is unavailable on the active frequency
- The current radial of the standby VOR station appears next to the standby frequency

# Find a NAV Frequency

Find and select a standby NAV frequency from a list of available database frequencies.

Pushing the **Find NAV** soft key while the NAV radio is selected provides access to multiple search options. Each category displays a list of selectable identifiers based on specific criteria.

*FEATURE REQUIREMENTS*

- *GPS source for Nearest waypoint search options*

*FEATURE LIMITATIONS*

- *Database search option available only when Navigation database is present*

| FREQUENCY SEARCH OPTIONS | |
|---|---|
| **Recent** | Lists up to 20 of the most recently tuned frequencies. |
| **User** | Lists up to 20 user-defined frequencies. |
| **Database** | Lists the frequencies associated with the specified 5-character facility identifier. |
| **Nearest VOR** | Lists up to 20 VOR frequencies within a 200 NM radius when interfaced with a GPS receiver. |
| **Nearest LOC** | Lists up to 20 localizer frequencies within a 200 NM radius when interfaced with a GPS receiver. |

Magenta bearing info displayed for the purpose of Find NAV is based on GPS and the Navigation database, not the VHF NAV function. For more about data color indications, read *Color Conventions*.

## FREQUENCY SEARCH ERRORS

Search errors may display if any one of the following conditions exist.

### Nearest Frequency Search Options
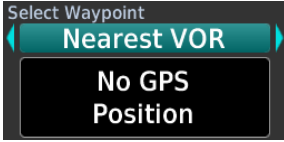
The unit is configured for GPS but is not receiving a position.
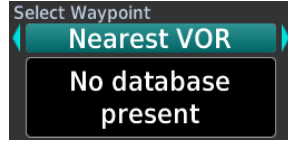
The unit is configured for GPS but no database is present.

### Database Search Option

No database is present.

# View Navigation Data

## Navigation data include:

- Decoded From radial and To bearing
- Distance to station
- Lateral deviation and to/from indication on a CDI scale
- OBS course heading

Depending on configuration, you may view supplemental navigation data in the active and standby areas of the NAV radio.

Data options are selectable from the Display tab (**MENU** > **Display**).

Read more about data display options in *Customize Display Layout*.

## NOTE

*Information provided by the onscreen CDI is for backup purposes only. Do not use for primary navigation.*

### FEATURE LIMITATIONS

- *Data availability dependent upon configuration*
- *OBS heading course data not available when the system is configured with a composite external indicator*

# VOR Info & Distance Data

### To/From/Off

When enabled, the "from" (FR) radial or "to" (TO) bearing decoded from the active NAV frequency.

### Distance to Station

Distance to station appears for VORs only (not for LOC/ILS) if an internal database is present and the unit is receiving GPS position.

# CDI

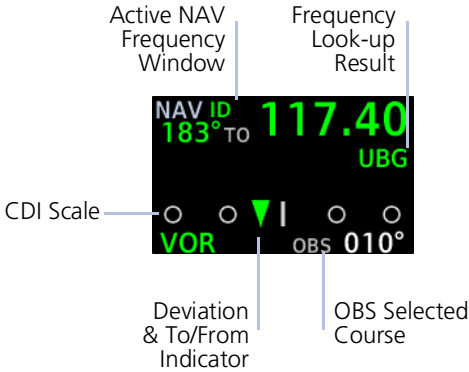When enabled, a CDI replaces the NAV STBY window. It appears between the active and standby windows when you are actively monitoring the NAV standby frequency.

Active NAV
Frequency
Window

Frequency
Look-up
Result

CDI Scale

NAV ID
183°TO 117.40
UBG

O    O    ▼ |    O    O
VOR          OBS 010°

Deviation
& To/From
Indicator

OBS Selected
Course

The CDI presents a sliding lateral deviation indicator on a horizontal scale.

A pointer moves left or right to portray aircraft position relative to the selected course. Pointer direction indicates the current leg type: To (up) From (down).

An OBS selected course field accompanies the CDI scale. Manual course adjustments are not available while receiving selected course input from the external CDI/HSI.

STBY window replaces the CDI when you tune the standby NAV frequency. The CDI is absent when course deviation data are invalid.

Each circle on the CDI scale represents 5 degrees deflection with 11 degrees full deflection to each side. Fly toward the center bar to be on-course.

## TO/FROM LEGS ON THE CDI

These legs are depicted as an upright or inverted triangle based on CDI data.

**"To" Legs**

O    O    | ▲ O    O

- Upward pointing indicator indicates "to"
- Distance to station decreases as you navigate the leg

**"From" Legs**

O    O    ▼ |    O    O

- Downward pointing indicator indicates "from"
- Distance to station increases as you navigate the leg

# Specify an OBS Course

The unit allows manual entry of the OBS selected course in the absence of an external CDI/HSI selected course input.
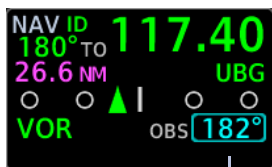


OBS Entry Field Active

Specify a selected course using the dual concentric knob.

Exit entry mode by doing one of the following:

- Push the dual concentric knob.
- Allow entry mode to expire.

Entry mode expires after approximately 30 seconds of inactivity. The unit retains the bearing setting until you enter a new one.

## DIRECT COURSE OPTION



Selecting the **Direct CRS** soft key while the OBS entry field is active sets the OBS on a direct course to the VOR station based on the current bearing.

## OFF SCALE INDICATION

Deviation & To/From Indicator Off Scale



Off Scale Indication
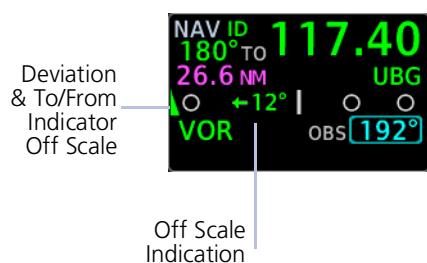
An arrow and value display when the deviation & to/from indicator exceeds 11 degrees. The indicator parks on the side nearest to its actual position (a partial indicator is visible at the left or right of the display).

## OBS SOURCE LOST
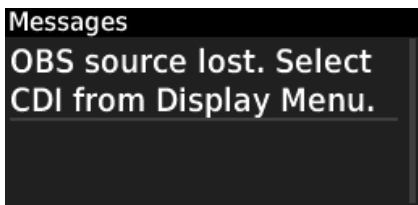


A message informs you when GNC 215 loses selected course input from the external NAV indicator. When this occurs, you may select OBS.

# Respond to a NAV Alert

Radio failures are indicated by one or more of the following:

- Red "X" displays over the NAV radio control
- Advisory message alerts
- NAV control options are not available

NAV radio fail annunciations are designed to be immediately recognizable.

Use an alternate method of navigation in response to a NAV radio failure.

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# 5   Timers

# Enable & View Timers

Set a generic timer for general timing needs. Two stopwatch style counters allow you to count up or count down.

**WHERE TO FIND IT**

Enable timers by selecting the Timer function on the Display tab.

**MENU** > **Display** > **Timer**

# Activate Timer

| TIMER TYPE ANNUNCIATIONS | |
|---|---|
| CNT UP | Count up timer |
| CNT DN | Countdown timer |

Once enabled, timer appears to the right of the COM display. The timer type annunciates at the left of the timer display



*Timer is grayed out until you activate the function. Count up (CNT UP) is the default timer selection.*
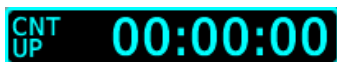


Activate timer controls by pushing the dual concentric knob.

Activation sets the dual concentric knob focus to timer. Toggle between timer types by turning the outer control knob.

## TIMER CONTROLS

| ACTION | SOFT KEY |
|---|---|
| Cancel start value entry[1] | Cancel |
| Start timer | Start |
| Stop timer | Stop |
| Reset timer | Reset |

[1] Countdown timer only.

Basic timer functions are accessible via dual concentric knob push.

Control options change according to the current timer state.

# Set Countdown Timer

The unit retains the most recent count down value following a power cycle.
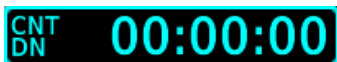
| CNT DN 00:00:00 | 1. Set direction to count down (CNT DN) using the outer control knob. |

| CNT DN 00:01:00 | 2. Specify countdown time using the inner and outer control knobs.<br><br>• Move cursor between hours, minutes, and seconds using the outer knob.<br><br>• Set timer value using the inner knob. Pushing the knob enters the timer value. |

| CNT DN 00:00:21 | 3. Select **Start**. |

| CNT DN 00:00:00 | Timer flashes as the value reaches zero (00:00:00). |

| CNT DN −00:00:02 | Upon reaching zero, timer continues counting as a negative value until you select **Stop**. |
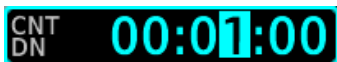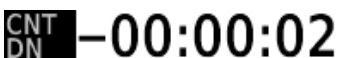
To reset timer, push the **Reset** soft key.

# Set Count Up Timer

| CNT UP 00:01:07 | 1. Set direction to count up (CNT UP) using the outer control knob (if necessary).<br><br>2. Select **Start**. |

To reset timer, push the **Reset** soft key.

# 6 Messages

# View System Messages

**WHERE TO FIND IT**

**Menu**
└─○ System
  └─○ Messages
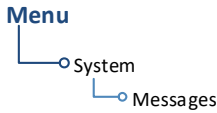
Advisories are system-related messages relative to the display. A list of active advisories is viewable from the System tab:

**MENU** > **System** > **Messages**

You can open the list directly by pushing the **MSG** soft key when an active message is present.

*Message List*

> **Messages**
> Pilot stored data was lost. Recheck settings.
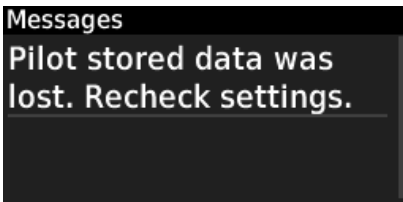
- Most recent advisories appear at the top of the message list
- View-once advisories remain in queue until viewed by the pilot
- Persistent (or conditional) advisories remain active until the indicated condition is resolved

# Active Message Indication

**MSG**

Flashing "MSG" annunciation appears adjacent to the bottom soft key when a new advisory is present.

Selecting **MSG** displays the advisory list. Selecting it again acknowledges all active advisories and closes the list.

It no longer displays after all active advisories are cleared.

# COM Radio Advisories

| ADVISORY | CONDITION | CORRECTIVE ACTION |
|---|---|---|
| COM radio needs service. | COM radio is reporting that it requires service. Functionality may be unavailable. | Cycle radio power. Contact dealer for service. |
| COM over temperature. Reducing transmit power. | COM radio is in overtemp mode. Transmitting power automatically reduces to prevent damage to the COM radio. Radio range is reduced as a result. | • Decrease length of COM transmissions.<br>• Decrease cabin temperature and increase cabin airflow, especially near the unit.<br>• Contact dealer for service if message persists. |
| COM under voltage. Reducing transmit power. | COM radio is in undervoltage mode. Transmitting power automatically reduces to prevent damage to the COM radio. Radio range is reduced as a result. | • Decrease length of COM transmissions.<br>• Check aircraft voltage and reduce electrical load as necessary.<br>• Contact dealer for service if message persists. |
| TX Interlock discrete input is stuck active. | Unit detects the TX Interlock discrete input has been active for 60 seconds. | Contact dealer for service. |
| COM MIC <1/2> key is stuck. | Unit detects the specified key in the pressed position for 30 seconds. The input is ignored as a result. Radio stops transmitting. | Verify that the key is not stuck. Contact dealer for service if message persists. |

| ADVISORY | CONDITION | CORRECTIVE ACTION |
|---|---|---|
| COM \<name\> switch is stuck. | Unit detects the specified switch is active for 30 seconds. The input is ignored as a result. Radio stops transmitting.<br>Includes:<br>• Standby monitor remote switch<br>• Remote transfer switch<br>• Remote tune up switch<br>• Remote tune down switch | Verify that the switch is not stuck. Contact dealer for service if message persists. |

# Database Advisories

| ADVISORY | CONDITION | CORRECTIVE ACTION |
|---|---|---|
| Active DB corrupt. Remove or replace. | The active database is unavailable or corrupt. | Re-download and install database. Contact a Garmin dealer for support. |
| Database will update on next power cycle. | The standby database completed transfer and is ready for activation at the next power cycle. | No action necessary. |
| Database updated successfully. | The database successfully activated upon system start-up. | |

# Navigation Advisories

**AVAILABLE WITH: GNC 215**

| ADVISORY | CONDITION | CORRECTIVE ACTION |
|---|---|---|
| Navigation receiver needs service. | NAV radio is reporting that it requires service. Functionality may be unavailable. | Service required. Contact dealer for support. |
| OBS source lost. Select CDI from Display Menu. | Loss of OBS source data. | Verify that the interfaced CDI/HSI is powered on. Contact dealer for service. |
| Unit needs service. | The system reports one of the following conditions. <br>• CDI interface failure<br>• Internal failure | |

# Pilot Specified Advisories

These advisories display when the associated timer expires or reaches a preset value. They are informational only. Other than acknowledging the message, no action is necessary.

| ADVISORY | CONDITION |
|---|---|
| Timer has expired. | Countdown timer is reaching zero. |

# System Hardware Advisories

| ADVISORY | CONDITION | CORRECTIVE ACTION |
|---|---|---|
| Configuration module needs service. | The unit cannot communicate with its configuration module. Unit configuration may still be valid. | Contact dealer for service. |
| Unit over temperature. Limit Backlight. | Unit temperature exceeds the over temperature threshold. Backlight dims to reduce power and heat. | Decrease cabin temperature and increase cabin airflow near the unit. If the problem persists, contact dealer for service. |
| Unit under temperature. | The system reports that its internal temperature is below the normal operating threshold. | If the problem persists, contact dealer for service. |
| Pilot stored data was lost. Recheck settings. | An error occurred in the pilot stored data. The following user settings may be lost. | Recheck settings. Contact dealer for service. |
| MicroSD card is invalid or failed. | The microSD card has an error and is unreadable. | 1. Reformat the microSD card using an external computer. 2. Re-insert the SD card in the slot. 3. Contact dealer if the problem persists. |
| Unit needs service. | The system reports one of the following conditions. • Volume knob failure • Light sensor failure • Invalid display calibration • Invalid main board calibration | Contact dealer for service. |

| ADVISORY | CONDITION | CORRECTIVE ACTION |
|---|---|---|
| \<Name\> key is stuck. | System detects the indicated bezel key is depressed for at least 30 seconds. It will now ignore this input.<br>Includes:<br>• Bottom soft key<br>• Flip-flop key<br>• Menu key<br>• MON key<br>• Top soft key | Push the indicated key again. If it remains stuck, contact dealer for service. |
| \<Dual concentric inner/Volume\> knob push is stuck. | System detects the indicated knob is depressed for at least 30 seconds. It will now ignore this input. | Push the knob again. If it remains stuck, contact dealer for service. |

# VLOC/GS Advisories

**AVAILABLE WITH: GNC 215**

| ADVISORY | CONDITION | CORRECTIVE ACTION |
|---|---|---|
| Glideslope receiver needs service. | Glideslope board is reporting that it requires service. Functionality may be unavailable. | Verify glideslope deviation indications with another source and cross-check final approach fix crossing altitude. If another source is not available, fly a GPS based approach.<br>Contact dealer for service. |
| VLOC remote transfer switch is stuck. | System detects the indicated remote switch is active for at least 30 seconds. It will now ignore this input. | Push the remote key again. If it remains stuck, contact dealer for service. |

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# 7  Glossary

## A

AFM          Aircraft Flight Manual

AFMS        Aircraft Flight Manual Supplement

ARTCC      Air Route Traffic Control Center

ATIS        Automatic Terminal Information Service

## C

CDI          Course Deviation Indicator

## D

DB           Database

DME         Distance Measuring Equipment

## F

FAA          Federal Aviation Administration

FCC          Federal Communication Commission

FREQ        Frequency

FSS          Flight Service Station

## G

GFC          Garmin Flight Controller

GNC          Garmin NAV/COM

GPS          Global Positioning System

GS           Glideslope

GTR          Garmin Transceiver Radio

## H

HSDB        High Speed Data Bus

HSI          Horizontal Situation Indicator

# I

IFR          Instrument Flight Rules

ILS          Instrument Landing System

# L

LCD         Liquid Crystal Display

LOA         Letter of Authorization

LOC         Localizer

LRU         Line Replaceable Unit

# M

MSG        Message

# N

NAV         Navigation

NAVAID    Navigation Aid

NVIS        Night Vision Imaging System

# O

OBS         Omni Bearing Selector

# R

RF           Radius to Fix

RX          Receive, Receiver

# S

SD           Secure Digital

STBY        Standby

# T

T            True

T/F          To/From

TX          Transmit

# V

| | |
|---|---|
| VFR | Visual Flight Rules |
| VHF | Very High Frequency |
| VLOC | VOR/Localizer |
| VOR | Very High Frequency Omnidirectional Range |

# W

| | |
|---|---|
| WX | Weather |

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# 8 Regulatory Information

# Compliance

## FCC Compliance Statement

This device complies with Part 15 of the FCC limits for Class B digital devices. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Furthermore, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference, the user is encouraged to try to correct the interference by relocating the equipment or connecting the equipment to a different circuit than the affected equipment. Consult an authorized dealer or other qualified avionics technician for additional help if these remedies do not correct the problem.

Operation of this device is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## Declarations of Conformity

**Declaration of Conformity**

Hereby, Garmin declares that this product is in compliance with the Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.garmin.com/compliance.

**UK Declaration of Conformity**

Hereby, Garmin declares that this product is in compliance with the relevant statutory requirements. The full text of the declaration of conformity is available at the following internet address: www.garmin.com/compliance.

**Radio Frequency/Output Power**

2.4 GHz @ 11 dBm nominal.

# Software License Agreement

BY USING THE DEVICE, COMPONENT OR SYSTEM MANUFACTURED OR SOLD BY GARMIN ("THE GARMIN PRODUCT"), YOU AGREE TO BE BOUND BY THE TERMS AND CONDITIONS OF THE FOLLOWING SOFTWARE LICENSE AGREEMENT. PLEASE READ THIS AGREEMENT CAREFULLY. Garmin Ltd. and its subsidiaries ("Garmin") grants you a limited license to use the software embedded in the Garmin Product (the "Software") in binary executable form in the normal operation of the Garmin Product. Title, ownership rights, and intellectual property rights in and to the Software remain with Garmin and/or its third-party providers. You acknowledge that the Software is the property of Garmin and/or its third-party providers and is protected under the United States of America copyright laws and international copyright treaties. You further acknowledge that the structure, organization, and code of the Software are valuable trade secrets of Garmin and/or its third-party providers and that the Software in source code form remains a valuable trade secret of Garmin and/or its third-party providers. You agree not to reproduce, decompile, disassemble, modify, reverse assemble, reverse engineer, or reduce to human readable form the Software or any part thereof or create any derivative works based on the Software. You agree not to export or re-export the Software to any country in violation of the export control laws of the United States of America.

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