GARMIN®

G500(H)/G600/G700 TXi

Software v3.80

Upgrade Supplement

This supplement contains revised pages from *G500(H)/G600/G700 TXi Pilot's Guide*, P/N 190-01717-10, Rev. R. These pages contain new and significant information regarding the features of software v3.80 as well as changes in terminology and additional information to clarify unit operation.

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

G500(H)/G600/G700 TXi Main software v3.80 adds the following significant features.

CPDLC PFD Annunciator

For aircraft equipped with a GTN 750Xi Series navigator upgraded with the FAA Data Comm enablement, a "CPDLC" message flag replaces the standard "MSG" flag above the CDI Lateral Deviation Indicator, signaling that a CPDLC message is queued in the GPS navigator.[1]

This indication is inhibited during critical phases of flight.

BARO and selected altitude settings received from ATC may be crossfilled from the configured GTN Xi to the TXi PFD via CPDLC automation.

For more information about CPDLC message indications and automated functions, consult *GTN Xi Series Pilot's Guide Addendum for FAA Data Comm*.

GCO 14 Alerts

For aircraft equipped with a GCO 14 carbon monoxide monitor and compatible navigator, TXi issues visual caution alerts when CO levels in the cabin meet the activation criteria. An inhibit function is available in the System settings.

Learn more about the CO Monitor feature in Section 4, *Advanced Features*.

Speed Constraints

If equipped with a compatible navigator, TXi displays speed constraint data on the PFD, moving map, and active flight plan. While not VNAV data, speed constraint text labels may appear on Map along with altitude constraint labels.

Learn more about the speed constraints feature in the following sections.

Dedicated airspeed indicator field: Section 3, *Primary Flight Display*.

Map and flight plan indications: Section 5, *Navigation*.

[1] Available only with GTN Xi software v21.02 and later. Requires purchased GTN 7XX FAA Data Comm feature enabled on a GTN 750Xi Series unit and active service subscription.

EIS Display Enhancements

TXi EIS displays provide new and updated features for piston and turbine aircraft. Learn more about these changes in Section 9, *Fuel & Engine Indication System*.

PISTON EIS

Optional Arc Gauge Format

In addition to traditional round gauges, piston EIS displays now offer a configurable arc gauge format. Arc gauges are truncated, round, and have fewer graduations than standard dial gauges. They may be configured to provide non-linear scaling.

Enhanced Engine Temperature Display

CHT/EGT bar graph indications and Lean Assist functions now include:

- Three graphical views of CHT/EGT data: monitor, lean assist (or *lean*), and normalized
- Multi-touch features allowing you to switch between views via swipe or knob turn.
- Consolidated CHT and EGT cylinder display for single-engine configurations
- Per-cylinder digital readouts when space allows
- Selectable display detail levels for non-constrained layouts
- High CHT advisory indication
- Lean assist alert options

In lean view, corresponding indications on the fuel flow gauge depict peak fuel flow (i.e., the fuel flow when the first or last peak occurred) and the difference in current and peak fuel flow.

TURBINE EIS

- New on-target indications for target bug (N1) and torque bug values change appearance when the computed target is within the configured range
- N1 target GND OAT data entry field now displays the measured RAT value by default (Cessna 525(A) aircraft only)

ZERO FUEL WEIGHT

If enabled, an Aircraft Weight feature provides setup functions allowing you to enter the zero fuel weight of the aircraft. Options are accessible from the EIS start-up page or from the fuel computer.

- Manually type the zero fuel weight value or select an assigned preset value
- Assign or delete preset values
- Recall the last manually entered zero fuel weight value

Expanded Indications and Functions on the PFD

TXi PFD provides expanded alerting and control options. Learn more about these features in the following sections.

PFD settings and control options: Section 3, *Primary Flight Display*.

AFCS and Stabilized Approach alerts: Section 4, *Advanced Features*.

PILOT-SELECTABLE CONTROL OPTIONS

- Extreme Attitude Declutter mode
- Heading Preset Mode (HPM) for installations equipped with GSU 75
- V_{ENR} speed setting for landing (turbine aircraft)

AFCS ALERT ANNUNCIATIONS FOR FIXED WING AIRCRAFT

For aircraft equipped with GFC 600, TXi provides the following alerts and annunciations on the PFD.

Alerts:

- Rudder bias preflight test in progress ("RB PFT")
- VNAV automatically disabled during normal operations (yellow "V")
- Below minimum airspeed for flight into known icing conditions ("ICE SPD" accompanied by a snowflake icon on the airspeed tape)

Annunciations:

- Vertical Navigation ("V") mode annunciation

STABILIZED APPROACH ALERTS

The Stabilized Approach function now includes aural and visual alert indications for the following alert types.

- Descent Speed
- Flaps Not in Landing Configuration
- Gear Not in Landing Configuration

Includes inhibit options.

Change List

G500(H)/G600/G700 TXi Pilot's Guide, P/N 190-01717-10, Rev. R contains the following significant changes.

REV Q PAGE	REV R PAGE	DESCRIPTION
Section 1 - System at a Glance		
1-3	1-3	Updated image depicting a piston EIS display on GDU 700L.
1-4	1-4	Updated image depicting a piston EIS display on GDU 700P.
1-20	1-20	Added fourth bullet to list of EIS inner knob (turn) functions: "switching between CHT/EGT modes."
		Added second bullet to list of EIS inner knob (push) functions: "resetting lean/normalize value."
1-25	1-25	Added GCO 14 to list of optional interfaces.
1-33	1-33	Added "Cabin CO Monitor" section.
Section 2 - Get Started		
2-2	2-2	Updated image of splash page during power up.
2-3	2-3	Updated image of database start-up page.
2-4	2-4	Updated image of Select Crew Profile page during power up. For installations with a GTN Xi Series navigator.
2-15	2-15	Updated image of splash page during automatic database transfer.
2-17	2-17	Updated image depicting database transfer from SD card on the splash page.
2-21	2-21	Updated image depicting synchronization status indications on the splash page.
2-39	2-39	Updated image of Select Crew Profile pop-up menu during power up.
2-54	2-54	Updated image of EIS display on GDU TXi within "Data Logging with Flight Stream 510" diagram.

REV Q PAGE	REV R PAGE	DESCRIPTION
2-55	2-55	Updated image of EIS display on GDU 700P within "Exporting Data to an SD Card" diagram.
Section 3 - Primary Flight Display		
3-2	3-2	Added note 15 regarding feature availability (TXi v3.80 and later).
3-3	3-3	Added Extreme Attitude Declutter to list of PFD Setup submenu options for GDU 700( ) and GDU 1060. Applied note 1 regarding availability (dependent upon configuration).
		Added Inhibit CO Alerts to list of System menu options for GDU 700( ).
		Applied note 15 regarding availability (TXi v3.80 and later) to each new feature.
3-4	3-4	Updated list of PFD Setup selections for GDU 700( ) to include extreme attitude declutter mode toggle.
		Added and applied note 7 regarding availability (TXi v3.80 and later).
3-5	3-5	Added Inhibit CO Alerts to list of PFD System menu selections for GDU 700( ).
		Applied note 7 regarding availability (TXi v3.80 and later).
3-6	3-6	Added Flaps and Gear alert inhibit options to Stabilized Approach PFD Setup menu selection for GDU 1060.
3-7	3-7	Added Extreme Attitude Declutter to list of PFD Setup selections for GDU 1060.
		Added and applied note 15 regarding availability (TXi v3.80 and later).
3-21	3-21	Added feature requirement for extreme attitude declutter mode option (TXi v3.80 or later).
		Added feature limitation regarding selectable mode option availability (dependent upon configuration).
		Revised first sentence of second paragraph to clarify "if enabled."

REV Q PAGE	REV R PAGE	DESCRIPTION
3-22	3-22	Added "Extreme Attitude Declutter Mode Key" segment. Includes note 1 regarding automatic declutter function in TXi software earlier than v3.80.
3-33	3-33	Added V_{ENR} to list of available landing reference speeds for turbine aircraft.
		Applied note 1 regarding availability of a configurable custom label for some airframes.
3-34	3-35	Added "Speed Constraint Indications" section.
3-43	3-45	Added navigation paths to Altitude Setup submenu for both GDU 700( ) PFD and GDU 1060 PFD.
3-44	3-46	Updated step 1 of "Enable Baro Alerting" segment to include navigation paths to the Altitude Setup submenu for both GDU 700( ) PFD and GDU 1060 PFD.
		Made minor edits to "Disable Baro Alerting" segment.
3-52	3-54	Added information about new Heading Preset Mode (HPM) feature throughout "Changing Heading Modes" section. Includes feature requirement (GSU 75).
3-87	3-89	Updated image of G-meter to show new position of fixed vertical tape.
3-88	3-90	Added navigation paths to G-Meter Setup submenu for both GDU 700( ) PFD and GDU 1060 PFD.
Section 4 - Advanced Features		
4-1	4-1	Added "Carbon Monoxide Alerts" to Section 4 table of contents.
4-35	4-35	Updated list of AFCS vertical mode annunciations to include additional Vertical Navigation ("V") mode annunciation. Applied note 1 regarding feature applicability (GFC 600 only).

REV Q PAGE	REV R PAGE	DESCRIPTION
4-36	4-36	Updated list of AFCS alert annunciations for fixed wing to include: • Rudder bias preflight test in progress (“RB PFT”) • VNAV automatically disabled during normal operations (yellow “V”) • Below minimum airspeed for flight into known icing conditions (“ICE SPD”)
		Added and applied note 6 regarding availability (TXi v3.80 and later) to each new entry.
		Added and applied note 7 to “ICE SPD” alert annunciation. Pertains to how annunciation is overridden when underspeed protection is active.
4-37	4-37	Added information for fixed wing aircraft regarding anti-ice active indications.
4-40	4-42	Added “Carbon Monoxide Alerts” section.
4-42	4-46	Updated table to include the following Stabilized Approach alert types. • Descent Speed • Flaps Not in Landing Configuration • Gear Not in Landing Configuration
		Changed “Baro Alert” to “Baro/GPS Mismatch.”
		Changed “Speed Alert” to “Approach Speed.”
		Applied notes 1 and 2 to all new entries.
		Applied note 3 to Flaps Not in Landing Configuration alert.
	4-49	Changed section title to “Alert Inhibit.”
		Updated list of alert suppression options to reflect new inhibit options and actual control labels.
		Updated navigation paths to Stabilized Approach submenu for GDU 700( ) and GDU 1060.

REV Q PAGE	REV R PAGE	DESCRIPTION
4-45	4-50	Updated "Alert Priority" list to reflect addition of new alert types.
		Updated alerts table to include alerting zone indications (aural and visual) for each new alert type.
Section 5 - Multi-Function Display		
5-3	5-3	Added Inhibit CO Alerts to list of System Setup menu options.
5-4	5-4	Updated list of MFD System Setup selections to include CO caution alerts toggle.
5-20	5-20	Changed "Altitude Constraints" setup menu option to "Constraints."
5-2	5-21	Revised Constraints functional description to include speed constraints. Added and applied note 3 regarding availability (TXi v3.80 and later; GTN Xi v21.02 and later).
5-40	5-41	Added Speed Constraints (SPD) to "Data Field Selections" list.
5-46	5-43	Added magenta to "Color Definitions" table.
5-48	5-46	Added "Speed Constraint Indications" section.
5-43	5-49	Added "Speed Constraint Labels" section.
Section 8 - Terrain Awareness		
8-15	8-15	Added second bullet regarding flaps configuration to Excessive Below Glideslope or Glidepath Deviation alert condition description.
Section 9 - Fuel & Engine Indication System		
9-2	9-2	Updated images depicting EIS displays for multi-engine (GDU 700P) and single engine (GDU 700L) aircraft.
9-3	9-3	Updated image depicting a split EIS/MFD configuration on GDU 700L.
9-4	9-4	Updated images of MFD Engine page and gauge strip (GDU 1060) for single and multi-engine piston aircraft.

REV Q PAGE	REV R PAGE	DESCRIPTION
9-5	9-5	Added Enable Aircraft Weight to list of Fuel Computer selections.
		Added Engine Temperature submenu selections to Engine and System (GDU 700( )) menus.
		Added Inhibit CO Alerts to list of System menu/page selections for GDU 700P and GDU 1060.
		Applied note 4 regarding mode selection availability (dependent upon configuration) to each Engine Temperature submenu.
		Added and applied note 5 regarding availability (TXi v3.80 and later) to all new EIS setup features.
9-6	9-6	Added the following new features to EIS Setup Selections table. • Inhibit CO Alerts • Engine Temperature
		Added and applied note 2 regarding availability (dependent upon configuration) to "CHT/EGT mode options."
9-7	9-7	Changed section title to "Gauge & Indicator Types."
		Updated illustration depicting gauge and indicator types on GDU 700P EIS configured for dial gauges (multi-engine).
	9-8	Added illustration depicting gauge and indicator types on GDU 700P EIS configured for arc gauges (multi-engine).
	9-9	Changed "Standard Dial Gauges" to "Engine Gauges" and added information to feature description about available gauge styles (arc or dial). Added and applied note 4 regarding mutual exclusivity of piston arc and dial gauge formats.
		Added Engine Temperature Graph to table of common EIS display elements. Applied note 2 to each instance of "TIT."
		Added guidance for more information about EIS display features.
9-8	9-10	Added "Prop Sync Indicator" segment.

REV Q PAGE	REV R PAGE	DESCRIPTION
9-11	9-13	Change segment title to "Engine Gauges" and added information about piston arc gauges. Added and applied note 1 regarding mutual exclusivity and availability (dependent upon configuration) of gauge formats.
	9-14	Added information about horizontal and vertical bar gauge features and behavior, including the movement of linear indications and how single or dual pointers are dependent upon engine type.
	9-15	Added "Non-linear Gauges" segment.
9-12	9-16	Added image depicting static reference markings on arc gauge. Includes image captions for both gauge types (dial and arc).
9-13	9-17	Added images depicting range and alerting indications on power and performance arc gauges. Includes image captions for both gauge types (dial and arc).
9-15	9-20	Rewrote second sentence of "Marking Sets" segment introduction to address the configuration of markings for: • green arc • red line maximum values based on pressure altitude
9-23	9-22	Added reference to Zero Fuel Weight section for information about Aircraft Weight feature enablement and zero fuel weight entry.
		Rewrote note 9 for EST Current Weight selectable user field. Pertains to requirement for valid estimated fuel remaining and zero fuel weight values.
		Added and applied note 10 to EST Weight at DEST selectable user field. Pertains to requirement for valid fuel remaining at destination and zero fuel weight values.
9-17	9-24	Added "CHT/EGT" section for piston aircraft.
9-28	9-46	Updated images of MFD Engine page (GDU 1060) for single and twin engine turboprop aircraft.

REV Q PAGE	REV R PAGE	DESCRIPTION
9-29	9-47	Added Enable Aircraft Weight to list of Fuel Computer selections.
		Added Inhibit CO Alerts to list of System menu/page selections for GDU 700P and GDU 1060.
		Added and applied note 4 regarding availability (TXi v3.80 and later) to all new EIS setup features.
9-30	9-48	Added Inhibit CO Alerts to EIS Setup Selections table.
9-31	9-49	Changed section title to "Gauge & Indicator Types."
9-43	9-61	Added fourth bullet to list of feature limitations. Pertains to availability of on-target indications (TXi v3.80 and later).
		Updated image depicting computed target and mode indications on EIS (turbine aircraft).
9-44	9-62	Added information about on-target indications for turbine aircraft. Includes target thresholds for N1 and torque bugs.
9-45	9-64	Rewrote step 1 of "Set a Target Bug for Takeoff Power" instruction to clarify that GDU displays the measured RAT value by default.
9-54	9-73	Added reference to Zero Fuel Weight section for information about Aircraft Weight feature enablement and zero fuel weight entry.
		Rewrote note 11 for EST Current Weight selectable user field. Pertains to requirement for valid estimated fuel remaining and zero fuel weight values.
		Added and applied note 12 to EST Weight at DEST selectable user field. Pertains to requirement for valid fuel remaining at destination and zero fuel weight values.
9-64	9-83	Updated list of fuel computer parameters available for display in a selectable user field. Additions include: • Estimated weight at destination • Aircraft weight • Estimated current weight

REV Q PAGE	REV R PAGE	DESCRIPTION
9-65	9-85	Changed section title to "Fuel Computer Setup Options."
		Added third bullet to list of available fuel computer setup operations.
		Added Aircraft Weight to Setup menu options.
		Added and applied note 3 regarding feature availability (TXi v3.80 and later) to Aircraft Weight table and menu entries.
9-67	9-88	Added "Zero Fuel Weight" section.
9-74	9-96	Updated depictions of EIS start-up page on GDU 1060 MFD, GDU 700P, and GDU 700L.
		Added second bullet to list of available EIS setup and preflight functions. Pertains to entering Zero Fuel Weight.
		Rewrote fourth bullet to only state: "view the amount of fuel used."
9-77	9-99	Revised steps 1 and 2 of "Lean the Engine" operation to reflect new lean functionality. Made minor edit to step 3.
Section 10 - Abnormal Operations		
10-6	10-6	Updated depiction of normal mode EIS on GDU 700P in "Display Backup Modes" segment.
10-7	10-7	Updated depiction of GDU 700P gauges in "EIS Gauge Reversion" segment.
10-17	10-18	Added "Aircraft with GFC 600 Extended Availability" topic to "AHRS Automatic Source Selection" segment.
10-28	10-29	Added and applied note 1 to Altitude and Indicated Airspeed parameters. Pertains to how ALT and IAS miscompares do not display when SSEC states do not match.
Section 13 - Glossary		
13-3	13-3	Added Garmin Mode Controller (GMC) to glossary.
13-4	13-4	Added Heading Preset Mode (HPM) to glossary.
13-6	13-6	Added Static Source Error Correction (SSEC) to glossary.

Unit Configurations

Depending on system specifics, one or more of the following functions may apply.

- *Primary Flight Display (PFD):* provides attitude, heading, air data, and navigation information to the pilot
- *Multi-Function Display (MFD):* provides pilot awareness of factors that may affect the overall conduct of a flight
- *Engine Indication System (EIS):* provides engine and airframe operating parameters to the pilot

GDU 700L PFD, EIS, or MFD/EIS

The GDU 700L provides a single PFD, piston EIS, or in single-engine piston EIS, MFD/EIS combined function.

When configured as an MFD/EIS display, engine instruments are dedicated to 40% of the screen. The remaining screen portion displays all configured MFD options using a pilot-selectable menu.

Piston EIS Only

PFD Only

Single Engine Piston EIS/MFD

GDU 700P PFD, MFD, EIS, MFD/EIS

GDU 700P provides a single PFD, MFD, EIS, or, in single-engine piston EIS, a combined MFD/EIS function. In some installations, it provides backup PFD or EIS information in the event that the primary PFD or EIS display fails or malfunctions.

When configured as an MFD/EIS display, engine instruments are dedicated to 40% of the screen. The remaining screen portion displays all configured MFD options using a pilot-selectable menu.

EIS Only

PFD Only

MFD Only

EIS/MFD[1]

[1] Single-engine piston EIS only.

MFD KNOB FUNCTIONS	
Outer Knob	• Selecting a page shortcut • Cursor placement and initial field/page selections • Moving cursor forward or backward within a data field
Inner Knob (Turn)	• Inputting data • Modifying individual characters in data entry field • Zooming • Controlling airborne weather radar and Stormscope lightning display range
Inner Knob (Push)	• Entering a specified numerical value
Inner Knob (Push and Hold)	• Switching between MFD and PFD control functions

EIS KNOB FUNCTIONS	
Outer Knob	• Cursor placement and initial field/page selections • Moving cursor forward or backward within data field • Selecting bug operating modes
Inner Knob (Turn)	• Inputting data • Modifying individual characters in data entry field • Adjusting bug value and indicator position • Switching between CHT/EGT modes
Inner Knob (Push)	• Entering a specified numerical value • Resetting lean/normalize value • Toggling the selected operating mode on or off

Compatible Equipment

Line Replaceable Units

SYSTEM REQUIRED LRUs (PFD)
ADAHRS or ADC with AHRS
GMU 44/44B
Garmin GPS navigator
Temperature probe
SYSTEM OPTIONAL LRUs
Backup GPS antenna
GAD 43/43e adapter
GBB 54 battery[1]
GCU 485 PFD controller
GEA 110 engine airframe interface[2]
GEA 71 engine airframe interface[3]
OPTIONAL INTERFACES
ADF
AOA computer
Airborne weather radar
Autopilot/flight director
DME
G5
GCO 14
GDL 69/69A SiriusXM datalink
GDL 88/GTX 345 ADS-B transceiver
GI 275
GSR 56 satellite datalink
GTX 330 or GTX 335 mode S transponder (TIS-A)
Radar altimeter
Stormscope
TAS/TCAS/TCAS II
VHF NAV and glideslope receiver

The TXi 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.

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

Check unit software version for compatibility.

[1] GBB 54 is only an option for GDU 700( ).
[2] Piston aircraft only.
[3] Turboprop aircraft only.

Backup Battery

FEATURE LIMITATIONS

- *GBB 54 is only an option for GDU 700( )*

An optional GBB 54 backup battery provides emergency power to GDU 700( ), the integrated ADAHRS, and a single GEA 110.

The backup battery is mounted remotely and provides power when aircraft power is unavailable. This allows for continued PFD, MFD, and EIS functionality when aircraft electrical power is lost.

LRU	DISPLAY	FUNCTION
GBB 54 Alternate emergency power source for GDU 700( ).	PFD	Battery availability and charge/discharge status
	MFD	
	EIS	

Cabin CO Monitor

The GCO 14 aircraft carbon monoxide sensor provides CO level information to all configured Garmin avionics. GDU uses this data to alert the flight crew of potentially hazardous levels of CO in the cabin.

Upon detecting heightened levels of CO, GCO 14 issues a visual alert annunciation on all configured TXi displays.

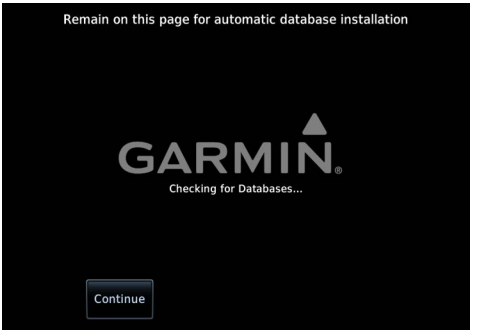
LRU	DISPLAY	FUNCTION
GCO 14 Aircraft carbon monoxide sensor.	PFD	Cabin CO level caution alert annunciation and inhibit option
	MFD	
	EIS	

Power Up

The GDU receives power directly from the aircraft's electrical system. To ensure safe operation, continuous built-in test features exercise the unit's processor, memory, external inputs, and outputs.

Upon power-up, the bezel key backlight momentarily illuminates. System failure annunciations typically disappear within the first 30 seconds after power-up.

Splash Page, GDU 1060



"Checking for Databases..." annunciates as the unit checks for available database updates.

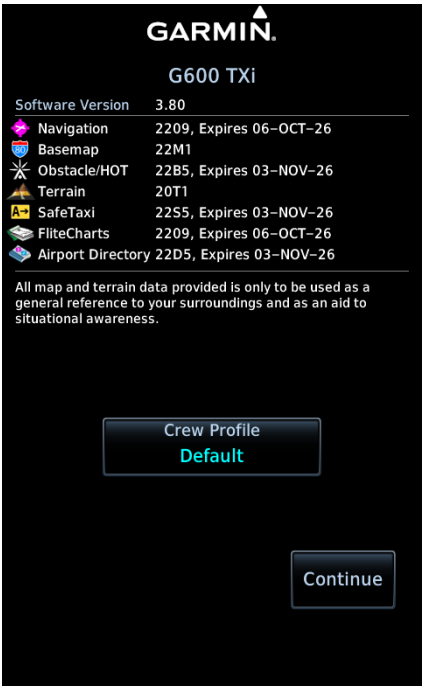
Databases automatically update during power up when newer database versions are available.

The splash page shows the transfer status of each new database for the unit. Remaining on this page allows the system to automatically restart and complete database activation.

You may advance to another page during the update process by tapping **Continue**. However, a manual system restart will be required to activate databases at a later time.

GDU TXi allows multiple methods for updating databases. For more about the update methods available with your system, read *Database Updates*.

Database Start-up Page, GDU 700P MFD



For installations with a GTN Xi series navigator, the database list does not appear. Refer to the primary GTN Xi for a status summary of all databases in the system.[1]

On the MFD:

The database start-up page presents the unit software version, the name and status of all installed databases, and controls for selecting a crew profile (if multiple profiles are available).

From here you may:

- *Select a crew profile:* Tap **Crew Profile**.
- *Advance to the next page:* Tap **Continue**.

Read about crew profile selection and activation in *Crew Profiles*.

[1] Requires GDU TXi software v3.30 or later with GTN Xi v20.20 or later.

Crew Profile Options, GDU 700P MFD

Installations with a GTN Xi Series Navigator:

Crew profile options display if multiple profiles exist.

Choose a profile from the list and then tap **Continue** to advance to the next page. Tapping **Continue** without making a selection activates the default profile.

Profile options do not display if only one profile exists and database confirmation is performed remotely via the primary GTN Xi.[1]

Read about crew profile selection and activation in *Crew Profiles*. Read about database confirmation for installations with a GTN Xi series navigator in *Remote Database Confirmation*.

[1] Requires GDU TXi software v3.30 or later with GTN Xi v20.20 or later.

Automatic Updates

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

Indications show when an automatic database transfer is in progress. Message text varies according to installation method.

Tapping **Continue** advances to the next page. Databases will continue to transfer in the background as you use other features.

Automatic updates occur when:

- A newer database is detected on the SD card or in the unit's internal Standby storage
- A newer database is within its effective dates
- A recommended database is available for transfer from a capable LRU via the Database SYNC function (e.g., GTN Xi)
- The aircraft is on ground

If enabled, the Database SYNC function synchronizes databases across all capable Garmin avionics. A coordinated restart of each unit completes the installation. Read more about database synchronization in *Synchronize Databases Across Multiple Units*.

Load Databases from an SD Card

The unit stores all databases it receives in its internal storage. Once the update is complete, the SD card is no longer required.

Install or update a database using an SD card:

1. Download a database onto an SD card.
2. Insert the SD card with the most recent database(s) into the top/right card slot.
3. Power on the GDU.

The unit detects when an SD card with recommended databases is present in the slot. Updates occur automatically at power up.

A counter on the splash page shows the total number of available databases and the number of databases received by the unit.

Terrain databases may require up to 5 minutes for transfer. Total transfer time depends on the SD card type.

Tap **Continue** at any time to advance to the next page.

A system restart is required to complete installation.

- *If you remain on the splash page:* No action is necessary.
  The system automatically restarts once the update is complete.
- *If you advance to another page during the transfer process:*
  A pop-up informs you when newer databases are available. Tap **Update** and review the list of recommended updates, then tap **Start**.[1]

Once installation is complete, you may power off the unit and remove the SD card.

Overwriting SD card database files

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

You can transfer databases across all capable Garmin avionics via the Database SYNC function. Read more about database synchronization in *Synchronize Databases Across Multiple Units*.

[1] Installations with GDU TXi v3.50 or later and GTN Xi v20.30 or later: Confirmation is requested on the primary GTN Xi.

ENABLE DATABASE SYNC

From the 700P/1060 MFD Home page:

Tap **System** > **System Status** > **Menu** > **Database SYNC**.

From the 700L MFD Home page:

Tap **System** > **System Status** > **Database Information** > **Menu** > **Database SYNC**.

From the 700( ) PFD:

Tap **Menu** > **System** > **PFD Setup** > **Database SYNC**.

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

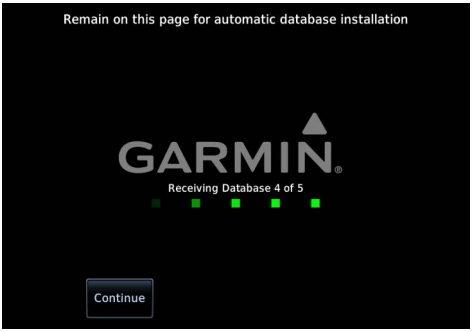
Tapping **OK** confirms the request.

Tapping **Cancel** closes the pop-up and aborts the request.

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

SYNCHRONIZATION STATUS INDICATIONS

Synchronization occurs automatically at power up.



As each database uploads to the unit, a counter informs you of transfer status. Total number of available databases excludes chart databases.

All sync-enabled displays pause momentarily on the splash page until the transfer process is complete.

Tap **Continue** at any time to advance to the next page.

Activate a Profile

You may activate a crew profile from the Manage Crew Profiles page or from a pop-up list on the database start-up page (if multiple profiles are available).

If only one profile exists, the profile is activated automatically upon unit power up.

Once activated, the profile name turns green (active). All inactive profiles display in white text.

ACTIVATE FROM THE MANAGE CREW PROFILES PAGE

From the MFD Home page:

1. Tap **System** > **Crew Profile**.
2. Select a profile from the list.
3. Tap **Activate**.

ACTIVATE FROM THE DATABASE START-UP PAGE

Select Crew Profile Pop-up, GDU 700P MFD

The Default profile is selected automatically.

If multiple profiles exist, a pop-up list allows you to select a profile during power up. Tap **Crew Profile** and select from the available options. Tapping **Continue** activates the selection and closes the pop-up.

The **Crew Profile** key does not appear if only one profile exists.

Installations with a GTN Xi Series Navigator:

Crew profile options display when multiple profiles exist. Choose a profile from the list and then tap **Continue**.

Profile options do not display if only one profile exists and database confirmation is performed remotely via GTN Xi. The MFD automatically advances to the next page (e.g., EIS start-up page, MFD Home page) once it is determined that no database issues exist.[1]

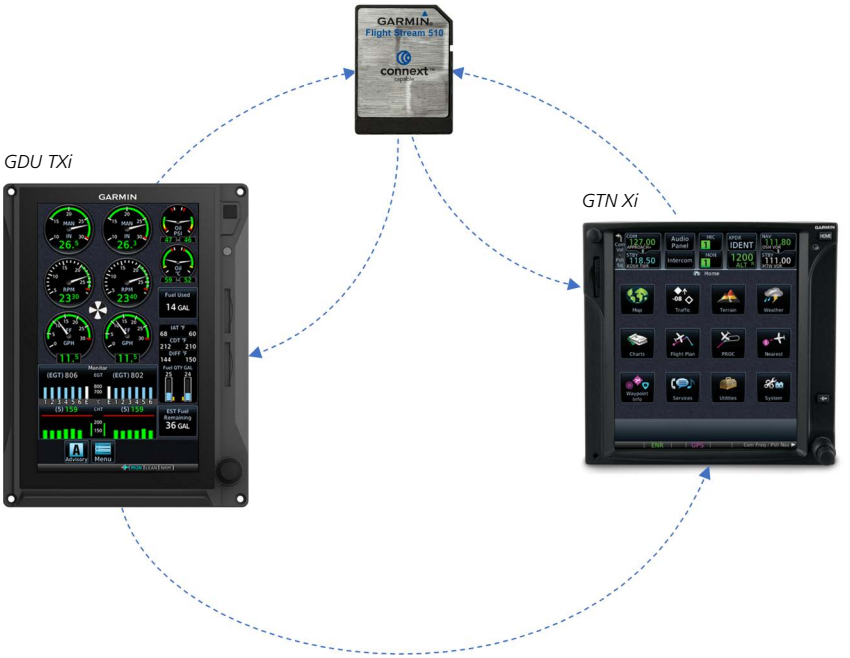
[1] Requires GDU TXi software v3.30 or later with GTN Xi v20.20 or later.

Data Logging at a Glance

Upon power up, GDU begins logging flight and engine data automatically, storing the data in its internal memory.

DATA LOGGING WITH FLIGHT STREAM 510

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



If Flight Stream is present in GDU:

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

If Flight Stream is present in GTN:

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

[1] Pilot setup required.

EXPORTING DATA TO AN SD CARD

To export data logs to an SD card, insert the card into the top/left slot of GDU.

If an SD card is present in the top/left slot:

GDU writes the data to an SD card. No action is required.

If an SD card is not present:

Internal data logging still occurs. You may insert an SD card and use the export function to write GDU data to the card after landing.

What happens if there's a power interruption?

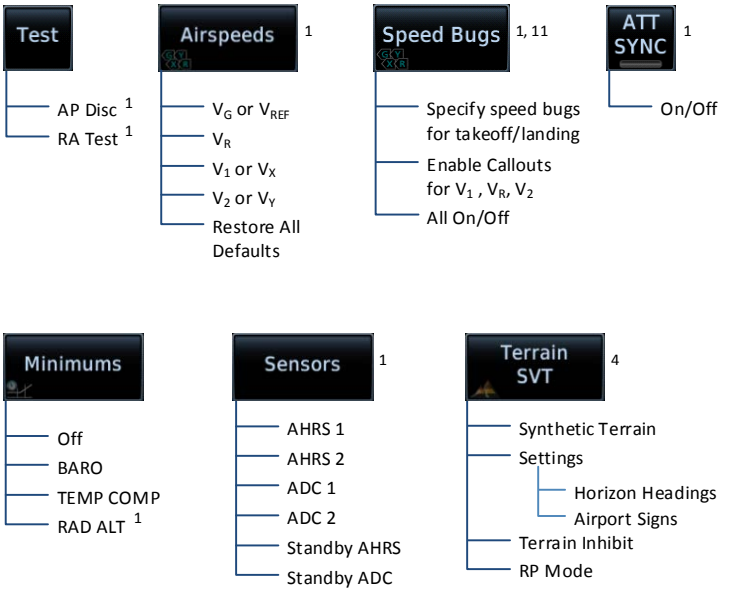
Data logging stops if power is lost. All data recorded up to that point remains stored in the internal memory. Data is not recorded for the duration of the outage. When GDU reboots, logging automatically resumes with a new log file.

In a multi-GDU system, we recommend placing an SD card in each GDU to provide continuous data logging in the event of a GDU outage.

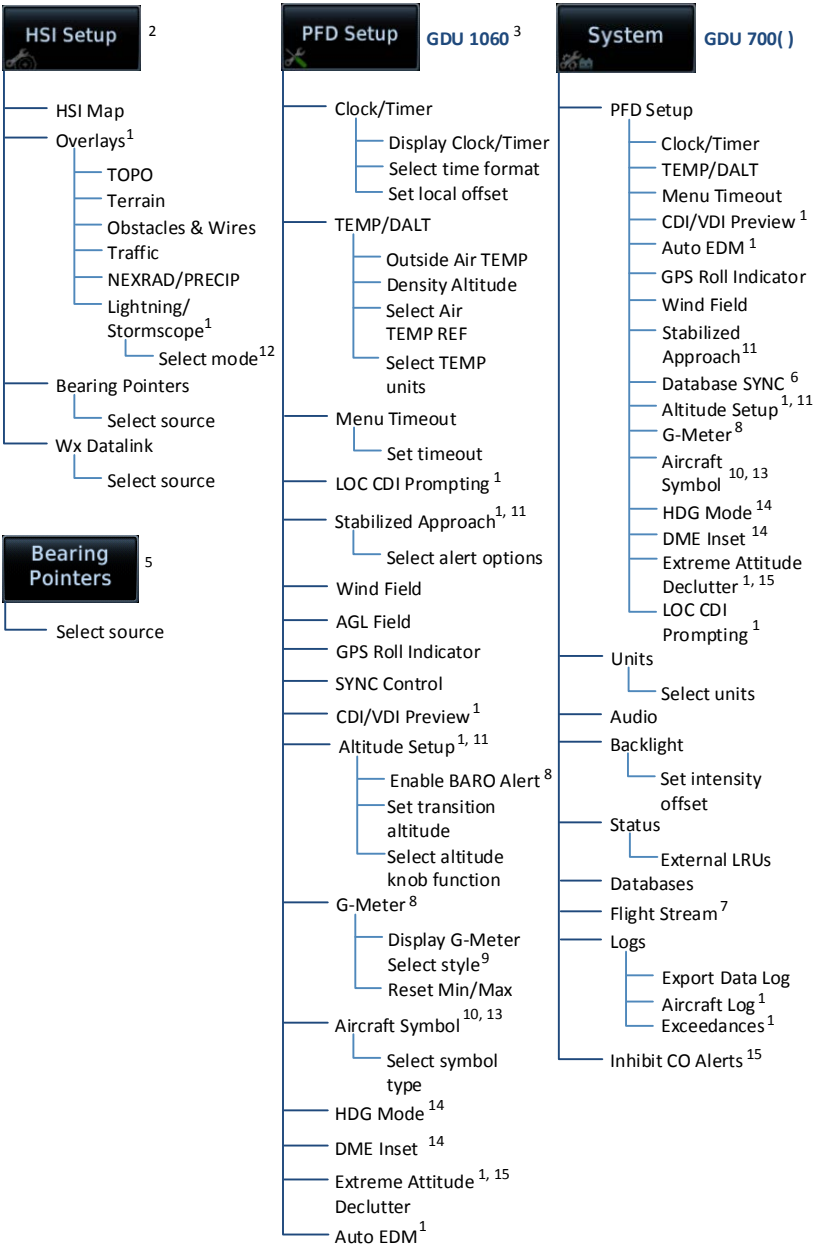
Read more about this method in *Exporting Data Logs to an SD Card*.

PRIMARY FLIGHT DISPLAY MENU FUNCTIONS

The PFD menu provides access to various controls, sub-menus, and setup options.



[1] Dependent upon unit configuration. [2] Not available on GDU 700L PFD.
[3] GDU 1060: Units, audio, backlight, status, and database options are located in the System page of the MFD.
[4] Menu functions pertain to the specified terrain function. [5] GDU 700L only.
[6] In multi-PFD systems, a SYNC Control page access key replaces Database SYNC. Options are dependent upon display type. [7] Feature requires Flight Stream 510 wireless transceiver.
[8] Available with TXi software v3.21 and later.[9] Available with TXi software v3.40 and later.
[10] Available with TXi software v3.50 and later. [11] Available with TXi software v3.61 and later.
[12] WX-500 only. [13] Installations with an autopilot: Flight Director key replaces Aircraft Symbol key when configured for flight director. [14] Available with TXi software v3.70 and later.
[15] Available with TXi software v3.80 and later.


HSI Setup [2]
HSI Map
Overlays[1]
TOPO
Terrain
Obstacles & Wires
Traffic
NEXRAD/PRECIP
Lightning/ Stormscope[1]
Select mode[12]
Bearing Pointers
Select source
Wx Datalink
Select source
Bearing Pointers [5]
Select source
PFD Setup GDU 1060 [3]
Clock/Timer
Display Clock/Timer
Select time format
Set local offset
TEMP/DALT
Outside Air TEMP
Density Altitude
Select Air TEMP REF
Select TEMP units
Menu Timeout
Set timeout
LOC CDI Prompting [1]
Stabilized Approach[1, 11]
Select alert options
Wind Field
AGL Field
GPS Roll Indicator
SYNC Control
CDI/VDI Preview [1]
Altitude Setup[1, 11]
Enable BARO Alert [8]
Set transition altitude
Select altitude knob function
G-Meter [8]
Display G-Meter
Select style[9]
Reset Min/Max
Aircraft Symbol[10, 13]
Select symbol type
HDG Mode [14]
DME Inset [14]
Extreme Attitude Declutter[1, 15]
Auto EDM[1]
System GDU 700( )
PFD Setup
Clock/Timer
TEMP/DALT
Menu Timeout
CDI/VDI Preview [1]
Auto EDM [1]
GPS Roll Indicator
Wind Field
Stabilized Approach[11]
Database SYNC [6]
Altitude Setup[1, 11]
G-Meter [8]
Aircraft Symbol[10, 13]
HDG Mode [14]
DME Inset [14]
Extreme Attitude Declutter[1, 15]
LOC CDI Prompting [1]
Units
Select units
Audio
Backlight
Set intensity offset
Status
External LRUs
Databases
Flight Stream [7]
Logs
Export Data Log
Aircraft Log [1]
Exceedances[1]
Inhibit CO Alerts [15]

PFD Setup

GDU 700( ) PFD

Setup selections are accessible via the **System** menu key (**Menu** > **System** > **PFD Setup**).

PFD SYSTEM SELECTIONS, GDU 700( )	
PFD Setup	• Access CDI/VDI Preview, Auto EDM, LOC CDI Prompting, and Wind Field functions • Access synchronization options: BARO, CDI, Database SYNC • Control clock/timer • Control Outside Air Temp/Density Altitude display • Toggle Wind Field on or off • Set menu display timeout • Access Stabilized Approach alert inhibit options[5] • Toggle AGL Field on or off • Toggle GPS Roll Indicator on or off • Enable altimeter setting visual prompt (BARO Alert) for a specified transition altitude[1] • Set altitude knob function: Push SYNC or Coarse/Fine adjust[5] • Access G-Meter Setup menu[1] options: Display G-Meter, Style [2], Reset Min/Max • Toggle Aircraft Symbol to Chevron or Standard[3, 4] • Access heading mode and slewing control options[6] • Display DME information window[6] • Toggle extreme attitude declutter mode on or off[7]
Units	Except where noted, unit selections synchronize across all configured GDUs. Certain LRUs may contain unit settings independent of the TXi system. • NAV Angle • Temperature • Wind Speed • BARO Pressure • Distance Altitude unit settings do not affect the altitude tape.

PFD SYSTEM SELECTIONS, GDU 700( )	
Audio	• Set click volume
Backlight	• Adjust display brightness
Status	• View unit and software information • Check status of all configured LRUs
Databases	• View information about active and standby databases • Perform a manual database update
Flight Stream	• Access Bluetooth Setup and Wi-Fi Setup menus
Logs	• Access data, aircraft, and exceedance logs
Inhibit CO Alerts	• Toggle CO caution alerts on or off[7]

[1] Available with TXi software v3.21 and later.
[2] Style setup option available with TXi software v3.40 and later. Not available for GDU 700P.
[3] Available with TXi software v3.50 and later. [4] Installations with an autopilot: Flight Director key replaces Aircraft Symbol key when configured for flight director. Availability dependent upon configuration.
[5] Available with TXi software v3.61 and later. [6] Available with TXi software v3.70 and later.
[7] Available with TXi software v3.80 and later.

GDU 1060 PFD

Setup selections are accessible via the **PFD Setup** key in the main PFD menu (**Menu** > **PFD Setup**).

PFD SETUP SELECTIONS, GDU 1060	
Clock/Timer	• Control clock/timer
TEMP/DALT	• Control Outside Air Temp/Density Altitude display • Specify air temperature units and reference type
Menu Timeout	• Set menu display timeout
LOC CDI Prompting	• Allow prompts for switching the CDI source from GPS to LOC[2, 3]
Wind Field	• Control wind field function
CDI/VDI Preview	• Enable preview indicators for VDI Glidepath/Glideslope deviation, and VOR/LOC course and deviation[1]
Auto EDM	• Enable automatic EDM[4]
SYNC Control	• Access synchronization options: BARO or CDI[5]
Stabilized Approach[13]	• Access Stabilized Approach alert inhibit options: • Approach Speed • BARO/GPS Mismatch • Course • Crosswind • Flaps • Gear • Glidepath/Glideslope • Tailwind
Database SYNC	• View information about active and standby databases • Perform a manual database update

PFD SETUP SELECTIONS, GDU 1060	
AGL Field	• Display GPS height above terrain (AGL)
GPS Roll Indicator	• Display GPS navigator's roll steering command[7]
Altitude Setup	• Enable altimeter setting visual prompt (BARO Alert) for a specified transition altitude[8] • Set altitude knob function: Push SYNC or Coarse/Fine adjust[12]
G-Meter	• Access G-Meter Setup menu[8] options: • Display G-Meter • Style[9] • Reset Min/Max
Aircraft Symbol	• Toggle symbol type to Chevron or Standard[10, 11]
HDG Mode	• Access heading mode and slewing control options[14]
DME Inset	• Display DME information window[14]
Extreme Attitude Declutter	• Toggle extreme attitude declutter mode on or off[15]

[1] Available only when a configured GTN is present.
[2] Available only when a configured GPS/NAV navigator (GTN 650/750 or GNS 430/530) is present.
[3] For installations with a GFC 600 or GFC 500 autopilot: LOC CDI prompting is suppressed when the autopilot is armed to capture the localizer. The TXi CDI source automatically switches from GPS to LOC once the autopilot couples to the localizer.
[4] Available only with GFC 600 installation and cabin altitude threshold configured.
[5] Available for systems with multiple sources. [6] Available when M_{MO} value is configured.
[7] Indicator is hidden when flight director is active. [8] Available with TXi software v3.21 and later.
[9] Style setup option available with TXi software v3.40 and later.
[10] Available with TXi software v3.50 and later. [11] Installations with an autopilot: Flight Director key replaces Aircraft Symbol key when configured for flight director. Availability dependent upon configuration.
[12] Altitude Setup menu and knob function setting available with TXi software v3.61 and later.
[13] Function availability and alert options dependent upon configuration. Requires TXi software v3.61 or later.
[14] Available with TXi software v3.70 and later. [15] Available with TXi software v3.80 and later.

Extreme Attitude Indications

FEATURE REQUIREMENTS

For extreme attitude declutter mode option:

- *TXi software 3.80 or later*

FEATURE LIMITATIONS

- *Availability of selectable mode option dependent upon configuration*

Extreme Pitch

To aid in recovery from extreme pitch attitude, red chevrons are shown between major pitch marks from 80° nose down to 30° nose down, and from 80° nose up to 50° nose up. Red chevrons always point toward 0° pitch.

If enabled, the PFD employs an extreme attitude declutter mode to improve instrument scan and facilitate aircraft recovery from extreme attitudes.

Extreme Roll

The PFD declutters if pitch exceeds 20° nose down or 30° nose up, or if bank angle exceeds 65°. When decluttered, HSI Map reverts to a standard HSI depiction until the PFD exits extreme attitude declutter mode.

The HSI Map option is accessible from the PFD menu. For information about this advanced feature, read *HSI Map* in section 4.

Data removed during extreme attitudes

- Open menus and keyboards
- GS
- TAS
- Air temperature
- Flight director command bars
- Marker beacon annunciation
- Vertical deviation indicator
- Clock/timer
- Selected Altitude control
- Vertical Speed control
- Selected IAS
- Bearing pointer window(s)
- GPS navigation status
- Fast/Slow indicator
- **CDI** source selection key
- PFD **Menu** key
- PFD **Full** key (GDU 1060 only)
- Standard rate turn indicators
- GPS height above terrain (AGL)
- Wind field
- Selected heading
- Selected course
- Barometric pressure setting
- DME
- **Advisory** key

EXTREME ATTITUDE DECLUTTER MODE KEY

You may toggle extreme attitude declutter mode on or off at any time.[1] This mode is active by default.

Open the PFD Setup menu and tap **Extreme Attitude Declutter**.

AHRS(1/2) KEY

- Allows pilot to change the current AHRS source while extreme attitude decluttering is in effect
- Replaces **PFD Menu** key during extreme attitudes

[1] TXi software earlier than v3.80: Selectable mode option not available. PFD declutters automatically when conditions for extreme attitude declutter mode are met.

TURBINE AIRCRAFT

On/off controls reside in the Speed Bugs page of the PFD menu.

- Tap **Menu** > **Speed Bugs**, or
- Tap anywhere on the airspeed tape

For convenience, the Speed Bugs page automatically opens during power up to present V-speed settings for takeoff.

Opening the page while the aircraft is in-air provides V-speed settings for landing.

Enable/disable individual V-speeds by:

- Toggling the appropriate on/off keys, or
- Tapping **All On** to enable all displayed speed settings

Tapping **All Off** disables all displayed V-speed settings.

Set or change V-speed reference values by tapping the associated data entry key and entering the value on the provided keypad.

Takeoff Reference Speeds:

V_1 V_R V_2 V_{ENR}[1]

Landing Reference Speeds:

V_{AP} V_{ENR}[1] V_{REF}

Enable Aural Callouts for Takeoff Speeds

Allow audio callouts to alert you when the aircraft exceeds a configured takeoff speed. Tapping the **Aurals** icon enables callouts for all takeoff V-speed(s): V_1, V_R, V_2

Callouts for individual takeoff speeds may be disabled by your installer.

[1] Depending on airframe, the V_{ENR} takeoff reference speed may be configured with a custom label.

Speed Constraint Indications

FEATURE REQUIREMENTS

- *GTN Xi series navigator with software v21.02 or later*
- *Speed Constraint setup option enabled by pilot on the configured GTN Xi*
- *VNAV function enabled by installer*

Constraint values display in a dedicated field. The location of this field varies depending on PFD layout.

GDU 700L/1060
(Full Screen View)

GDU 700P
GDU 700L (Menu Open)
GDU 1060 (MFD/PFD/EIS)

White bars indicate constraint type. The position of the airspeed value (above or below a single bar, or between two bars) denotes the required airspeed relative to that constraint.

At or above target airspeed

At target airspeed

At or below target airspeed

BARO Alerting

FEATURE REQUIREMENTS

- *TXi software v3.21 or later*

Enable this function to receive altimeter setting prompts when reaching a specified transition altitude, or when inadvertently setting the incorrect selected baro mode (STD BARO vs. non-STD BARO).

When an alert is triggered, the altimeter setting (selected baro) value flashes.

Controls for setting BARO alerting behavior reside in the Altitude Setup menu.

BARO Alert	Toggles the alerting function on or off.
Transition Altitude	Allows entry of a numeric transition altitude.

From the GDU 700( ) PFD:

Tap **Menu** > **System** > **PFD Setup** > **Altitude Setup**.

From the GDU 1060 PFD:

Tap **Menu** > **PFD Setup** > **Altitude Setup**.

BARO alerts are a useful reminder to set the standard baro value, or to input the local baro value.

ENABLE BARO ALERTING

1. Navigate to the Altitude Setup menu.
   - *GDU 700( ):* Tap **Menu** > **System** > **PFD Setup** > **Altitude Setup**.
   - *GDU 1060:* Tap **Menu** > **PFD Setup** > **Altitude Setup**.
2. Toggle **BARO Alert** on.
3. Select **Transition Altitude** and enter a transition altitude.

Once enabled, altimeter setting prompts trigger when the barometric altitude is valid and any of the following conditions are true.

Condition 1	Condition 2
• Aircraft climbs through the transition altitude plus 280 ft • STD BARO is inactive	• Aircraft descends through the transition altitude minus 280 ft • STD BARO is active
Condition 3	**Condition 4**
• Aircraft is 280 ft or lower below the transition altitude • Baro mode is STD BARO	• Aircraft is 280 ft or higher above the transition altitude • Baro mode is other than STD BARO

Alerting is stopped when a change is made to the BARO altimeter setting (i.e., STD BARO is toggled on/off) and either of the following conditions are true.

- Aircraft descends through an altitude 200 ft above the transition altitude
- STD BARO is inactive

Or

- Aircraft ascends through an altitude 200 ft below the transition altitude
- STD BARO is active

DISABLE BARO ALERTING

Open the Altitude Setup menu and toggle **BARO Alert** off.

Changing Heading Modes

FEATURE REQUIREMENTS

- *TXi software v3.70 or later*
- *GRS 7800 for DG free mode*
- *GSU 75 for HPM mode*

FEATURE LIMITATIONS

- *Heading mode option available when the AHRS is configured for HPM or DG free mode*
- *SYNC to GPS Track function available only with valid GPS*

Heading mode selection and slewing control options reside in the HDG Mode control menu.

"FREE" annunciates above the current heading value when DG free mode is active. "HPM" annunciates when HPM mode is active.

You can access the menu one of two ways:

- Select **HDG Mode** from the PFD Setup menu.

Or

- Tap the current heading field atop the HSI

Enable HPM or DG free (*free gyro*) mode by toggling the associated on/off key (**DG** or **HPM**).

Controls for slewing the heading are available once HPM/DG free mode is active.

HDG -/+	Slews the heading in the indicated direction when you tap and hold the key. Depending on configuration, the heading will slew at a slow rate for a predefined number of seconds and then at a faster rate until you release the key.
SYNC to HDG Bug	Slews the heading at a steady rate until reaching the value set in the heading bug.
SYNC to GPS Track[1]	Slews the heading at a steady rate until reaching the current GPS Track direction.

HPM/DG free mode decouples the AHRS indicated heading from the magnetometer, preventing continuous updates of the actual magnetic heading value. In such cases, manual correction of the AHRS heading is required. This option is helpful when no magnetometer information is available (e.g., at extreme latitudes).

[1] Available only with valid GPS.

Current heading value and heading mode annunciation ("HPM" or "FREE") turn yellow when:

- The system recommends enabling HPM/DG free mode, such as when a loss of magnetometer information occurs during normal operation.
- The system recommends disabling HPM/DG free mode because the magnetometer is providing valid information.

These indications are white when no change in mode setting is necessary.

AUTOMATIC HEADING MODE SYNCHRONIZATION

HDG Mode menu options are grayed out while synchronization is active.

If configured, heading mode settings automatically synchronize between AHRS 1 and AHRS 2. When this occurs, the menu of the AHRS not receiving commands is unavailable until synchronization is complete.

If multiple displays are controlling the same AHRS, the second menu to be opened is unavailable until the original menu closes. This prevents the possibility of multiple simultaneous control inputs.

G-meter

FEATURE REQUIREMENTS

- *TXi software v3.21 or later*

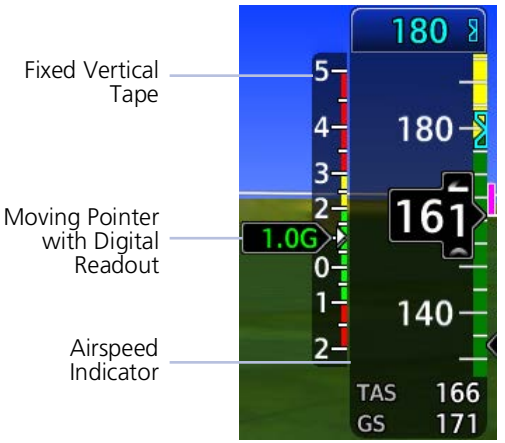
FEATURE LIMITATIONS

Selectable instrument format options available with TXi software v3.40 and later.

PC-12 aircraft: G-meter vertical tape and Fast/Slow indicator are mutually exclusive. Only the G-meter digital readout format is available when the Fast/Slow indicator is active.

An optional G-meter indicates acceleration (G-force) along the aircraft's vertical axis. This information can be valuable during turbulence or aerobatic maneuvers.

Instrument format options are dependent upon screen layout. In expanded layouts, the G-meter may be displayed as a fixed vertical tape to the left of the airspeed indicator.

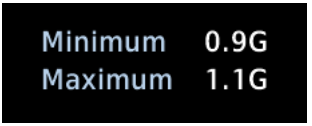


Graduations, markings, and white markers show the attained extremes for the current flight.

A moving pointer and digital readout display the two digit g-force value in the color of the currently active marking.

Markings are installer configurable.

In spatially constrained layouts, the digital readout is below the airspeed tape.



Attained minimum and maximum acceleration values are viewable in the G-Meter Setup menu.

From the GDU 700( ) PFD:

Tap **Menu** > **System** > **PFD Setup** > **G-Meter Setup**.

From the GDU 1060 PFD:

Tap **Menu** > **PFD Setup** > **G-Meter Setup**.

G-METER SETUP OPTIONS

G-Meter Setup Menu

- Display G-Meter
- Style
  - Select instrument format [1, 2]
- Reset Min/Max

From the setup menu you may:

- *Display the G-meter:* Tap **Display G-Meter**.
- *Change the instrument format:* Tap **Style**. Options include Gauge and Digital.[1, 2]
- *Reset the attained minimum and maximum acceleration values:* Tap **Reset Min/Max**.

During a power cycle, GDU retains the display setting, but not the indicated minimum and maximum acceleration values.

4 Advanced Features

AFCS Lateral & Vertical Mode Annunciations

VERTICAL MODE ANNUNCIATIONS	
ALT	Altitude Hold
ALTS	Selected Altitude Capture
APR	Approach
GA	Go Around
GP	Glidepath
GS	Glideslope
IAS	Indicated Airspeed
LVL	Level Hold
OSP	Overspeed Protection[1]
PIT	Pitch Hold
USP	Underspeed Protection[1]
VNAV	Vertical Navigation
V[1]	
VPTH	Vertical Path
VS	Vertical Speed
FLC	Flight Level Change[1]

LATERAL MODE ANNUNCIATIONS	
BC	Backcourse Navigation
GPS	GPS Approach
	GPS Navigation
HDG	Heading
LVL	Level Hold
LOC	Localizer Approach
	Localizer Navigation
NAV	Navigation
ROL	Roll Hold
ROL	Roll Hold
VAPP	VOR Approach[1]
VOR	VOR Navigation

[1] GFC 600 only.

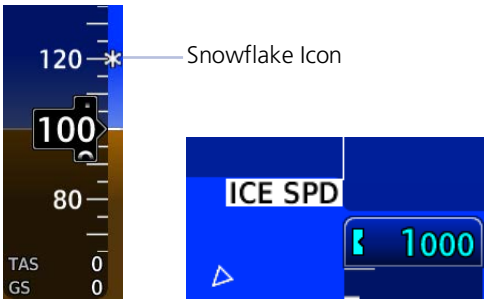
AFCS Alert Annunciations

GFC 500/600 ALERTS, FIXED WING	
PFT	Preflight test in progress.
PFT	Preflight test failure.
AFCS	Autopilot failure.
AP	Autopilot is automatically disengaged.
AP	Autopilot is manually disengaged.[1]
PTRM	Pitch trim failure. Autopilot may remain engaged. If autopilot disengages, re-engagement cannot occur until after the problem is resolved. May be red or yellow.
↑ELE	Mistrim condition requiring nose up elevator trim.
↓ELE	Mistrim condition requiring nose down elevator trim.
←AIL	Mistrim condition requiring roll trim to the left.
AIL→	Mistrim condition requiring roll trim to the right.
←RUD	Mistrim condition requiring rudder trim to the left.
RUD→	Mistrim condition requiring rudder trim to the right.
MAXSPD	Overspeed protection is active.
MINSPD	Underspeed protection is active.
YAW	Yaw damper failure. May be red or yellow.
RB PFT	Rudder bias preflight test in progress.[3, 6]
RB OFF	Rudder bias is manually disabled.[2]
RB FAIL	Rudder bias system is inoperative.[2]
R ENG	Low power detected on right engine. Rudder bias system is active.[2]
L ENG	Low power detected on left engine. Rudder bias system is active.[2]
V	VNAV is automatically disabled during normal operation.[3, 6]
ICE SPD	Airspeed is below the airframe's minimum speed for operating in icing conditions. Anti-ice function is active.[3, 6, 7]

GFC 500/600 ALERTS, FIXED WING	
GLIDE	Smart Glide is active. Appears during IAS vertical mode.[5]
EDM	Emergency Descent Mode is active.
EDM	Emergency Descent Mode is inhibited or in override mode.
ESP	Electronic Stability and Protection is active.[3, 4]

[1] Annunciation flashes for 5 seconds, then turns off. [2] GFC 600 twin-engine aircraft only. [3] GFC 600 only.
[4] Available with TXi software v3.21 and later. [5] Available with TXi software v3.30 and later.
[6] Available with TXi software v3.80 and later.
[7] Annunciation overridden when underspeed protection ("MINSPD") is active.

FOR FIXED WING AIRCRAFT: A snowflake icon appears on the airspeed tape when TXi EIS or GMC 605 detects that the anti-ice function is active.



"ICE SPD" annunciates once the airspeed falls below the minimum speed required for flight into known icing conditions.

Anti-ice Active Indications

Carbon Monoxide Alerts

NOTE

Always take appropriate emergency measures as described in the AFM/POH.

FEATURE REQUIREMENTS

- *GCO 14*
- *GI 275 or GTN Xi series navigator (host)*
- *TXi software v3.80 or later*

OPTIONAL COMPONENTS

- *Additional alerting features, including aural caution alerts and custom advisories, are available only on capable GTN Xi[1] and GI 275[2] units in the system*

CO concentration alerts and inhibit control are available for installations equipped with a Garmin carbon monoxide detector.

GCO 14 Features

- Issues visual caution alerts when CO concentration meets the activation criteria
- Includes alert inhibit option

[1] Available with GTN Xi software v 21.01 and later. [2] Available with GI 275 software v3.40 and later.

Alert Inhibit

The **Inhibit CO Alerts** control is accessible via the System page. Toggle the function on or off when appropriate.

From the MFD Home page:

Tap **System** > **Setup** > **Inhibit CO Alerts**.

From the GDU 700( ) PFD:

Tap **Menu** > **System** > **Inhibit CO Alerts**.

From the GDU 700( ) EIS:

Tap **Menu** > **System** > **Inhibit CO Alerts**.

Always use discretion when inhibiting CO caution alerts. Re-activate the alert function when appropriate.

CO Alert Indications

When a CO alert occurs:

- A textual caution annunciation appears at the bottom of the screen

A caution alerts you when the concentration of carbon monoxide in the cabin meets the activation criteria.

CO alerts have a lower priority than terrain and traffic alerts.

PFD Annunciation

EIS/MFD Annunciator Bar

CO Level Alert Annunciation

ANNUNCIATION	CONDITION | POP-UP | AURAL MESSAGE
CO LEVEL	**Condition:** CO concentration meets the activation criteria **Pop-up Alert:** No **Aural Message:** No

CO caution alerts may be accompanied by an aural message on the host LRU.

Alert Types

Not all of the following alerts may be available.

ALERT TYPE	CONDITION
Approach Speed	Approach speed has deviated from V_{REF} by more than the configured threshold.
Baro/GPS Mismatch	Barometric and GPS altitudes differ by more than the configured threshold value.
Crosswind	The currently calculated crosswind component exceeds the maximum demonstrated crosswind or the crosswind limitation from the AFM/POH.
Descent Speed[1, 2]	*VFR Approach:* Descent speed is greater than the configured descent speed threshold for the active approach type.
	IFR Approach: Descent speed differs from the computed target speed by more than the configured descent speed tolerance.
Flaps Not in Landing Configuration[1, 2, 3]	Flaps are not in position for landing.
Gear Not in Landing Configuration[1, 2]	Gear is not down and locked.
Lateral Deviation	The magnitude of the lateral deviation is greater than the configured threshold value.
Tailwind	The currently calculated tailwind component exceeds the maximum tailwind component from the AFM/POH.
Vertical Deviation[1, 4]	The magnitude of the vertical deviation is greater than the configured threshold value. The type of indication is applicable to the type of approach being flown (Glidepath or Glideslope).

To determine the configured threshold values for your specific aircraft, consult the AFMS.

[1] Alert type not available when configured for TAWS-A. [2] Available with TXi software v3.80 and later.
[3] For manufacturer recommended or required flap positions, consult the AFM/POH.
[4] "Glidepath" for GPS approaches; "Glideslope" for non-GPS approaches.

Alert Inhibit

Alert Suppression Options

- Inhibit All
- Speed Inhibit
- BARO Inhibit
- Crosswind Inhibit
- Tailwind Inhibit
- Course Inhibit
- GP/GS Inhibit
- Flaps Inhibit
- Gear Inhibit
- Sink Rate Inhibit

Suppression controls allow you to eliminate nuisance alerts during the associated conditions. These controls are accessible from the PFD Setup menu.

GDU 700( ): **Menu** > **System** > **PFD Setup** > **Stabilized Approach**

GDU 1060: **Menu** > **PFD Setup** > **Stabilized Approach**

Alert suppression control settings default back to install presets following a power cycle.

Stabilized Approach Alert Indications

Alert Priority

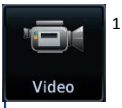
Alerts occur in order of priority, from highest (1) to lowest (9):

1. Gear
2. Flaps
3. Speed
4. BARO
5. Glidepath/Glideslope
6. Course
7. Sink Rate
8. Xwind
9. Twind

In the event of simultaneous alerts, only the highest priority alert displays, regardless of whether the alert is configured as aural, visual, or both.

Available aural and visual indications are dependent upon configuration.

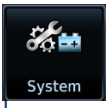
ALERT TYPE	ALERTING ZONE 1		ALERTING ZONE 2	
	AURAL	VISUAL	AURAL	VISUAL
Approach Speed	"Speed"	**SPEED**	"Speed, Speed	**SPEED**
BARO/GPS Mismatch	"Baro"	**BARO**	"Baro, Baro"	**BARO**
Crosswind	"Crosswind"	**XWIND**	"Crosswind, Crosswind"	**XWIND**
Descent Speed	"Sink Rate"	**SINK RATE**	"Sink Rate, Sink Rate"	**SINK RATE**
Flaps Not in Landing Configuration	"Flaps"	**FLAPS**	"Flaps, Flaps"	**FLAPS**
Gear Not in Landing Configuration	"Gear"	**GEAR**	"Gear, Gear"	**GEAR**
Lateral Deviation	"Course"	**COURSE**	"Course, Course"	**COURSE**
Tailwind	"Tailwind"	**TWIND**	"Tailwind, Tailwind"	**TWIND**
Vertical Deviation (GPS Approach)	"Glidepath"	**GLIDEPATH**	"Glidepath, Glidepath"	**GLIDEPATH**
Vertical Deviation (Non-GPS Approach)	"Glideslope"	**GLIDESLOPE**	"Glideslope, Glideslope"	**GLIDESLOPE**



[1]

- Source [3] (1 – 4)

- Status

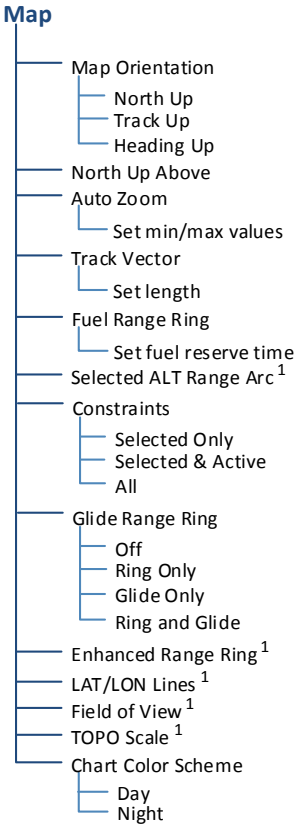


- System Status
  - Database SYNC
  - Chart Streaming
  - Update
- External LRUs [2]
- Setup
  - Date/Time
  - Nearest Airport Criteria
  - Startup Page Selection
  - WX Shortcut
  - Inhibit CO Alerts
  - Click Volume
- Units
- Backlight
- Crew Profile
- Flight Stream [4]
- Logs
  - Aircraft Log
  - Exceedances [1]
  - Export Data Log

MFD Setup

MFD SYSTEM SELECTIONS	
System Status	• View unit, software, and database information • Check standby database availability • Access Database SYNC, Chart Streaming, and manual database update functions
External LRUs	• Check status of all configured LRUs
Setup	• Select the MFD startup page and visibility • Set nearest airport criteria • Set the clock and click volume • Create Weather page shortcut • Toggle CO caution alerts on or off
Units	Specify units of measure for displayed data. Selections synchronize across all configured GDUs. Certain LRUs may contain unit settings independent of the TXi system. • Distance • Altitude • Temperature • NAV Angle
Backlight	• Adjust display brightness
Crew Profile	• Access crew profile management function
Flight Stream	• Access Bluetooth Setup and Wi-Fi Setup menus
Aircraft Log	• View engine and airframe cycle counters
Exceedances	• View and acknowledge exceedance advisories • Availability dependent upon unit configuration
Export Data Log	• Save logged data to SD card

Map Selections



[1] On/off functionality only.

All Map tab selections provide on/off and range setting options unless otherwise noted.

Shared Map Settings

Changes to the following map settings also take effect on the configured datalink weather app(s). You may adjust these settings from the appropriate Map Setup tab.

- North Up Above range setting and LAT/LON Lines (Map tab)
- Runway Extensions and waypoint display range settings (Aviation tab)
- Road Detail, City Detail, State/Province Borders, and River/Lake Detail (Land tab)

Map Orientation	• Specifies map display orientation • Label above North indicator shows current orientation
North Up Above	• Specifies range at which the map orientation changes to North Up

Auto Zoom	• Automatically adjusts page to display the next waypoint in flight plan at the closest possible map range
	• Presents SafeTaxi data while aircraft is on ground
	• Automatic functionality is overridden during manual zoom interactions. It resumes when:
	  • Another waypoint is in sequence
	  • Aircraft transitions from on ground to airborne
	  • Auto zoom range matches manual override range
	• Set minimum and maximum values to best meet operational needs

Track Vector	• Indicates current ground track • End of arrow represents aircraft position at the specified time interval
Fuel Range Ring	• Estimates the remaining range at the current fuel consumption rate and ground speed[1] • Calculations are based on the pilot specified fuel quantity in the fuel computer • Dashed green circle indicates selected range to reserve fuel • Solid yellow circle indicates total endurance range
Selected ALT Range Arc	• Represents location at which the aircraft is expected to reach selected altitude[2]
Constraints	• Displays altitude and/or speed[3] constraint labels within the flight plan
Glide Range Ring	• Identifies map region within estimated gliding distance and/or best glide airport • Options: Ring Only, Glide Only, Ring and Glide
Enhanced Range Ring	• Provides a more precise indication of distance between the aircraft and map objects • Fixed range value at half the distance of NAV range ring
LAT/LON Lines	• Displays latitude and longitude lines
Field of View	• Depicts lateral terrain view presented in SVT[4] • Synthetic Terrain function on PFD must be active for indication to display
TOPO Scale	• Displays a topographical elevation scale
Chart Color Scheme	• Changes chart overlay color for day or night view

[1] Requires EIS. [2] Systems with at least one PFD. [3] Speed constraints available with GDU TXi software v3.80 and later and GTN Xi software v21.02 and later. [4] GDU 1060 only.

Edit Data Fields

To select a flight plan data column, tap **Edit Data Fields**. Columns are arranged in numerical order (1 - 3).

To restore columns to default display settings, tap **Restore Defaults**.

Data Field Selections

ALT - Altitude Constraint
CUM - Cumulative Distance
DIS - Distance
DTK - Desired Track
ETA - Est. Time of Arrival
ETE - Est. Time En Route
FPA - Flight Path Angle
SPD - Speed Constraints (Advisory)

Selections are identical for each column.

By default, flight plan information fields display:

Column 1: DTK

Column 2: DIS

Column 3: CUM

VNAV Guidance Indications

WARNING

Do not rely solely on VNAV guidance when navigating horizontally and vertically around user-defined airports. It is the pilot's responsibility to ensure separation from terrain and obstacles during an approach to a user-defined airport.

ALTITUDE CONSTRAINT INDICATIONS

COLOR DEFINITIONS	
White	Altitude is for reference only.
Cyan	GTN honors the constraint for vertical guidance when the VNAV function is active.
Magenta	Active constraint.

When the VNAV function is active on GTN, altitudes may be accompanied by one or two altitude restriction bars. The position of the value (above or below the bar, or between two bars) denotes the required aircraft altitude relative to that constraint.

Dual values annunciate when the aircraft needs to cross between two altitudes.

Constraint values display in MSL or flight level (FL). Constraints at airports may be specified as MSL or AGL.

Examples:

Cross at or Above 5,000 ft

Cross at or Below 5,000 ft

Cross at 5,000 ft

Cross Between 5,000 ft and 6,000 ft

Speed Constraint Indications

NOTE

The system uses jet aircraft reference speeds for procedures containing multiple speed constraints. Always verify airspeeds when loading a procedure for another type of aircraft.

FEATURE REQUIREMENTS

- *GTN Xi series navigator with software v21.02 or later*
- *VNAV function enabled by installer*

Like altitude constraints, speed constraints may be accompanied by one or two restriction bars. The position of the value (above or below the bar, or between two bars) denotes the required airspeed relative to that constraint.

Speed constraint values may display in knots, KPH, MPH, or Mach (M) based on configuration and current mode selection (IAS or Mach). Unlike altitude constraints, speed constraint values always appear white (reference only).

Examples:

Cross at or Above 200 kt

Cross at or Below 200 kt

Cross at 200 kt

AIRSPEED TYPES	
	**Published Reference Speed** Airspeed is retrieved from the navigation database. Bar above and/or below the value indicates constraint type.
	**Pilot-specified Constraint** Pencil icon indicates manual designation or manual data entry.
	**No Constraint Value** Dashes indicate when airspeed is not available, either from the navigation database or by manual entry.

Speed constraints are *not* VNAV data, nor do they affect VNAV descent calculations.

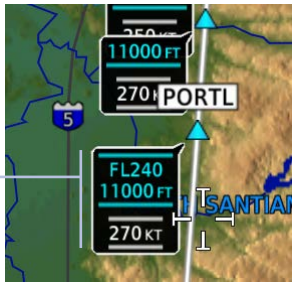
Altitude Constraint Labels

Altitude Constraint Label

Altitude constraint data display as text labels on Map. Units are typically feet or meters depending on current altitude setting in the System Units app. They display as flight level altitudes if specified as such on the navigator.

If excessive labels are cluttering the map, this feature may be turned off.

Speed Constraint Labels



Altitude Constraint Label with Speed Constraint

While not VNAV data, speed constraint text labels may appear on Map along with altitude constraint labels.

Units are typically knots, KPH, or MPH depending on configuration. They display as a Mach value if specified as such on the navigator.

ALERT TYPE		CONDITION
FLTA	**Imminent Impact**[1]	Aircraft reaches the minimum clearance altitude of any obstacle (IOI), terrain (ITI), or power line (ILI) in the projected flight path.
	Reduced Clearance[1]	Aircraft's vertical flight path is projected to be within the minimum clearance altitude of an obstacle (ROC), terrain (RTC), or power line (RLC).
Premature Descent[2]		Aircraft is significantly below the normal approach path for the nearest runway. • Altitude is <700 ft above terrain • Distance from destination airport is 15 nm or less
Excessive Descent Rate		Aircraft descends toward terrain at an excessive rate.
Excessive Closure Rate[3]		Aircraft closes upon terrain at a rate excessive for gear and flaps.
Negative Climb Rate		Aircraft loses altitude following takeoff. • Altitude is <700 ft above terrain • Distance from departure airport is 5 NM or less • Deviation from departure heading is <110°
Flight Into Terrain		Aircraft is too low with respect to terrain. Based on landing gear status, flap position, and ground speed.
Excessive Below Glideslope or Glidepath Deviation		Aircraft is significantly below the glidepath for the selected approach. Active only after departure and when the following conditions are met. • Altitude is <1,000 ft AGL • Flaps are in landing configuration • Gear is configured for landing • ILS, LPV, or LNAV/VNAV approach is active and the unit is indicating vertical navigation

[1] Alerting inhibited <200 ft AGL within 0.5 nm of approach runway or <125 ft AGL within 1.0 nm of runway threshold.

[2] Alerting inhibited within 0.5 nm of approach runway or <125 ft AGL within 1.0 nm of runway threshold. Alerting thresholds for final descent are based on current position, speed, and flight path data.

[3] Alerting inhibited within 5 nm of nearest airport, except when FLTA is not available. In such cases, "TAWS N/A" or "TAWS FAIL" annunciates and ECR alerting remains active until landing.

Reciprocating Engines

EIS Display

The EIS displays engine, electrical, and fuel information using parameter specific indicator types (e.g., analog indicators, digital data fields, bar graphs, horizontal and vertical bar gauges).

The EIS instruments replace traditional analog gauges used for monitoring engine parameters. Always consult the AFM or POH for engine operating limitations.

Layout varies according to:

- Display type
- Number and type of engines in aircraft
- Number and type of installed sensors

GDU 700( ) EIS

GDU 700P EIS

Multi-engine

When configured for EIS only, GDU 700( ) is a dedicated full-screen display of engine instrumentation.

GDU 700L EIS

Single Engine

40% 60%

GDU 700L with EIS/MFD

When configured for EIS/MFD, GDU 700L dedicates 40% of its screen to a full-time display of primary EIS information, with the rest of the screen serving an MFD function. This configuration supports single-engine aircraft.

GDU 1060 EIS

With the display of EIS enabled, GDU 1060 dedicates 20% of its screen to a full-time display of primary EIS information. In addition, a dedicated Engine page is accessible from the MFD Home page. This page is available even if the EIS display is not enabled.

Tap the **Engine** icon to open the corresponding page (Home > **Engine**).

The MFD Engine page provides expanded information for select configured gauges. Other features include pilot selectable user fields, a graphical depiction of engine CHT/EGT/TIT values[1], and a **Menu** access key.

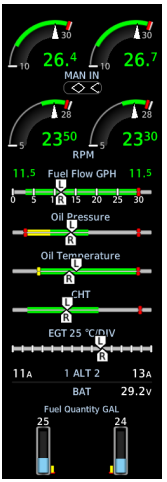
MFD Engine Page, GDU 1060

Single Engine

Multi-engine

Gauge Strip, GDU 1060

Single Engine



Multi-engine

The gauge strip presents an unobstructed compact view of primary engine information. Depending on configuration, the gauge strip may reside at the left or right edge of the GDU 1060 display.

Unlike the Engine page, the gauge strip has no selectable features.

[1] Primary EGT and TIT dependent upon aircraft type.

EIS Setup

Engine Menu

- Fuel Computer
  - Set full/tabs
  - Specify fuel quantity remaining
  - Sync from gauges [1]
  - Calibrate FFLOW
  - Enable Aircraft Weight [5]
- Engine & Flight Hours [2]
  - View total hours
- Zero Fuel Weight [3]
  - Enter total zero fuel weight
- Advisories
  - Specify advisory limits
- Engine Temperature [4, 5]
  - Reset Lean
  - Reset Normalize
  - Display Detail
  - Lean Assist Alerts
  - Lean Source
  - FF Peak

The **Menu** key provides access to the fuel computer, engine and flight hours, engine advisories, and lean modes.
On GDU 700( ), the Engine menu also provides controls for customizing system settings.

GDU 700( ) EIS setup functions are accessible from the System menu. On GDU 1060, they reside on the MFD System page.

System GDU 700( )

- Units
  - Select units
- Status
  - External LRUs
- Backlight
  - Set intensity offset
- Engine Temperature [4, 5]
  - Reset Lean
  - Reset Normalize
  - Display Detail
  - Lean Assist Alerts
  - Lean Source
  - FF Peak
- Logs
  - Aircraft Log
  - Export Data Log
- Inhibit CO Alerts [5]

System Page GDU 1060

- External LRUs
  - View LRU status
- Units
  - Select units
- Backlight
  - Set intensity offset
- Logs
  - Aircraft Log
  - Export Data Log
- Setup
  - Inhibit CO Alerts [5]

[1] Available with TXi software v3.21 and later. [2] This page is informational only.
[3] Available with TXi software v3.61 and later. Availability dependent upon configuration.
[4] Mode selections dependent upon aircraft configuration.
[5] Available with TXi software v3.80 and later. Availability dependent upon configuration.

EIS SETUP SELECTIONS	
Units	Specify units of measure for fuel computer and pilot selectable gauges. Selections synchronize across all configured GDUs.[1] • Distance • Temperature • Fuel Computer
Status	• View unit and software information • Check status of all configured LRUs
Backlight	• Adjust display brightness
Aircraft Log	• View engine and airframe cycle counters
Export Data Log	• Save logged data to SD card
Inhibit CO Alerts	• Toggle CO caution alerts on or off
Engine Temperature	Access available CHT/EGT mode options.[2] • Reset Lean • Lean Assist Alerts • Reset Normalize • Lean Source • Display Detail • FF Peak

[1] Engine gauge units are not adjustable. [2] Options dependent upon configuration.

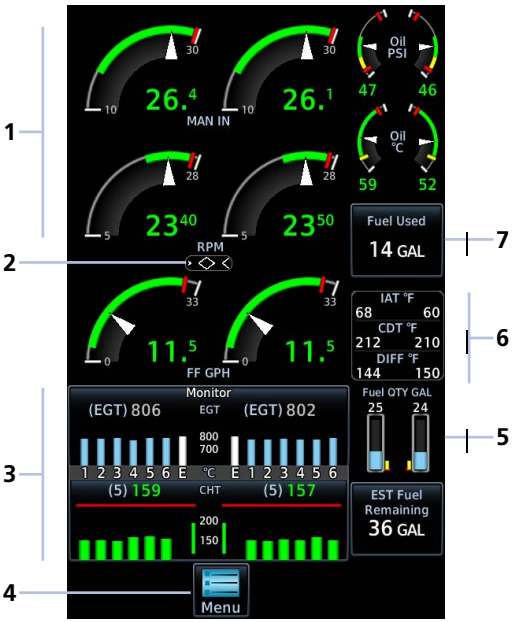
Gauge & Indicator Types

GDU 700P EIS Configured for Dial Gauges

Multi-engine

1	Standard Dial Gauges	**5**	Fuel Quantity Gauge
2	Propeller Sync Indicator	**6**	Dual Digital Data Fields
3	Engine Temperature Graph	**7**	Selectable User Field
4	Menu Key		

GDU 700P EIS Configured for Arc Gauges



Multi-engine

1	Arc Style Gauges	**5**	Fuel Quantity Gauge
2	Propeller Sync Indicator	**6**	Dual Digital Data Fields
3	Engine Temperature Graph	**7**	Selectable User Field
4	Menu Key		

COMMON EIS DISPLAY ELEMENTS	
Engine Gauges	Display a visual representation and a digital readout of the specified engine parameter value.[1] The style of gauge (arc or standard dial) depends on configuration.[4]
Digital Data Fields	Display a digital readout value of the engine parameter.[1] These include single or dual input values depending on system configuration. Placement corresponds to engine location.
Fuel Quantity Gauges	Display fuel amounts for the specified fuel tanks.[3]
Selectable User Fields	Opens a menu of the selectable data fields available for display. The type of parameters available for selection is determined during installation. A white border differentiates selectable user fields from non-selectable digital data fields.
Engine Temperature Graph	Provides digital EGT, CHT, and TIT[2] cylinder readings in three graphical views: monitor, lean, and normalized. • EGT, CHT, and TIT[2] digital values are selectable by cylinder • After 10 seconds, values default to the hottest cylinder on each engine • Alternate views via knob turn or swipe
Menu Key	Provides access to the fuel computer, pilot selectable settings, and alert inhibit functions.

Read more about EIS display features in their respective sections.

[1] Limits are configured according to system design or the AFM/POH. They are not pilot selectable.
[2] Primary EGT and TIT indications are dependent upon aircraft type.
[3] Fuel gauges are configured and calibrated during installation.
[4] Piston arc and standard dial gauge formats are mutually exclusive.

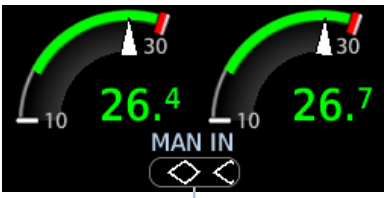
PROP SYNC INDICATOR

On multi-engine aircraft, a prop sync indicator provides a visual reference for synchronizing multi-engine RPM. This indicator uses inputs received from the left and right engine tachometer to show a comparison of the matched RPM.

The style of indicator depends on the configured gauge format: arc or standard dial.

Arc Gauge Format

The speed at which the indicator moves left or right is determined by the RPM differential between the two engines.

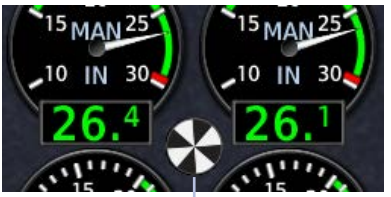


Prop Sync Indicator

- If RPM for both engines is the same, diamond-shaped symbols appear and motion stops.
- If RPM varies between engines, arrow-shaped symbols point and move in direction of the faster engine.

Standard Dial Gauge Format

The speed at which the indicator rotates is determined by the RPM differential between the two engines.



Prop Sync Indicator

- If RPM for both engines is the same, indicator remains stationary.
- If RPM varies between engines, the indicator rotates in direction of the faster engine.

ENGINE GAUGES

TXi offers two styles of piston gauges: arc and standard dial[1]. Both may be configured to include additional features, such as digital readouts, custom labels, and dynamic gauge markings.

Piston arc gauges are truncated, round, and have fewer graduations.

Tachometer

Oil Pressure

Standard round gauges completely replace analog gauges.

Tachometer

Oil Pressure

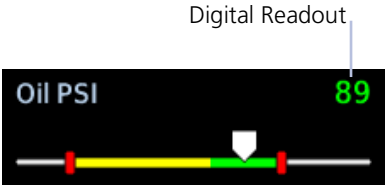
For aircraft equipped with a starting vibrator, tachometer RPM readings are not accurate during engine cranking. For aircraft that measure engine RPM using P lead sensors, the readings may momentarily fluctuate when selecting operation on a single magneto.

[1] Gauge formats are mutually exclusive and dependent upon configuration.

BAR GAUGES

These gauges display engine parameter information on a single horizontal or vertical bar. They have single or dual pointers depending on engine type.

Linear indications move from left to right on horizontal bar gauges. They move up and down on vertical bar gauges.



If configured, a corresponding digital readout displays to the right of the gauge.

NON-LINEAR GAUGES

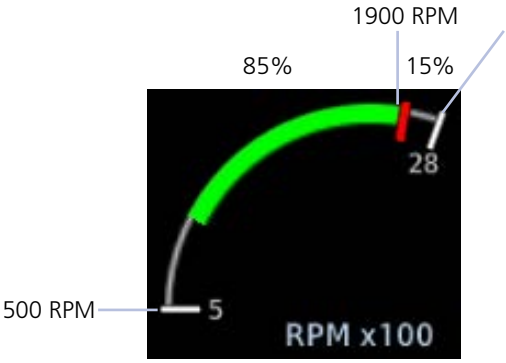
NOTE

Prior to operation, pilots must familiarize themselves with the gauge configuration provided as part of the Configuration Summary. The only other reference to non-linear scaling is current needle position with respect to the digital readout value.

FEATURE LIMITATIONS

- *Non-linear scaling not available for piston bar gauges*

Some reciprocating engine installations may be configured for non-linear gauges. These are arc gauges that provide non-linear scaling for up to six consecutive segments.



Resolution varies across a parameter's operating range, allowing greater needle sensitivity for more critical ranges.

Labels may vary based on configuration.

Non-linear Arc Gauge

Markings & Indications

NOTE

It is the responsibility of the pilot in command to know and abide by all published limitations and operating ranges in the POH/AFM.

GAUGE MARKING COLOR

Gauge marking colors are in accordance with the criticality of operating limits. Units of measure, limits, and gauge colors are configured during installation.

- Green arc denotes a normal operating range
- Yellow radial line or arc denotes a caution range
- Red minimum/maximum line or arc denotes a limitation

When an indication is within a colored gauge range, the color of the digital readout will be the same as the range.

STATIC REFERENCE MARKINGS

Gauge markings may be configured to denote special gauge values defined in the FMS or placard. They may include: • Arc • Dot[1] • Line/Radial • Minimum Line • Maximum Line • Triangle[1]

Reference markings are non-alerting.

Standard Dial Gauge

Arc Gauge

[1] Available with TXi software v3.61 and later.

RANGE INDICATIONS & ALERTING

Alert Suppression

The following gauges do not alert when the tachometer indicates less than 100 RPM and the aircraft is on ground.

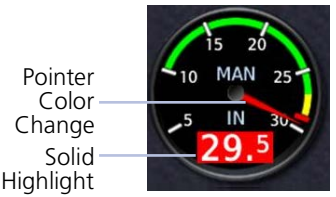
- Fuel flow
- Fuel pressure
- Manifold pressure
- Oil pressure

TXi EIS gauges may be configured to alert the pilot when an engine indication:

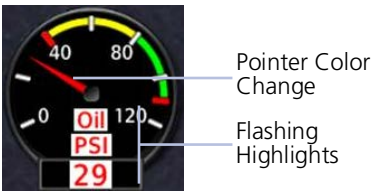
- enters a caution or warning range
- reaches a specified alerting value

When alerted, gauge features change color, and the gauge label and digital readout (if applicable) are highlighted in the appropriate color. Color highlighting may flash depending on configuration.

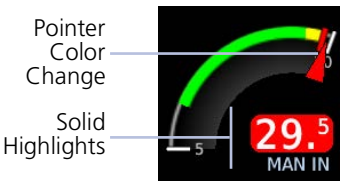
Power Gauge

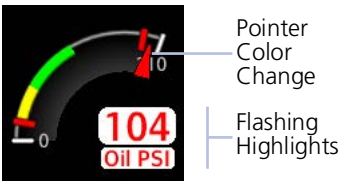


Performance Gauge



Standard Dial Gauge





Arc Gauge

Marking Sets

The following examples depict the implementation of dynamic markings in a manifold pressure gauge. Markings are configured to adjust the green arc and red line maximum values based on pressure altitude.

Dynamic Markings (Example)

Standard

The standard gauge markings are configured by the installer to match the existing manifold pressure gauge in the aircraft. This is the default marking set for the gauge.

Standard markings will display if the conditions for dynamic marking are not met.

20,000 ft

Gauge markings adjust to match the maximum manifold pressure for the pressure altitude.

In this example, the maximum manifold pressure decreases as the pressure altitude increases.

24,000 ft

Gauge markings dynamically adjust as pressure altitude thresholds are reached.

Unlike analog gauges, which require you to memorize limitations or interpret multiple markings, dynamic gauges present only the limitations applicable to specific situations or flight conditions.

EST Fuel Remaining Estimated amount of total fuel remaining[1, 3]	**Outside Air TEMP (EIS)** Outside air temperature as measured by the EIS OAT sensor[7]
Fuel Used Total fuel used since last update to estimated fuel remaining quantity[1, 3]	**Outside Air TEMP (ISA)** Degrees deviation from the International Standard Atmosphere model[4]
Range Total range based on remaining fuel and current ground speed[1, 3]	**Outside Air TEMP (RAT)** Outside ram air temperature[4, 8]
Endurance (HH+MM) Fuel endurance time in hours+minutes[1]	**Outside Air TEMP (SAT)** Outside static air temperature[4]
Fuel at Destination Estimated fuel amount at current flight plan destination[1, 2, 3]	**Outside Air TEMP (TAT)** Outside total air temperature[4]
Endurance at DEST Remaining fuel endurance time (hours+minutes) at destination[1, 2]	**CHT DIFF** Difference between hottest and coldest CHT for each engine[6]
Efficiency Fuel efficiency[3]	**EGT DIFF** Difference between hottest and coldest EGT for each engine[6]
Flight/Hobbs/Tach Hours Total flight, Hobbs, and tach hours[5]	**EST Current Weight** Estimated current aircraft weight[8, 9]
Clock Current time[8]	**EST Weight at DEST** Estimated aircraft weight at flight plan destination[8, 10]
Percent Power Percent of maximum rated engine power calculated from manifold pressure, RPM, fuel flow, and outside air temperature	

Read about Aircraft Weight feature enablement and zero fuel weight entry options in *Zero Fuel Weight*.

[1] Values are based on fuel computer calculations. [2] Requires an active flight plan from the navigator.
[3] Parameter units are pilot selectable. [4] Units are independent of PFD units.
[5] Hobbs hours accumulate when an engine is running. Flight hours accumulate when the aircraft is in air. Tach hours increment at a rate proportional to the configured cruise RPM.
[6] Units are dependent upon configuration. [7] Available with TXi software v3.21 and later.
[8] Available with TXi software v3.61 and later. [9] Requires valid estimated fuel remaining and zero fuel weight values. [10] Requires valid fuel remaining at destination and zero fuel weight values.

CHT/EGT

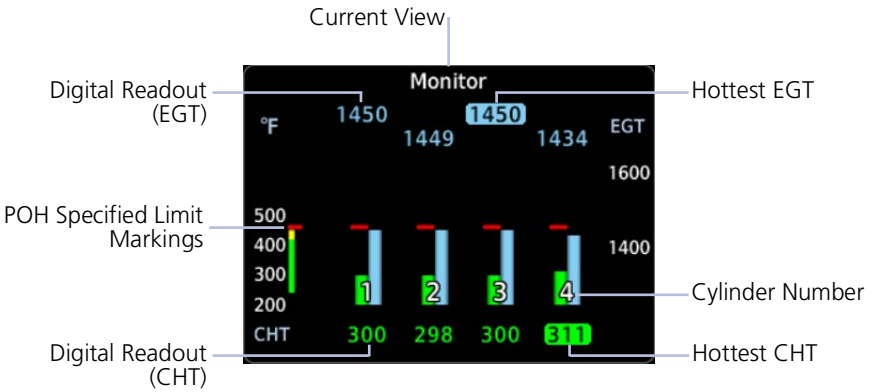
The EIS graphically displays CHT and EGT data for each cylinder.

Each bar graph contains the following components.

- Dynamic chart depicting cylinder temperature status
- Digital temperature reading of the highlighted cylinder
- Limit markings

The size of each graph varies according to aircraft type (i.e., single or twin engine aircraft), the number of cylinders per engine, and gauge configuration (i.e., TIT or primary EGT). Graduations are scaled and sized during installation.

Displayed markings and digital CHT/EGT values depend on view selection. The EIS provides three graphical views: monitor, lean assist (or *lean*), and normalized.



CHT/EGT Bar Graph
(Single Engine Consolidated Display)

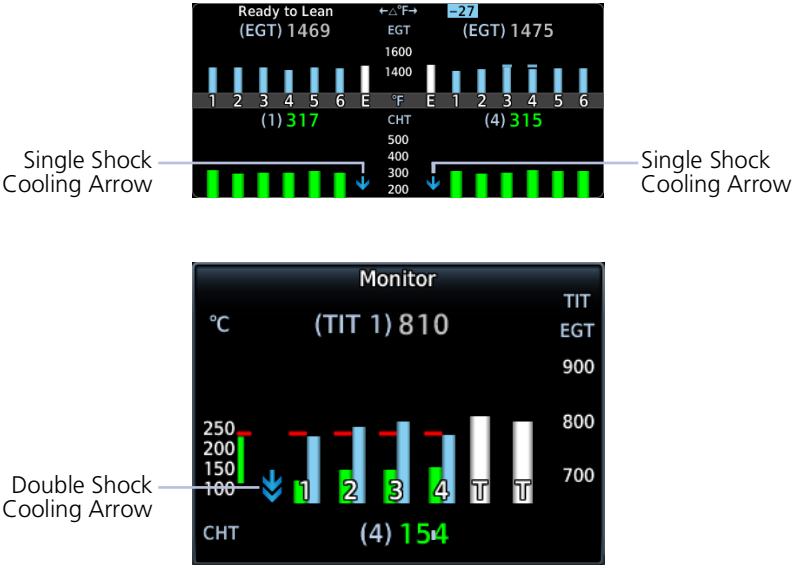
In layouts without space constraints, temperature graphs are customizable to show all digital readouts or only those corresponding to the hottest cylinders. Read more about these display options in *Mode Control Options*.

SHOCK COOLING INDICATIONS

A blue arrow indicates shock cooling on the temperature graph. The arrow type represents cooling rate.

EIS provides shock cooling indications in all views.

SHOCK COOLING ARROWS	
Blue Single Arrow	CHT is cooling at a rate faster than 30°F (16.7°C) per minute
Blue Double Arrow	CHT is cooling at a rate faster than 60°F (33.3°C) per minute



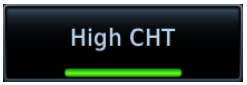
Shock Cooling Indications

VIEW-SPECIFIC COLORS

COLOR DEFINITIONS	
Green	CHT
Blue	EGT
Gray	PEGT/TIT

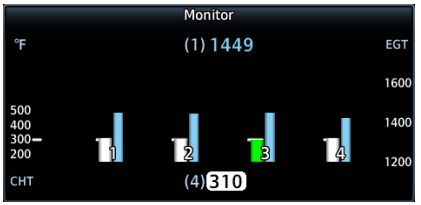
Temperature bar and digital readout colors denote the current view selection.

HIGH CHT ADVISORY



Set the temperature at which the system issues the high CHT advisory.

1. Tap **Menu** > **Advisories** > **High CHT**.
2. Tap the corresponding data entry key and specify the temperature limit value.

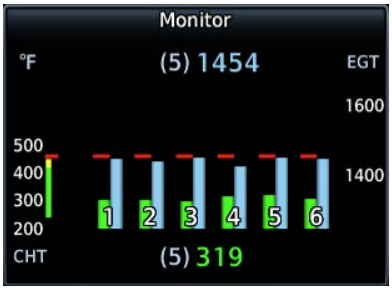


A horizontal white line appears on the CHT graph, indicating the alert temperature threshold.

When the temperature limit is exceeded, all affected cylinders turn white.

On GDU 1060, a vertical white line appears on the CHT bar of the EIS gauge strip (if configured).

LAYOUTS WITH SPACE CONSTRAINTS

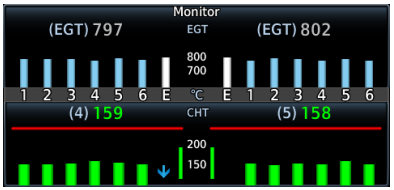


Graphs for single-engine configurations consolidate EGT and CHT cylinders on a single graph.

Display detail varies for engine temperature graphs based on space constraints and aircraft configuration.

If space is limited such that the graph cannot provide digital readouts for every cylinder, then only the values for hottest or selected cylinder are shown.

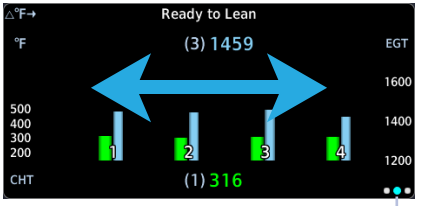
Tapping the graph displays values for the selected cylinder. After 10 seconds, values default to the hottest cylinder on each engine.



For multi-engine configurations, EGT graphs display in the upper half of the gauge while CHT graphs display in the lower half.

Graphs for multi-engine configurations show a split view of EGT and CHT cylinders.

CHT/EGT View Selection

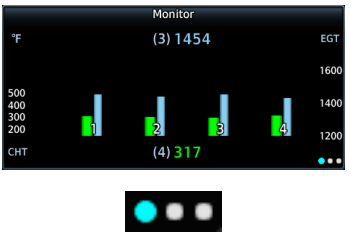


Active View Locater

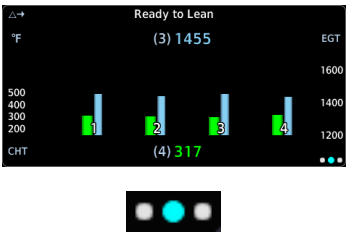
Swipe the graphical display or turn the inner knob to switch between CHT/EGT views.

Locater dots provide a momentary indication of current knob focus as you transition between views. Monitor is the default view.

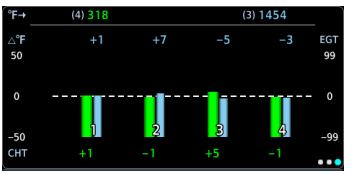
Monitor



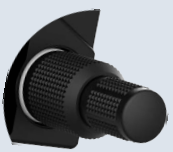
Lean



Normalized



CHT/EGT View Selection via Control Knob



CHT/EGT views are selectable from the locater bar. Turning the inner knob switches between monitor (MON), lean (LEAN), and normalized (NRM).

CHT/EGT Control Options

Engine Temperature Menu

- Display Detail [1]
  - Show All
  - Show Hottest
- Reset Lean
- Reset Normalize
- FF Peak
- Lean Assist Alerts
  - Set a lean assist alert
- Lean Source
  - Select the lean mode

CHT/EGT control options reside in the Engine Temperature menu (**Menu** > **Engine Temperature**). From here you can:

- Select the display detail level[1]
- Reset lean and/or normalized temperature values
- Disable peak fuel flow indication
- Set lean assist alerts
- Select the lean mode

Display Detail[1]	Select the CHT/EGT display level. For a simplified view, select Show Hottest.
Reset Lean	Reset and start a new Lean Assist process. Requires pilot confirmation.
Reset Normalize	Reset the normalized temperature baseline values to the current values. Requires pilot confirmation.
FF Peak	Enable or disable peak indications on the fuel flow gauge. Pertains to lean view only.
Lean Assist Alerts	Set a change in temperature and/or ROP/LOP alert.
Lean Source	Select the lean mode. GDU retains lean mode selections through power cycles. Read about available options in *Lean Assist*.

You can reset lean or normalized temperature values by pushing the applicable control knob while the view is active. This method is immediate as it requires no confirmation. Read more about each reset function in the respective engine temperature display section.

Peak fuel flow indications correspond to EGT/TIT peaks on the lean display. Read more about these indications in *Lean Assist*.

[1] Not applicable to layouts with spatial constraints. These displays show only the hottest cylinders.

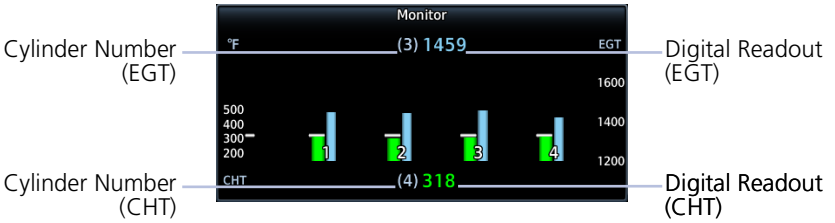
SHOW HOTTEST

Selecting the Show Hottest detail setting provides a simplified view of the hottest CHT and EGT/TIT cylinders on the monitor and lean engine temperature displays.[1]

Once detected, the hottest cylinder temperatures appear as follows:

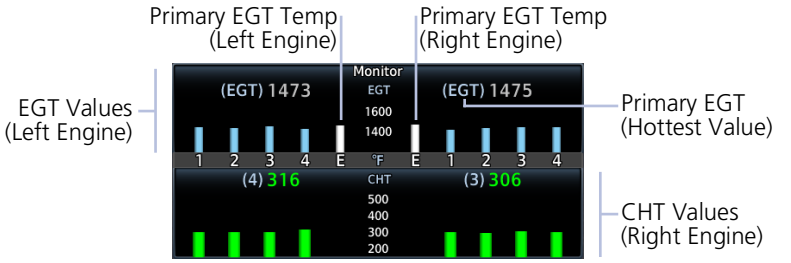
- *Single engine:* along the top (EGT/TIT) and bottom (CHT) of each graph
- *Twin engine:* along the top of the graph

Individual cylinders are selectable at this detail level. Tap a cylinder to display its temperature value.



Show Hottest Cylinder
(Single Engine, Four Cylinders)

"EGT" annunciates in place of a cylinder number when Primary EGT is the hottest value.



Show Hottest Cylinder
(Twin Engine, Four Cylinders)

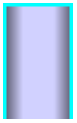
[1] Not applicable to normalized view, which displays all temperature deltas by default.

Cylinder Selection

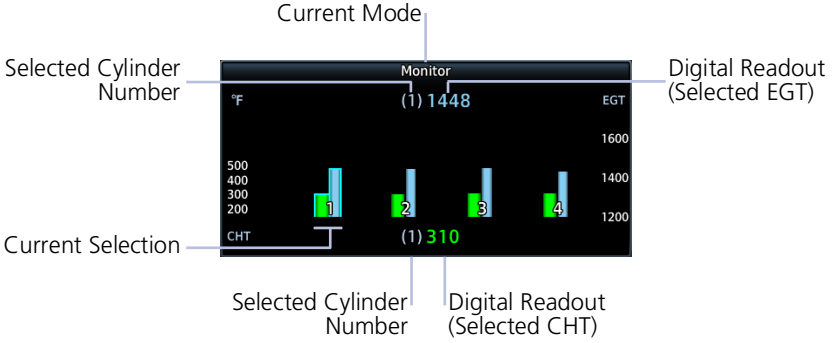
Tapping a graph manually advances the selector to the next temperature value (e.g., CHT, EGT, Primary EGT, or TIT).

- *Single engine:* Tapping the graph cycles through each numbered pair of CHT and EGT cylinders.
- *Twin engine:* Tapping the graph cycles through each quadrant (e.g., Left EGT, Right CHT)

Selections revert to auto mode after 10 seconds of inactivity.



A solid cyan border highlights the current selection. A digital readout displays the cylinder's current temperature value.



Selected Cylinder Indications

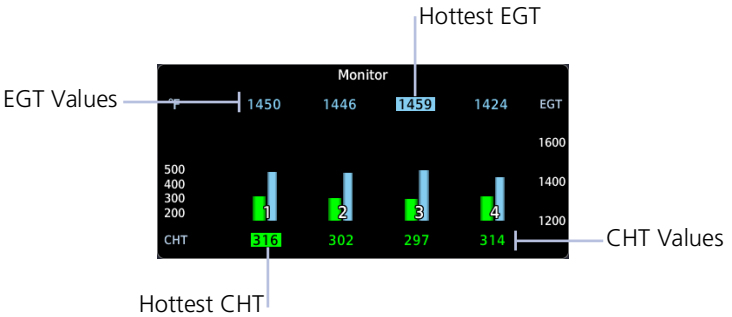
SHOW ALL CYLINDERS

Selecting the Show All detail setting[1] displays:

- Cylinder CHT value in green below each bar
- Cylinder EGT value in blue above each bar
- TIT or Primary EGT label and value (if available)

Once detected, the hottest cylinder appears as follows:

- *Cylinder CHT:* Black text on green background
- *Cylinder EGT:* Black text on blue background



Show All Cylinders
(Single Engine, Four Cylinders)

[1] Not applicable to layouts with spatial constraints. These displays show only the hottest cylinders.

Monitor View

FEATURE LIMITATIONS

- *Manual cylinder selection available only when monitor mode is active and the Display Detail setting is Show Hottest*

Monitor is the default engine temperature display view. When active, individual cylinder temperature values annunciate based on the selected CHT/EGT display detail setting: Show All or Show Hottest (default).

Menu > **Engine Temperature** > **Display Detail**

Lean Assist

FEATURE REQUIREMENTS

- *For specific engine leaning procedures and temperature targets, consult the AFM*

Selectable lean modes allow you to identify peak EGT/TIT/Primary EGT temperatures and temperature differential values associated with the leaning process.

Available mode options are listed in the Lean Source menu. GDU retains lean source mode selections through power cycles.

LEAN SOURCE MENU OPTIONS	
EGT - All Peaks	Used for leaning off the first peak (rich of peak operations) and last peak (lean of peak operations). Available for all installations (default selection for non-TIT installations).
EGT - First Peak	Optional. Used only for leaning off the first peak when normal operation is to always lean rich of peak.
TIT	Available only for single turbocharger installations (default selection).
TIT - All Peaks	Available only for twin turbocharger installations (default selection).
TIT - First Peak	Optional. Used only for leaning off the first TIT peak. Available only for twin turbocharger installations.
PEGT	Available only for Primary EGT installations.

EGT graph features are not selectable when in lean view.

PEAK TEMPERATURE INDICATIONS

During Lean Assist mode, the system waits for the EGT or TIT temperature to rise 14 °F and then drop 7.2 °F (or equivalent).[1] When this occurs:

- A white (PEGT/TIT) or blue (EGT) saddle indicates the maximum temperature value recorded for the sensor.
- Saddle position and deviation values automatically adjust to reflect any increases in peak temperature.

If configured for a fuel flow sensor, a corresponding decrease in fuel flow is also required for peak to occur.[1]

Temperature and fuel flow values may be customized by the installer.

LEAN DELTA DIGITAL READOUTS

A numeric field displays the difference between the peak and current operating temperatures. This value changes to reflect all subsequent temperature fluctuations. A negative value denotes an operating temperature lower than the maximum recorded value.

READOUT STYLE	MEANING	PURPOSE	AVAILABLE LEAN MODES
-54	Cylinder EGT First Peak	Cylinder EGT rich of peak operations	EGT - First Peak EGT - All Peaks
-68	Cylinder EGT Last Peak	Cylinder EGT lean of peak operations	EGT - All Peaks
-94	Primary EGT or TIT First Peak	Primary EGT and single TIT rich of peak and lean of peak operations	Primary EGT TIT TIT - First Peak TIT - All Peaks
-40	TIT Last Peak	Dual TIT lean of peak operations	TIT - All Peaks

[1] Temperature and fuel flow values may be customized by the installer.

PEAK FUEL FLOW INDICATIONS

FEATURE LIMITATIONS

- *Fuel flow indications available only during lean view on arc style or standard dial gauges*

Magenta indications on the fuel flow gauge correspond to the first EGT or TIT peak unless/until a last peak occurs, at which point the indications update to reflect the last peak fuel flow.

Once a peak occurs, the fuel flow gauge displays a magenta triangle indicating the fuel flow when the first or last peak occurred. A numeric field displays the difference in the current fuel flow and the peak fuel flow.

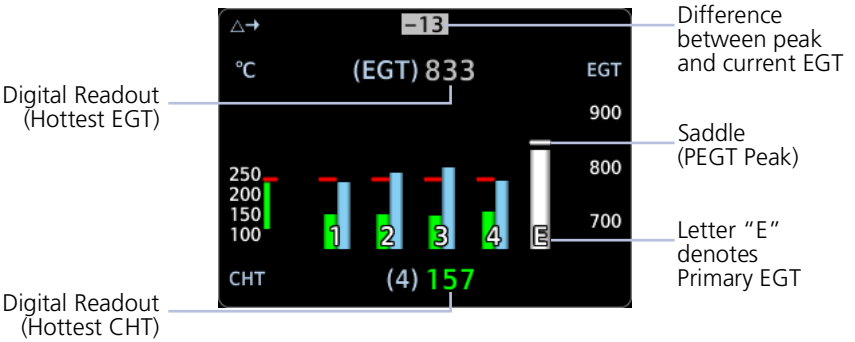
This function is active by default on the MFD and on EIS only displays.

To disable peak fuel flow indications: Tap **Menu** > **Engine Temperature**, and toggle off the **FF Peak** key.

EGT Lean

LEAN SOURCE MODE SELECTION	FUNCTION
EGT - All Peaks Exhaust Gas Temperature All Peaks	• Indicated the peak temperature of all cylinders • Displays temperature deltas for the first peak cylinder and last peak cylinder upon detection • Recommended for rich of peak or lean of peak operations (for rich of peak, reference the first peak delta; for lean of peak, reference the last peak delta) • Default indication for non-TIT installations
EGT - First Peak Exhaust Gas Temperature Lean First Peak	• Indicates the peak temperature of the first cylinder to peak • Displays a temperature delta based on the first peaked cylinder (no other cylinders are detected) • Recommended for aircraft that always operate rich of peak
PEGT Primary EGT Lean	• Indicates the peak temperature of the primary EGT during the leaning process • Displays a temperature delta based on the Primary EGT • Available only when Primary EGT is the configured gauge type

First peak temperature deltas always display with inverse highlighting. Last peak temperature deltas always appear inside a box.

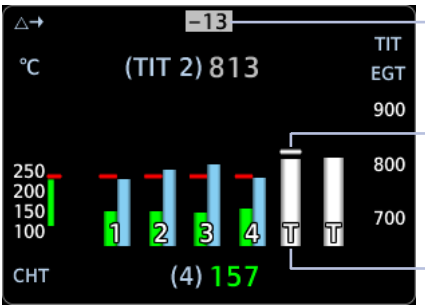


Primary EGT Lean (Single Engine Aircraft)

TIT Lean

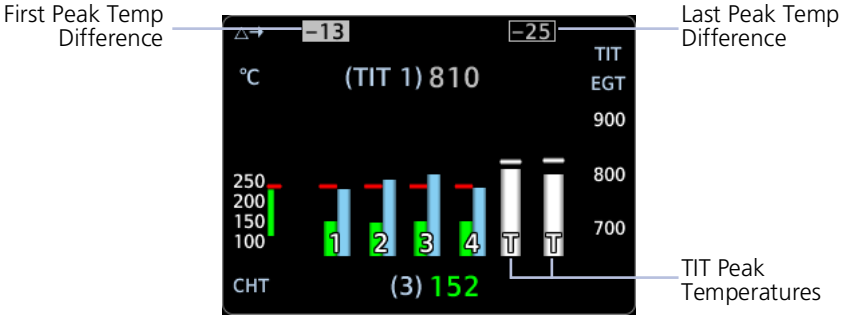
TIT leaning is available for turbocharged aircraft configured for single or dual TIT measurements.

LEAN SOURCE MODE SELECTION	FUNCTION
TIT Turbine Inlet Temperature Lean	• Indicates the peak TIT during the leaning process • Displays a temperature delta based on the peak TIT • Available only on aircraft with one TIT sensor per engine (default)
TIT - First Peak Turbine Inlet Temperature Lean First Peak	• Indicates the first temperature sensor to reach peak TIT • Displays a temperature delta based on the first TIT peak (only one TIT peak temperature is detected) • Available only on single engine aircraft equipped with dual turbochargers • Recommended for dual TIT aircraft that always run rich of peak TIT
TIT - All Peaks Turbine Inlet Temperature All Peaks	• Indicates the first and second temperature sensors to reach peak TIT • Displays two temperature deltas based on the first peak TIT and last peak TIT (use the first peak TIT when operating rich of peak; use the last peak TIT when operating lean of peak) • Available only on single engine aircraft equipped with dual turbochargers (default)



TIT Lean - First Peak
(Single Engine Aircraft)

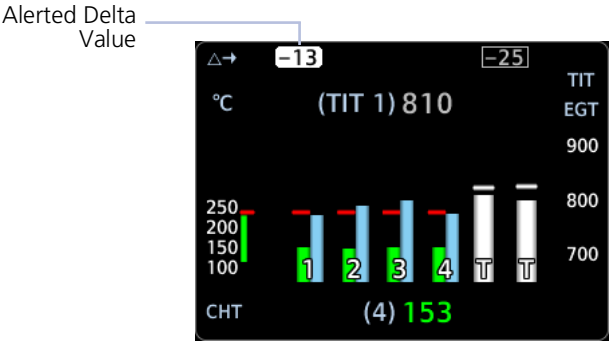
First peak temperature deltas always display with inverse highlighting. Last peak temperature deltas always appear inside a box.



TIT Lean - All Peaks
(Single Engine Aircraft)

LEAN ASSIST ALERTS

The system provides alerts based on pilot configured temperature and rich of peak or lean of peak state. Once an alert is triggered, the delta value for the applicable peak annunciates above the graph (black text on white background) for 5 seconds.



Lean Assist Alert Indication (ROP Alert)

Available alert options are accessible from the Lean Assist Alerts page. Not all alert types may apply.

ALERT TYPES	CONDITION
Lean of Peak **Rich of Peak**	The system is configured for a fuel flow sensor.
First Peak **Last Peak**	A fuel flow sensor is not configured and the selected lean source is either EGT - All Peaks or TIT - All Peaks (multi-sensor leaning).
No Specific Type (General Delta Temperature Alert)	A fuel flow sensor is not configured and the selected lean source is one of the following: • EGT - First Peak • TIT - First Peak • TIT • Primary EGT (single sensor leaning)

ADJUST LEAN ASSIST ALERT SETTINGS

Lean alert settings are always adjustable.

1. Tap **Menu** > **Engine Temperature** > **Lean Assist Alerts**.
2. Select **Degrees** and enter the degree difference from peak for the alert setting. Doing this automatically enables the alert function.
3. Select **Type** to toggle between alert types: ROP and LOP or First Peak and Last Peak (if available).

DISABLE A LEAN ASSIST ALERT

Tapping an **Alert** key enables or disables the alert depending on its status.

Example of Lean Assist Alert Settings

RESET & RESTART LEAN PROCESS

Reset and start a new Lean Assist process.

From the Engine menu:

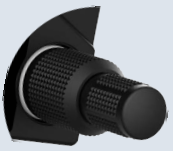
Tap **Menu** > **Engine Temperature** > **Reset Lean**.

A pop-up message requests confirmation.

Tapping **OK** confirms the request.

Tapping **Cancel** in the control bar closes the pop-up and aborts the request.

Reset & Restart Lean via Control Knob



Pushing the applicable control knob while viewing the lean display resets and restarts the Lean Assist process. This action requires no confirmation.

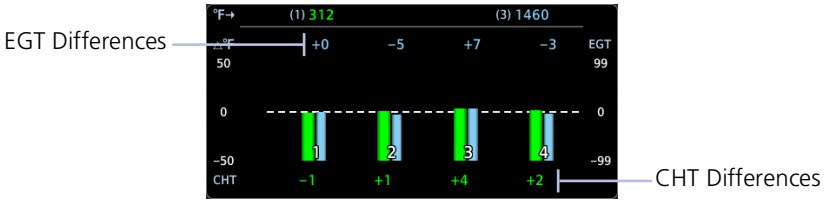
Normalized View

Selecting this mode displays the following temperatures relative to a normalized value.

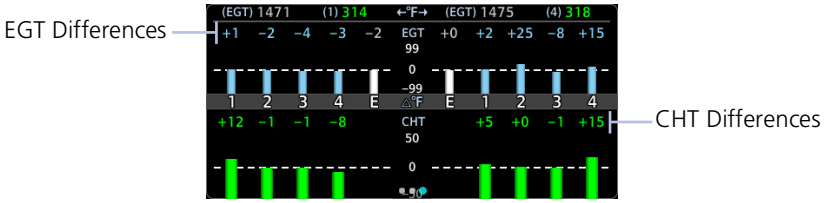
- CHT
- EGT
- TIT
- Primary EGT

On the CHT/EGT graph:

- Normalized values become active
- Bars and digital values depict the temperature difference from the normalized value
- Gauge color changes to alert you of a threshold exceedance



Single Engine Aircraft



Twin Engine Aircraft

Due to space constraints in some layouts, digital readout values may be limited to the bar scale range. Readouts beyond these values display as a series of dashes (---). To bring normalized values back into readout range, reset the normalized temperature baseline as described in the next segment.

RESET NORMALIZED VALUES

Reset the normalized temperature baseline values to the current values.

From the Engine menu:

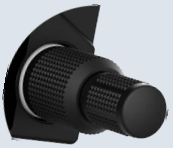
Tap **Menu** > **Engine Temperature** > **Reset Normalize**.

A pop-up message requests confirmation.

Tapping **OK** confirms the request.

Tapping **Cancel** in the control bar closes the pop-up and aborts the request.

Reset Normalized Values via Control Knob

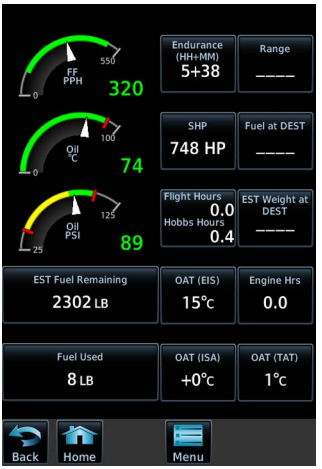


Pushing the applicable control knob while viewing the normalized display resets the normalized temperature baseline. This action requires no confirmation.

The system does not retain normalized temperature values through power cycles.

The MFD Engine page provides expanded information for select configured gauges. Other features include pilot selectable user fields and a **Menu** access key.

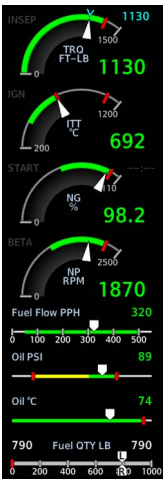
MFD Engine Page, GDU 1060



Single Engine Turboprop

Twin Engine Turboprop

Gauge Strip, GDU 1060



Single Engine Turboprop

Twin Engine Turboprop

The gauge strip presents an unobstructed compact view of primary engine information. Depending on configuration, the gauge strip may reside at the left or right edge of the GDU 1060 display.

Unlike the Engine page, the gauge strip has no selectable features.

EIS Setup

Engine Menu

- Fuel Computer
  - Set full/tabs
  - Specify fuel quantity remaining
  - Sync from gauges [1]
  - Calibrate FFLOW
  - Enable Aircraft Weight [4]
- Engine & Flight Hours [2]
  - View total hours
- Target Bug [3]
  - Select operating mode
- Zero Fuel Weight [3]
  - Enter total zero fuel weight
- Advisories
  - Specify advisory limits

The **Menu** key provides access to the fuel computer, engine and flight hours, and engine advisories. On GDU 700P, the Engine menu also provides controls for customizing system settings.

GDU 700P EIS setup functions are accessible from the System menu. On GDU 1060, they reside on the MFD System page.

System GDU 700P

- Units
  - Select units
- Status
  - External LRUs
- Backlight
  - Set intensity offset
- Logs
  - Aircraft Log
  - Exceedances
  - Export Data Log
- Inhibit CO Alerts [4]

System Page GDU 1060

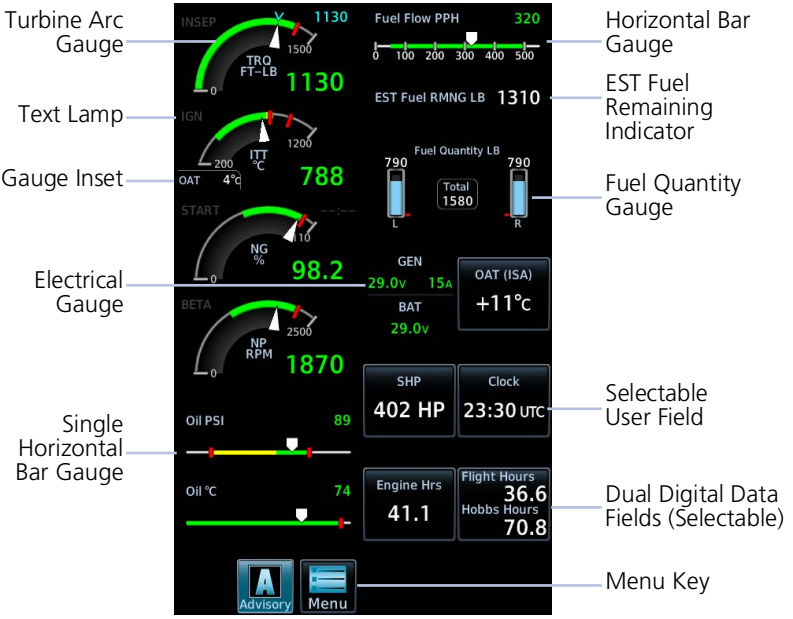
- External LRUs
  - View LRU status
- Units
  - Select units
- Backlight
  - Set intensity offset
- Logs
  - Aircraft Log
  - Exceedances
  - Export Data Log
- Inhibit CO Alerts [4]

[1] Available with TXi software v3.21 and later. [2] This page is informational only.
[3] Available with TXi software v3.61 and later. Availability dependent upon configuration.
[4] Available with TXi software v3.80 and later. Availability dependent upon configuration.

EIS SETUP SELECTIONS	
Units	Specify units of measure for fuel computer and pilot selectable gauges. Selections synchronize across all configured GDUs.[1] • Distance • Temperature • Fuel Computer
Status	• View unit and software information • Check status of all configured LRUs
Backlight	• Adjust display brightness
Aircraft Log	• View engine and airframe cycle counters
Exceedances	• View and acknowledge exceedance advisories
Export Data Log	• Save logged data to SD card
Inhibit CO Alerts	• Toggle CO caution alerts on or off

[1] Engine gauge units are not adjustable.

Gauge & Indicator Types



Common EIS Display Elements

Turbine Arc Gauges	Display a visual representation and a digital readout of the specified engine parameter value. If configured, these gauges may be accompanied by a text lamp and/or gauge inset.[1]
Digital Data Fields	Display a digital readout value of the engine parameter.[1] These include single or dual input values depending on system configuration.
Fuel Quantity Gauges	Display fuel amounts for the specified fuel tanks.[2]
Horizontal and Vertical Bar Gauges	Display engine parameter information on a single horizontal or vertical bar. These have single or dual pointers depending on engine type. May include digital readout fields depending on display layout.
Selectable User Field	Opens a menu of the selectable data fields available for display. The type of parameters available for selection is determined during installation. A gray border differentiates selectable user fields from non-selectable digital data fields.

[1] Limits are configured according to system design or the AFM/POH. They are not pilot selectable.
[2] Fuel gauges are configured and calibrated during installation.

TARGET BUG

NOTE

It is the responsibility of the pilot in command to know and abide by all published limitations and operating ranges in the AFM/POH.

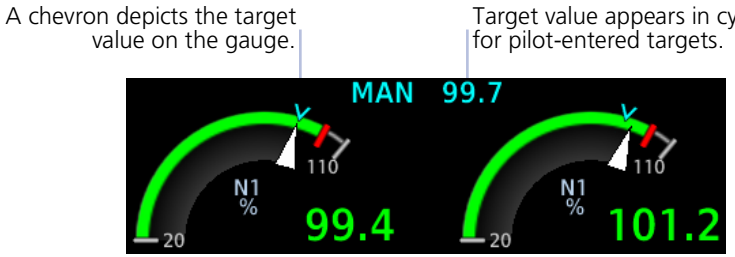
FEATURE REQUIREMENTS

- *TXi software v3.61 or later*

FEATURE LIMITATIONS

- *Available mode selections dependent upon aircraft type and unit configuration*
- *Bug type dependent upon aircraft type: torque bug for turboprop aircraft; N1 bug for turbofan aircraft*
- *Computed targets available for Cessna 525(A) aircraft only*
- *On-target indications available with TXi software v3.80 and later*

This indicator allows the display of the engine target value on the configured gauge.



For supported aircraft, the system automatically computes and sets the engine parameter target value for each mode.

Computed Target & Mode Indications

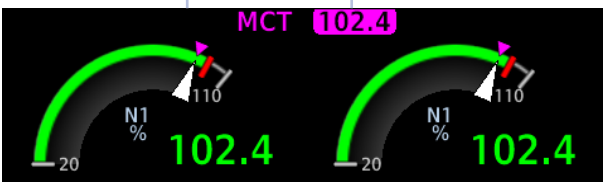
COLOR DEFINITIONS	
Cyan	Manual target
Magenta	Computed target[1]

Marking color is based on the indicator's operating mode.

On-target indications change appearance when the computed target value is within the configured range.

Chevron changes to a solid triangle.

Target value appears in solid highlight.[2]



On-target Indications

TARGET THRESHOLDS	
N1 Bug	1% below target to 0.5% above target
Torque Bug	4% below target to 0.5% above target

The on-target threshold is dependent upon aircraft type and gauge configuration.

[1] Cessna 525(A) aircraft only. [2] Only when all operational engines reach the target.

MODE ABBREVIATIONS	
CLB	Climb
CRZ	Cruise
GA	Go around
MAN	Manual
MCT	Max continuous thrust
TO	Takeoff

Available mode selections vary by aircraft type.

Set a Target Bug for Takeoff Power

CESSNA 525(A) AIRCRAFT ONLY

Specify a target OAT value and enable takeoff mode while the aircraft is on-ground. You may disable the bug at any time from the Engine menu.

During power up:

1. Tap **GND OAT**. GDU displays the measured RAT value by default.
2. Toggle the **TO** mode key on.

The temperature reference transitions to RAT and uses sensed temperature inputs after the takeoff phase is complete and you select another mode or turn off the target indicator.

Ground OAT bug setting is no longer available once the aircraft is in-air.

EST Fuel Remaining Estimated amount of total fuel remaining[1, 3]	**% Power** Engine percent power
Fuel Used Total fuel used since last update to estimated fuel remaining quantity[1, 3]	**Outside Air TEMP (ISA)** Degrees deviation from the International Standard Atmosphere model[4]
Range Total range based on remaining fuel and current ground speed[1, 3]	**Outside Air TEMP (SAT)** Outside static air temperature[4]
Endurance (HH+MM) Fuel endurance time in hours+minutes[1]	**Outside Air TEMP (TAT)** Outside total air temperature[4]
Fuel at Destination Estimated fuel amount at current flight plan destination[1, 2, 3]	**Outside Air TEMP (EIS)** Outside air temperature as measured by the EIS OAT sensor[8]
Endurance at DEST Remaining fuel endurance time (hours+minutes) at destination[1, 2]	**Cabin Altitude/Rate** Cabin altitude and calculated cabin rate[6, 7]
Flight/Hobbs Hours Total flight and Hobbs hours[5]	**Shaft Horse-power** Engine shaft horsepower
Clock Current time[10]	**Efficiency** Fuel efficiency[3]
EST Current Weight Estimated current aircraft weight[10, 11]	**Fuel TEMP** Fuel temperature inside left and right tanks[9]
EST Weight at DEST Estimated aircraft weight at flight plan destination[10, 12]	

Read about Aircraft Weight feature enablement and zero fuel weight entry options in *Zero Fuel Weight*.

[1] Values are based on fuel computer calculations. [2] Requires an active flight plan from the navigator.
[3] Parameter units are pilot selectable. [4] Units are independent of PFD units.
[5] Hobbs hours accumulate when an engine is running. Flight hours accumulate when the aircraft is in air.
[6] Units are dependent upon configuration. [7] Requires cabin altitude data from GFC 600. Rate calculations performed by GDU. [8] Available with TXi software v3.21 and later.
[9] Available for aircraft without a dedicated fuel temperature indicator. For reference only. Requires TXi software v3.50 or later. [10] Requires TXi software v3.61 or later. [11] Requires valid estimated fuel remaining and zero fuel weight values. [12] Requires valid fuel remaining at destination and zero fuel weight values.

Fuel Computer

CAUTION

Ensure that estimated fuel quantity values in the fuel computer are accurate before flight. Fuel quantity gauge indications may not provide the accuracy required for determination of on board fuel during flight.

The fuel computer calculates and displays fuel parameter values when a flight plan is active in a connected and compatible navigator.

Calculations are based on GPS ground speed, the pilot specified destination airport, estimated fuel remaining, and inputs received from the engine fuel flow sensor.

Fuel computer parameters are available for display on the EIS in a selectable user field. They include:

- Aircraft endurance
- Aircraft weight
- Efficiency
- Endurance at destination
- Estimated current weight
- Estimated weight at destination
- Fuel at destination
- Fuel used
- Range

Fuel Computer Setup Options

- Full Capacity
  - Specify tank full amount
- Tab Capacity
  - Specify tank tab amount
- Fuel Computer Sync [1, 2]
  - Pilot Control
  - Disabled
- Aircraft Weight [3]
  - Enabled
  - Disabled

Setup options allow you to customize features on the fuel computer.

From here you can:

- Specify tank full and tab amounts
- Enable the Sync from Gauges function
- Enable the Aircraft Weight feature

Full Capacity	Specify the tank full amount.
Tab Capacity	Specify a tank tab amount.
Fuel Computer Sync	Select Pilot Control to add the Sync from Gauges option to the fuel computer. To remove this option, select Disabled.[1, 2]
Aircraft Weight	Enable or disable the Aircraft Weight feature.[3]

Fuel Computer Sync option availability is dependent upon fuel computer unit selection. If the fuel computer units do not match the configured fuel gauge units, the **Fuel Computer Sync** key is unavailable. Fuel computer units are set on the System Units page.

[1] Available with TXi software v3.21 and later.
[2] Unavailable if fuel computer units do not match the configured fuel gauge units.
[3] Available with TXi software v3.80 and later.

Zero Fuel Weight

Quick Entry Options

- Up to three pilot-specified zero fuel weight preset values
- **Previous** key recalls the last manually entered zero fuel weight value

This function provides a convenient way to enter the calculated zero fuel weight of the aircraft. You can manually specify a value or use one of the available quick entry options.

FEATURE REQUIREMENTS

- *Aircraft Weight feature enabled by pilot on GDU*

FEATURE LIMITATIONS

- *Zero Fuel Weight automatically disabled when fuel computer is not available*

AIRCRAFT WEIGHT FEATURE

You may disable and re-enable the Aircraft Weight feature at any time.

Tapping **Aircraft Weight** toggles the function between Enabled and Disabled. The feature is enabled by default.

Selecting **Disabled** removes all aircraft weight related controls and indications from the fuel computer.

The Aircraft Weight option resides in the Fuel Computer Setup menu. You can access this menu multiple ways.

From the EIS start-up page:

Tap **EST Fuel Remaining** > **Setup** > **Aircraft Weight**.

From the EIS display:

Tap **Menu** > **Fuel Computer** > **Setup** > **Aircraft Weight**, or

Tap **Menu** > **Fuel Computer** > **EST Fuel Remaining** > **Setup** > **Aircraft Weight**.

When this feature is enabled, you can:

- Manually enter the zero fuel weight value or select an assigned preset value
- Assign or delete preset values
- Recall the last manually entered zero fuel weight value

ENTER ZERO FUEL WEIGHT

1. Tap **Zero Fuel Weight**.
2. Type the zero fuel weight value and then tap **Enter**.

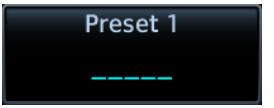
Calculate zero fuel weight by adding the basic operating weight, total passenger weight, and cargo weight.

ZERO FUEL WEIGHT PRESET OPTIONS

Tap **Zero Fuel Weight** > **Setup** and select a preset key. Preset keys are unassigned by default.

Assigned

Unassigned



Selecting a preset key opens a keypad. From here, you have the following options.

- *Assign a preset:* Type the zero fuel weight value and then tap **Enter**.
- *Enter the assigned preset value:* Tap **Enter**.
- *Delete the assigned preset:* Tap **Delete**.

RECALL THE PREVIOUSLY ENTERED ZERO FUEL WEIGHT VALUE

For convenience, you may recall the last manually entered zero fuel weight value.

Tap **Zero Fuel Weight** > **Previous** > **Enter**.

The **Previous** key appears only after an initial zero fuel weight value is entered into the system.

System Startup & Initialization

FEATURE REQUIREMENTS

- *TXi software v3.21 or later*

EIS Start-up Page (GDU 1060 MFD)

During power up, the EIS start-up page provides access to initial EIS setup and preflight functions.
From here you can:

- Record Hobbs, tach (piston only), and flight hours
- Enter Zero Fuel Weight (if aircraft weight is enabled)
- Perform fuel computer calculations
- View the amount of fuel used
- Test external caution/warning switches (if applicable)
- Set operating mode and target value for primary power indicator[1]

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

GDU 700P

GDU 700( ): Depending on configuration, EIS start-up functions may display on a dedicated page or in a slide over menu.

GDU 700L

[1] Turboprop and turbofan aircraft only.

En Route

LEAN THE ENGINE

PISTON AIRCRAFT ONLY

1. Select the preferred lean source from the Lean Mode menu.
2. Switch to the lean view.
3. Watch the temperatures graph for reference peak events and lean the mixture accordingly.

SET TARGET BUG

TURBINE AIRCRAFT ONLY

Select an operating mode or enter a performance target value.

Post Flight

RECORD AIRCRAFT LOG DATA

Document total Hobbs, tach (piston only), and flight time. If configured, record the number of engine and flight cycles. This information is necessary for logging and maintenance purposes.

EXPORT DATA LOGS

Export flight data and (for turbine) engine exceedance logs to an SD card for later analysis.

DISPLAY BACKUP MODES

Normal Mode EIS

PFD/MFD

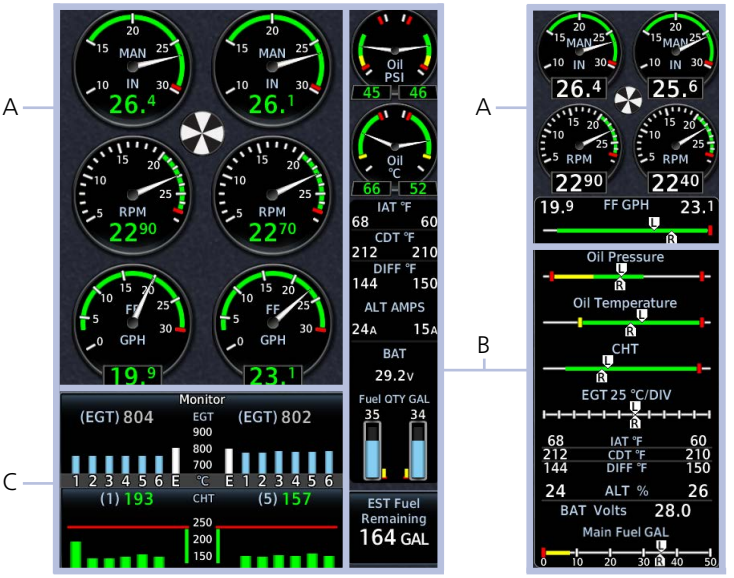
Display Failure

Backup Display Mode

Backup Display Mode

Display Failure

EIS GAUGE REVERSION



GDU 700P Gauges

GDU 1060 Gauge Strip

A	Gauges display with little or no change.
B	Gauges transfer depending on priority and open gauge slots.
C	Gauges simplify and transfer depending on available display area.

AHRS AUTOMATIC SOURCE SELECTION

AHRS automatic source switching occurs when the following conditions are true.

- Automatic source switching is enabled
- On-ground state is inactive
- AHRS 1/AHRS 2 avionics discrete input is not configured
- The AHRS source to be switched *from* is in any of the following states:
  - Fail
  - Aligning
  - Is a standby source when the system transitions from on-ground to in-air
  - Individually flagged as in a miscompare state
- The AHRS source to be switched *to* satisfies all of the following:
  - Available
  - Not aligning
  - Has not already been automatically switched to within the current GDU power cycle (unless the previous switch occurred due to a standby source on-ground to in-air transition)
  - Not in a miscompare state

Aircraft with GFC 600 Extended Availability

When configured for automatic sensor switching, TXi selects valid sensors as requested by the GMC.

- If TXi does not have a correlated miscompare/no compare, a system advisory informs you that the autopilot is reporting a miscompare with the indicated sensor.
- If a sensor is invalid, TXi does not switch to the sensor and the autopilot disconnects after one second.

The miscompare state can be generic (two sources disagree) or specific (the source was individually flagged in a three-source system). In ether case, the system will not automatically switch to a source that is a possible cause for disagreement.

Miscompare & No Compare

AHRS/ADC SENSOR COMPARISON

The GDU continuously monitors and compares sensor data when more than one AHRS or ADC is present. A miscompare state occurs when the difference between two or more sensor outputs is above the predefined threshold.

MISCOMPARE THRESHOLDS		
PARAMETER	**CONDITION**	**VALUE**
Altitude[1]	All	200 feet
Heading[2]	All	6°
Indicated Airspeed[1]	Both <35 kts	Inhibited
	Either or both ≥35 kts, and both <80 kts	10 kts
	Either ≥80 kts	7 kts
Lateral Acceleration	All	0.2G
Normal Acceleration	All	0.2G
Pitch Attitude	All	5°
Pitch Attitude Rate	All	1° per second
Roll	All	5°
Roll Rate	All	3° per second

[1] ALT and IAS miscompares do not display when SSEC states do not match (i.e., one ADC, either the primary or standby (not both), is configured for SSEC while the other is not).
[2] Depends upon configuration.

F

FAF	Final Approach Fix
FDC	Flight Data Center
FIS-B	Flight Information Services Broadcast
FIT	Flight Into Terrain
FLC	Flight Level Change
FLTA	Forward Looking Terrain Avoidance
FMS	Flight Management System
FPM	Feet Per Minute
FS	Flight Stream

G

GCS	Ground Clutter Suppression
GDC	Garmin Air Data Computer
GDL	Garmin Data Link
GDU	Garmin Display Unit
GEA	Garmin Engine and Airframe
GFC	Garmin Flight Controller
GMC	Garmin Mode Controller
GP	Glidepath
GPS	Global Positioning System
GPSS	Global Positioning System Steering
GPWS	Ground Proximity Warning System
GRS	Garmin Reference System
GS	Glideslope
GSL	Geometric Sea Level
GSU	Garmin Sensing Unit
GTP	Garmin Temperature Probe
GWX	Garmin Weather Radar

H

HDG	Heading
HOT	Hazardous Obstacle Transmission
HPM	Heading Preset Mode
HSI	Horizontal Situation Indicator
HTAWS	Helicopter Terrain Awareness and Warning System

I

IAF	Initial Approach Fix
IAS	Indicated Airspeed
IAT	Induction Air Temperature
IFR	Instrument Flight Rules
IGRF	International Geomagnetic Reference Field
ILI	Imminent Line Impact
ILS	Instrument Landing System
ITT	Interstage Turbine Temperature
IOI	Imminent Obstacle Impact
ISA	International Standard Atmosphere
ITI	Imminent Terrain Impact

K

KIAS	Knots Indicated Airspeed

L

LDI	Lateral Deviation Indicator
LOA	Letter of Authorization
LOC	Localizer
LRU	Line Replaceable Unit

R

RAT	Ram Air Temperature
RLC	Reduced Line Clearance
ROC	Reduced Required Obstacle Clearance
RTC	Reduced Required Terrain Clearance

S

SAT	Static Air Temperature
SBAS	Satellite-Based Augmentation System
SD	Secure Datacard
SSEC	Static Source Error Correction
SSID	Service Set Identifier
SURF	Surface Situation Awareness
SVT	Synthetic Vision Technology
SXM	SiriusXM Weather

T

TA	Traffic Advisory
TACAN	Tactical Air Navigation
TAF	Terminal Aerodrome Forecast
TAS	Traffic Advisory System
TAT	Total Air Temperature
TAWS	Terrain Awareness and Warning System
TCAS	Traffic Alert and Collision Avoidance System
TERM	Terminal
TFR	Temporary Flight Restriction
TIS	Traffic Information Service
TIT	Turbine Inlet Temperature
TSO	Technical Standard Order

GARMIN®

190-01717-29 Rev. A