GENERAL AVIATION SOLUTIONS

SETTING THE COURSE FOR NEXTGEN AIR NAVIGATION

GARMIN®

GENERAL AVIATION

CONTENT

AVIONICS DESIGNED WITH TOMORROW IN MIND

With the most comprehensive lineup of avionics upgrades in the industry, Garmin offers solutions for most any budget and mission, all while providing state-of-the-art capabilities and improving decision-making like never before. We're continually introducing new products and creative technologies that reduce complexity, enhance efficiency, underscore safety, shorten learning curves and vastly simplify cockpit management in all phases of flight.

From the industry's first IFR approach-certified GPS to today's newest touchscreen interfaces and advanced SBAS/WAAS systems that let pilots fly GPS LPV glidepath approaches into airports with no on-field electronic navaids of any kind, Garmin avionics are setting the pace and building toward a future that will take us from today's ground-controlled and radar-supported ATC system to a more space-based, satellite-derived NextGen air traffic management environment.

As this vision takes shape, you can count on Garmin to keep building ever-higher levels of reliability, integration and pilot situational awareness into every panel- and remote-mount avionics system we offer. Our products are designed for pilots by pilots. Plus, they're ready and approved for installation today in hundreds of makes and models of aircraft, including helicopters, by the FAA, Europe's EASA, Canada's TCCA and Brazil's ANAC authorities.

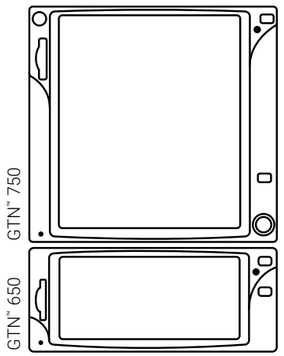
Garmin Avionics. Onboard with the future of flight.

TOUCHSCREEN AVIONICS: THE FUTURE AT YOUR FINGERTIPS

As the first manufacturer to certify touchscreen technology for General Aviation cockpits — and as the leader in touch-controlled avionics — Garmin brings a real edge in experience, value and innovation to its GTN™ 650 and 750 series of integrated avionics. Evolved from thousands of Garmin glass systems, this versatile GPS/Nav/Comm/MFD platform offers an ever-growing array of features and tools to help you make quicker, smarter, easier decisions in all phases of flight. Everything from available onboard digital color radar to ADS-B enhanced traffic alerting to worldwide connectivity links for weather, phone calls, text/email messaging and more — all are options that can now be incorporated, viewed and controlled right from your GTN display. Then, for even more touchscreen convenience, you can add a Garmin Flight Stream wireless gateway to your system, enabling select Connext-capable[1] apps and Garmin portables such as Garmin Pilot™ and aera® 660/796/795 to stream data to/from your GTN avionics via a Garmin Connext® BLUETOOTH® link.

With this wireless link, you can preload flight plans — including airways — onto your tablet for quick and easy uploading into your avionics. Plus, the link provides more robust GPS position data (streamed from the GTN) for apps such as Garmin Pilot and Foreflight Mobile on your device, as well as the option to display weather, traffic and backup attitude information — so your tablet essentially becomes an extra control/display in the cockpit. Additional GTN features include predictive logic to suggest airport and waypoint entries using current GPS position; simplified wireless database updating and synchronization; streamlined frequency entry; customizable checklists; fuel range rings; map-track vectors; airspace altitude overlays on the moving map page; and shortcut access to frequently used data fields, functions, pages and more. Selectable “shortcuts” let you quickly access menu items directly from your moving map page, so you’re rarely more than a tap or two away from all primary pages and functions. You can quickly pan across the map display by simply swiping your finger across the screen. And integration capability for a wide array of avionics and sensors not only streamlines tuning and mode selection — but also, in effect, lets you utilize the GTN touchscreen as a virtual flight management system.

Key workload-reducing features include a handy “frequency lookup” function that allows you to enter any navaid or airport identifier and have the GTN look up the frequencies (Tower, Ground, ATIS, Clearance Delivery, etc.) associated with that location. Conversely, if you’re given a frequency by ATC, the lookup function will automatically provide the station identifier, so there’s never any question who you’re calling. (In fact, the built-in FastFind function will automatically start searching for the nearest identifier as soon as you start typing, so it’ll likely come up with the station ID even before you’ve entered all the digits.) The GTN’s database technology allows you to quickly pull up your most frequently or most recently used frequencies. Plus, the device will automatically decode a station’s Morse code signal to provide a positive identification — and ensure that you’ve got the right number.



[1]Capabilities such as GPS, attitude, weather, traffic and flight plan transfer, SiriusXM® weather and audio control are limited to the version of Flight Stream, the avionics installed in the aircraft as well as portable device. Compatibilities continue to grow with more apps and Garmin portables. Check the Flight Stream 510/210/110 page’s ‘Supported Devices’ tab for the latest feature and compatibility information.

What's more, when paired with a GMA™ 350 series audio panel, you get the power of Telligence™voice command on your GTN™, which allows you to activate select audio panel and navigation functions by spoken orders. This gives you more than 300 commands you can access without taking your hands from the controls during high-workload phases of flight. Simply press the command button on your yoke, and ask, for example, that your GTN "Tune Destination Tower" to load the tower frequency into standby, so it's ready when you're prompted by air traffic control. Additional spoken commands include navigation to pages and functions within the GTN, the display of user fields and more. This is the future of "all-in-one" avionics design as we know it.

With every model in the GTN product lineup, graphical flight planning capabilities allow you to preview your route on the map screen and easily enter new waypoints or modify existing ones. Victor airways and high-altitude jet routes can be overlaid on the moving map. And for easy IFR route navigation, airway segments can be selected on screen for instant entry into one's flight plan. What's more, a handy "rubber band" feature lets you grab a flight plan leg on the screen and then stretch or move it to accommodate a deviation or ATC amendment to your flight plan.

You can also simply tap on waypoints, airports, etc., on the display to get more information about each location. And a handy data "crossfill" function enables your GTN series navigation system to automatically sync flight plan and waypoint information with any earlier-generation GNS™ 430W/530W series navigators you may have in your panel. Thus, there's no duplication of effort between your GTN and your GNS. On both the GTN 650 and 750, the built-in GPS is TSO-C146c certified for primary navigation in all phases of flight — en route, terminal and approach — and can also qualify as an ADS-B compliant position source for NextGen airspace. For added situational awareness, a built-in terrain elevation database provides color-coded display overlays when potential terrain conflicts loom ahead. And full Class B or Class A TAWS alerting is also available as an option.

Standard SBAS/WAAS navigation enables you to fly GPS-guided LPV glidepath approaches down to ILS-comparable minimums, where suitable conditions exist. Also, precise course deviation and roll steering outputs can be coupled to select autopilots, including the GFC™ 500 and GFC™ 600,

enabling virtually all IFR flight procedures to be flown automatically — with added capability to program visual approaches, create holds and fly vertical descent navigation to published altitude constraints on approaches, as well as add common search and rescue operations including orbit, parallel line, expanding square and sector search types.

Then, once you've landed, geo-referenced SafeTaxi® diagrams automatically provide easy directional orientation on hundreds of U.S., Canadian and European airports — including visual identification of airport hot spots that pose increased risk of conflicts. For European pilots, GTN even displays visual reporting points on the moving map.

For helicopter operators, there are special GTN versions available that meet the stringent environmental and vibration standards for rotorcraft. These units are available with right-seat screen formatting, enhanced low-altitude obstacles databases, night vision goggle (NVG) compatibility and high-resolution, five-color HTAWS terrain alerting with voice callouts of AGL altitude on descent. In addition, optional WireAware™ wire-strike avoidance technology is available with the GTN products to give you added protection against powerlines. The basic helicopter database includes all hazardous obstacle transmission (HOT) lines, which span rivers and canyons in areas that can prove treacherous to low-flying pilots. However, with WireAware, these lines are clearly identified on the map page, with detailed information (including MSL and AGL line heights) available at the press of each wire segment on the display. For even more protection, adding HTAWS to the system enables both audible and visual alerting to call attention to wire hazards in proximity to your flight path.

No matter what you fly — whether it's a helicopter or fixed-wing aircraft — the GTN product family gives you plenty of stack-maximizing options. The more compact GTN 650 series is contained in a 2.65" tall package that mimics the in-stack form factor of its popular GNS 430W predecessor — while the larger GTN 750 series bezel stands 6" tall and offers a screen that's nearly 100% larger than the previous GNS 530W design. There's room in the MFD-capable, 6.9" diagonal GTN 750 frame to display your geo-referenced approach plates and procedures — which come standard with a free initial trial of Garmin FliteCharts®[2] for the U.S., Europe and Canada. Or, if you prefer the Jeppesen format, you can elect to go with optional Garmin ChartView™ electronic charts on your big-screen GTN instead[3].

Moreover, all the GTN series products can support an array of optional weather, lightning and traffic system inputs for overlay on the moving map. If your flying calls for onboard radar, the larger-format GTN 750 series can now double as a display for Garmin's Doppler-capable GWX™ 75 digital weather radars[4]. So there's no need to install a separate radar display or MFD in your panel. Similarly, a variety of datalink weather solutions can be used to access animated graphical NEXRAD, METARs, TAFs and more. These options include Sirius XM® satellite weather coverage for North America (using the GDL® 69 datalink receiver)[5], as well as worldwide weather datalink coverage via the GSR 56 satellite receiver[4]. Other GTN weather solutions include the Garmin GTX™ 345 all-in-one ADS-B transponder and the Garmin GDL® 88 Series ADS-B4 datalink. Both feature dual-link (1090/978 MHz) receivers and transceivers that not only satisfy the FAA's 2019 requirement for ADS-B "Out" compliance (on aircraft operating below 18,000 feet for the GDL 88 and all altitudes globally for the GTX 345), but it also lets you take advantage of ADS-B datalink traffic and subscription-free weather services now available through the FAA's ground-based U.S. network. Even better, the GTN series is capable of advanced ADS-B traffic display features such as TargetTrend™ relative motion tracking, which offers a faster, more intuitive way of judging target trajectories and closure rates in relation to your aircraft's flight path. On the ground, the TerminalTraffic™ feature works with SafeTaxi to overlay on-surface traffic targets onto the airport diagram, enhancing your awareness of any traffic situation on the taxiways. And then, for expanded traffic monitoring and alerting in flight, the GTN series is compatible with active traffic systems such as the GTS™ TAS/TCAS line[4].

To save space in your avionics stack, any GTN unit can provide on-screen control/display for optional remote-mount Garmin transponders[4]. And the larger-format GTN 750 screen can also be used as your control panel for an optional GMA™ 35c or GMA 35 remote audio/intercom system[4]. With GTN you're able to accommodate more screen area in less total stack height. And it's ready to go when you are; GTN radios are available during power-up prior to engine start, so you save time on your departure.

The Garmin GTN series: It's what being in touch with smarter technology is all about.

[1]Capabilities such as GPS, attitude, weather, traffic and flight plan transfer, SiriusXM® weather and audio control are limited to the version of Flight Stream, the avionics installed in the aircraft, as well as portable device. Compatibilities continue to grow with more apps and Garmin portables. Check the Flight Stream 510/210/110 page's 'Supported Devices' tab for the latest feature and compatibility information.
[2] Initial U.S. FliteCharts® will disable when data is more than 6 months out of date. Updates available on single-cycle or annual basis.
[3]Jeppesen subscription required for use with optional Garmin ChartView™ (sold separately).
[4]Sold separately.
[5]SiriusXM® subscription subscription required (sold separately).

The customizable checklist feature on your GTN™ can be used to help ensure that everything is done "by the book" in your cockpit — from preflight and run-up checks to emergency procedures.

Wirelessly link your iPad® to your avionics: By installing a Flight Stream 510 or 210 wireless gateway with your GTN system, you can use Garmin Connext® technology to keep your flight plans in sync and stream weather, traffic, GPS and attitude information to select Connext-capable[1] apps and Garmin portables such as Garmin Pilot™, FltPlan Go, ForeFlight Mobile and aera® 660/796/795.

It's never been easier to to keep all your GTN databases in sync. Simply update one GTN wirelessly with Database Concierge via Garmin Pilot and Flight Stream 510, and your other GTN — and your G500/G600 and G500 TXi/G600 TXi flight displays — will sync databases automatically. You can also access individual procedure charts immediately, even if sync isn't complete, and you can opt to preload the next database release cycle in advance, for activation upon its effective date — another real time-saver.

On-screen graphical flight plan editing makes it easy to add waypoints or modify your route. And a handy "rubber band" feature lets you stretch a flight plan leg to divert or amend your routing.

Geo-referenced Garmin FliteCharts® come standard with a free initial trial on the large-format GTN 750 series[2]. Optional Jeppesen-format electronic charts are also available with Garmin ChartView™[3]. These charts enable graphical overlay of geo-referenced approach plate procedures on your moving map.

Victor airways and high-altitude jet routes can be overlaid on the moving map — and airway segments can be selected on screen for easy entry into a flight plan.

Advanced ADS-B display capability can be provided via the Garmin GTX™ 345 all-in-one ADS-B transponder or the Garmin GDL® 88 dual-link transceiver (sold separately), allowing you to access the FAA's free uplink of aviation weather and traffic information. On the traffic display, our patented TargetTrend™ relative motion feature offers a faster, more intuitive way to judge direction and closure rate of targets in relation to your flight path.*[7]

Sectional-like airspace depictions show altitude limits right on the moving map. And the Smart Airspace™ feature automatically highlights airspace details close to your current altitude, while de-emphasizing less relevant data at other levels.

SafeTaxi® airport diagrams come preinstalled on all GTN series products, providing geo-referenced aircraft guidance on hundreds of U.S., Canadian and European airports and visual identification of hot spots that pose particular risk for traffic conflicts.

A built-in elevation database on your GTN provides an extra margin of situational awareness in visualizing terrain/obstacle conflict situations. For even more comprehensive audible/visual alerting capability, optional TAWS A and TAWS B functionality is also supported.

A wide range of optional weather solutions can be displayed on your GTN touchscreen — everything from onboard digital radar to SiriusXM® or worldwide satellite datalink products — as well as the subscription-free uplink of graphical and textual weather data via the U.S. ADS-B ground network.

To save vital inches in your stack, any GTN touchscreen can serve as a digital control head for compatible Garmin remote-mount ATC transponders. In addition, the larger GTN 750 can also provide on-screen control for remote GMA™ 35 audio/intercom system (sold separately), which features 3-D audio sourcing and Telligence™ voice command.

SPECIFICATIONS

Awareness

Emergency Search:	25 nearest airports, VORs, NDBs, intersections and user waypoints; 5 nearest ARTCC and FSS frequencies
Alarms:	Terrain, TAWS B, TAWS A (optional); airspace messages at 10 minutes, 2nm and inside airspace; arrival timers; customizable reminders for oil changes, required inspections, etc.

Pilot Customization

Waypoints:	1000 user-defined
Flight Plans:	99 reversible; up to 100 waypoints each

Physical

Unit Size	
GTN 650:	2.65"h x 6.25"w x 11.25"d (6.7 x 15.9 x 28.6 cm)
GTN 750:	6.00"h x 6.25"w x 11.25"d (15.2 x 15.9 x 28.6 cm) Depth is behind panel with connectors
Unit Weight	
GTN 650:	7.0 lb
GTN 750:	9.3 lb
Display:	Color TFT LCD; sunlight readable. Optional NVIS-B compatibility
Power:	11-33 VDC

Performance

GPS:	TSO-C146c, Class 3
VOR:	TSO-C40c
LOC:	TSO C36e
GS:	TSO-C34e
VHF COMM:	25 kHz and 8.33 kHz channel spacing Transmitter TSO C169a, Class 3, 4, 5 and 6 Receiver TSO C169a, Class C and E
Comm Transmit Power:	10 or 16 watts (optional)
GPS Receiver:	15 channel, including 3 WAAS
Acquisition Time:	TTFF 1:45 minute typical (cold), 10 second reacquisition
Update Rate:	5 per second
Accuracy:	<2 meters RMS typical with WAAS (horizontal/vertical)
Dynamics:	1000 knots max
Nav Features:	Navigation with flight plans and direct-to waypoints, airway navigation, approach navigation using published approaches, terminal navigation using DPs and STARs, closest point of flight plan, arrival and departure frequencies, turn advisories and arrival annunciations
Planning Features:	Trip and fuel planning, true air speed, density altitude, winds aloft, flight timers, trip statistics, sunrise and sunset, RAIM availability, advisory vertical navigation (VCALC)
Interfaces:	ARINC 429, RS-232, HSDB, CDI/HSI, RMI (digital), altitude input (serial: Icarus, Shadin-Rosetta; fuel sensor, fuel/air data, GDL 69/69A XM, GTX 345, GTX 345R, GTX 335, GTX 335R, GTS 800/825/855, GDL 88, GWX 68/70, GSR 56, G500/G500 TXi/G600 TXi, L-3 Stormscope, L-3 Skywatch, Avidyne TAS, GAD 42/GAD 43/ GAD 43e, GRA 5500, GRA 55, GMA 35 and others
Map Datums:	WGS-84

SERIES COMPARISON:	GTN 625	GTN 635	GTN 650	GTN 725	GTN 750
Unit size (height)	2.65"	2.65"	2.65"	6"	6"
Display resolution (pixels)	600 x 266	600 x 266	600 x 266	600 x 708	600 x 708
10-watt comm radio	No	Yes	Yes	No	Yes
16-watt comm radio	No	Optional	Optional	No	Optional
VOR/ILS/GS nav radio	No	No	Yes	No	Yes
Gamma 3 WAAS GPS	Yes	Yes	Yes	Yes	Yes
Hi-res terrain graphics	Yes	Yes	Yes	Yes	Yes
Internal TAWS B/TAWS A terrain alert	Optional	Optional	Optional	Optional	Optional
Free trial of geo-referenced FliteCharts®	NA	NA	NA	Yes	Yes
Jeppesen ChartView™	No	No	No	Optional	Optional
Preloaded SafeTaxi®	Yes	Yes	Yes	Yes	Yes
Sirius XM® Satellite Weather capable[1]	Yes	Yes	Yes	Yes	Yes
Can control remote transponder[2]	Yes	Yes	Yes	Yes	Yes
GWX™ 75 radar interface[3]	No	No	No	Yes	Yes
Third-party digital radar support	No	No	No	Optional	Optional
Can control remote audio processor[4]	No	No	No	Yes	Yes
Traffic system capable[5]	Yes	Yes	Yes	Yes	Yes
Advanced ADS-B traffic and weather[6]	Yes	Yes	Yes	Yes	Yes
Connext wireless link to iPad®/tablets[7]	Yes	Yes	Yes	Yes	Yes

[1] Requires GDL 69 antenna (sold separately); Sirius XM® subscription required
[2] GTX® 335R/345R series remote transponders sold separately
[3] Radar LRU sold separately
[4] GMA 35 remote audio panel sold separately
[5] Requires GTS 800/825/855 or compatible third-party traffic alerting systems
[6] Requires optional GDL 88 datalink, sold separately
[7] Requires additional hardware
iPad, iPhone and Apple are trademarks of Apple Inc., registered in the U.S. and other countries

Add touchscreen glass cockpit displays to your aircraft with G500 TXi/G600 TXi. The G500 TXi system is intended for Class I/II aircraft under 6,000 pounds, while G600 TXi flight displays are intended for aircraft up to 12,500 pounds.

RETROFIT GLASS IS NOW WITHIN YOUR GRASP

If you love the idea of flying a glass cockpit — but hate to think of parting with your current aircraft — this is clearly the retrofit option you've been waiting for the Garmin G500 TXi/G600 TXi.

It's a clean-sheet touchscreen design. One that builds on the proven capabilities of our original G500/G600 series glass flight display series to offer you a vastly expanded array of features, options and panel layout possibilities that make it easy to configure a reliable "glass cockpit" system that can grow with your needs without overstretching your budget.

G500 TXi/G600 TXi glass touchscreens replace the old-style, maintenance-prone mechanical gyros in your system. Available in 7" portrait or landscape orientations, as well as in a larger 10.6" landscape format, TXi displays offer a variety of configurations to fit your panel and budget. The 10.6" displays offer pilot-selectable split-screen capability to accommodate primary flight (PFD) information and a multi-function display (MFD) within the same unit, and optional EIS engine and fuel flow readouts can also be viewed in a vertical strip alongside the PFD/MFD information. The 7" portrait format can be dedicated to PFD, MFD or EIS displays — or even a combined MFD/EIS. And the 7" landscape format is configured to provide a PFD or dedicated stand-alone EIS display.

In configuring your system, you can mix-and-match up to 4 of the high-resolution 10.6" or 7" touchscreens in your cockpit. Or you can start with a single 7" portrait display serving as your PFD, and expand the system's capabilities by adding additional TXi displays over time. The variety of TXi screen sizes and display orientations can support over 25 different approved cockpit configurations. And each display offers the capability to have a built-in attitude/heading reference (AHRS) along with an air data computer (ADC) module integrated on the back of the display. For aircraft already equipped with legacy G500/G600 series flight displays, full TXi compatibility with existing system sensors makes for an easy, cost-effective upgrade path.

Stand-alone or Integrated Engine Information

Whether it's integrated in a split-screen view on the 10.6" display or shown on a dedicated 7" display, engine and fuel monitoring data is easy to access and interpret with G500 TXi/G600 TXi.

The optional EIS is compatible with most popular Lycoming or Continental 4- to 6-cylinder engines (whether normally aspirated or turbocharged) and can provide support for both single- and twin-engine aircraft. Prominent engine gauges on the display provide real-time indications and support for lean assist mode, pilot advisories and more — enabling you to optimize fuel economy while maintaining high efficiency and performance from your engine.

EIS functionality is also compatible with select PT6A-equipped turboprop singles, and tailored features help reduce workload. On engine start, an automatic timer begins counting the duration of starter engagement, so pilots know when a starter cooldown period is required. If the engine is not started and the starter is disengaged, another timer automatically counts down from zero to indicate the time that the starter is being allowed to cool. In flight, dynamic range markings automate limits for torque, prop RPM, Ng percent and interstage turbine temperature based on the aircraft's current condition — for clear visual cues to indicate normal operating ranges and cautions. Furthermore, with integrated limit timers, EIS TXi ensures that pilots operate within specific limits for minimum time to avoid exceedances and costly maintenance. Once a limit is reached, a countdown timer is displayed to help catch the pilot's attention and provide an opportunity to reconfigure the aircraft to mitigate the exceedance. If any time-based limit is exceeded, the pilot is notified in-flight of duration and highest value of exceedance to help decide whether to discontinue the current flight or proceed to the destination.

To help you maintain control over aircraft maintenance and operating costs, built-in engine data logging capability is included with the EIS options. When the EIS system is paired with a GTN™ 650/750 and Flight Stream 510 wireless gateway, your aircraft's engine performance, trend and exceedance data will be automatically displayed with quick historical access, then logged and downloaded to the Garmin Pilot™ app running on your compatible tablet or smartphone and made available for viewing on flyGarmin.com. In addition to wireless transfer, this engine data can also be logged and stored on an SD card within a TXi display. By either means, this recorded data can be retrieved and used by you or your aircraft service technicians to identify performance issues or maintenance needs in time to help avert more costly repairs later.

Brighter, Faster, Easier, Better

Leveraging the experience gained in designing and fielding thousands of integrated flight displays, Garmin engineers built the TXi series from the ground up – with an intuitive menu interface that lets you use familiar knobs and/or touchscreen inputs to quickly access the functions, screen views and other flight information you want to see. Powerful dual-core processors boost the system's graphical display capabilities — with fast zooming, panning and map rendering. Garmin SVT™ synthetic vision (optional on G500 TXi, and standard on G600 TXi) enables a 3-D "virtual reality" landscape to be integrated on the PFD. Plus, modernized fonts and backlighting offer improved readability and increased display clarity to help lighten your inflight visual workload.

To provide even more situational awareness, TXi puts an MFD-like perspective map view within the HSI portion of your primary flight display. In addition to the geographical map, the HSI map view can also support the overlay of datalink weather from ADS-B and SiriusXM® datalinks[1] as well as Connext datalink weather. Additional overlays include SafeTaxi® airport diagrams, traffic, terrain alerting, and more. HSI map control and onscreen navigation are a snap, thanks to a Garmin innovation that lets you zoom in or out on the map, using a single-finger swipe gesture.

High-level Avionics Integration

G500 TXi and G600 TXi were designed to interface with a wide range of avionics equipment, including popular autopilots and flight directors. You can use TXi touchscreens for control/display of heading, course and navigation source inputs, as well as autopilot mode annunciations and more (with compatible inputs). As an option, separate dedicated mode controllers are also available to provide continuity with the autopilot system installed in the aircraft. G500 TXi/G600 TXi also offers advanced integration capability with GTN series navigators, providing full touchscreen continuity between the navigation, communication and flight display functions in your panel.

Backup Redundancy Adds Assurance

For extra redundancy in systems where multiple displays are installed, TXi is designed to enter a reversionary mode — allowing a single 7" portrait or 10.6" display to present primary flight instrumentation and engine indications (if EIS-equipped) — in the unlikely event of a display failure or shutdown. The displays have backup GPS receivers built in, providing redundancy in the event of a disruption to your system's primary GPS navigator. In addition, an optional backup battery is available for the 7" displays. If there's ever an unexpected loss of power to your avionics, this backup battery will provide power to your display for 30 minutes. With this backup battery capability, aircraft owners who install dual 7" portrait G500 TXi displays with dual ADAHRS can forego the requirement for standby flight instruments[1]. Alternatively, along with your G500 TXi display, you can install a G5 electronic flight display as your standby, for backup capabilities with an all-Garmin panel. The all-glass era has truly arrived for GA aircraft.

SPECIFICATIONS

Display Features
- 10.6" or 7" diagonal color LCD options
- RGB backlighting technology
- High resolution
  - GDU 1060 - 1280 pixels (W) x 768 pixels (H)
  - GDU 700P - 480 pixels (W) x 800 pixels (H)
  - GDU 700L - 800 pixels (W) x 480 pixels (H)
- Direct sunlight readable
- Auto, manual, or lighting bus inputs for dimming
- Field upgradable software
- Available as 10.6" landscape, 7" portrait, or 7" landscape configurations

Physical - GDU 1060

Unit Size	7.25 inches high 11.4 inches wide 3 inches deep 6.49 lbs. (without integral ADAHRS), 7.25 lbs. (with integrated ADAHRS)

Physical - GDU 700P

Unit Size	7.25 inches high 5.5 inches wide 3 inches deep 3.99 lbs. (without integral ADAHRS), 4.45 lbs. (with integrated ADAHRS)

Physical - GDU 700L

Unit Size	5.5 inches high 7.25 inches wide 3 inches deep 3.99 lbs. (without integral ADAHRS), 4.45 lbs. (with integrated ADAHRS)

Electrical - GDU 1060

10-40 VDC, reverse polarity protected
70 watts typical

Electrical - GDU 700P

10-40 VDC, reverse polarity protected
42 watts typical

Electrical - GDU 700L

10-40 VDC, reverse polarity protected
42 watts typical

System Architecture

Position Source: Requires external SBAS/WAAS GPS, such as GTN650/750, GNS 480, or 430W/530W series unit

Supported interfaces include: GDL 69/69A XM datalink weather; GRS 56 for global connectivity/WX; GWX 75, GWX 68 and select third-party radars; GTX 345, GTX 335 transponder; GDL 88 ADS-B datalink, GRA 55, GRA 5500 radar altimeters; various traffic sensors, and more

Supported AHRS	GRS 77, GSU 75, GRS 79, Integral AHRS
Supported ADC	GDC 74, GSU 75, GDC 72, Integral ADC
Electrical	10-40 VDC, reverse polarity protected 55 watts typical

Environmental
- -20C to +55C operating temp
- -55C to +85C storage temp
- 2 degrees C per minute temp variation
- 95% at 50C humidity
- 35,000 feet max altitude
- Internal cooling, external cooling not required

Certification Candidates

STC via Approved Model List (AML) for over 900 aircraft makes/models

TSO-C2d, TSO-C8e, TSO-C10b, TSO-C34e, TSO-C36e, TSO-C40c, TSO-C41d, TSO-C43c, TSO-C44c, TSO-C45b, TSO-C47a, TSO-C49b, TSO-C44a, TSO-C63d, TSO-C87a, TSO-C106, TSO-C110a, TSO-C113a, TSO-C118a, TSO-C147a, TSO-C151c, TSO-C157b, TSO-C165a, TSO-C195b, TSO-C198, TSO-C201

[1]Requires both displays be located in the pilot's primary field of view.


GARMIN
GARMIN
HDG ALT 4500
CHRONOMETER
MASTER
BAT
ALT
PITOT HEAT
M6500
DAVTRON
GEAR
ON & LOCKED
IN
TRANS
UP
DOWN
LANDING GEAR
GO AROUND
BUS VOLTS
FUEL BOOST PUMP
LO
OFF
BLOWER
A/C
LDG
LDG
PARK BRAKE
PULL ON
PILOT AIR
PULL INCREASE
CABIN HEAT
PULL INCREASE
DEFROST
PULL ON
FLAPS
IN
TRANSIT
UP
APR
DN
28VDC!
BEECH

GPS NAVIGATORS THAT BRING IFR APPROACHES TO LIGHT AIRCRAFT

Big capabilities come in a small package with the GPS 175, GNC® 355 and GNX™ 375 touchscreen IFR GPS navigators. With their bright, clear, high-resolution touchscreen displays, you can have LPV approach capability to access more airports. You can even add advanced comm radio capabilities with the GNC 355 — or meet the requirements for ADS-B "Out" while experiencing the benefits of ADS-B "In" with the GNX 375. Each navigator's slim 2" height fits neatly into even compact panels — and in retrofit installations, you can keep most course deviation indicators to minimize installation cost.

Entering flight information is a cinch, and accessing every function is fast and easy. The moment you power up these navigators, you'll see a familiar Garmin home page on the 1.5" tall display that puts the most important functions within only a few touches — including hot keys for Direct-to and flight plan access. Swipe left or right to scroll menus. Use your fingers to pan and zoom on the moving map. Enter waypoint data with the on-screen keyboard. And touch the home button to get you back to the main page at any time.

Building and modifying flight plans is simple. As you enter waypoints, our FastFind feature automatically begins searching for the nearest identifier as soon as you start typing, so in most situations, a press or two reveals just what you were thinking. You can also create holds, insert Victor airways and corresponding exit options, and add departures, arrivals and instrument approach procedures. Additionally, you can edit your route using the map screen — a handy "rubber band" feature lets you grab any leg of your flight plan route and move it to accommodate a deviation or ATC amendment to your flight plan.

Meanwhile, a variety of dynamically drawn maps provide situational awareness and context to the flight plan by highlighting visual reporting points, navaids, SafeTaxi® diagrams and such hazards as obstacles, power lines and terrain. Plus, Smart Airspace™ automatically highlights airspace close to your current altitude and de-emphasizes airspace away from the current altitude.

Advanced Approach to IFR

The SBAS/WAAS-certified GPS receiver in these navigators allows you to fly GPS-guided LPV glidepath instrument approaches down to as low as 200', greatly expanding your operational capability. You can also access newer lateral performance and all area navigation approaches. Precise course deviation and roll steering outputs can be coupled to Garmin GFC™ 500 and GFC™ 600 autopilots and select third-party autopilots, so IFR flight procedures such as holds, NextGen radius-to-fix legs and missed approaches may be flown automatically. In addition, you can create and execute custom holding patterns over an existing waypoint or user-defined waypoint.

Plus, when operating in VFR conditions, GPS 175, GNX 375 and GNC 355 can provide advisory vertical approach guidance based on a published glidepath angle or a three-degree approach glideslope from the runway threshold, while considering terrain and obstacle clearance. With this advisory guidance, you're able to fly more consistent and more precise vertical glidepaths into a variety of airfields.

Add ADS-B "Out" and "In"

When paired with dual-link Garmin ADS-B solutions, such as our GTX™ 345 series transponder or GDL® 88 universal access transceiver, the GPS 175 and GNC 355 can display ADS-B traffic targets as well as subscription-free ADS-B weather data in the U.S. Or you can opt for the GNX 375 navigator, which includes a transponder for ADS-B "Out" and "In." For example, you can access animated NEXRAD imagery, METARs, TAFs, winds and temperatures aloft, PIREPs, NOTAMs and more.

Whichever you choose, you can access animated NEXRAD imagery, METARs, TAFs, winds and temperatures aloft, PIREPs, NOTAMs and more. Additionally, our patented TargetTrend™ relative motion technology offers a faster, more intuitive way to judge the direction and closure rate of intruding targets in relation to your aircraft's position. For example, if traffic is ahead of you and traveling along the same track but at a slower rate, the motion vector would point opposite of its indicated direction of flight to show you are overtaking the traffic. Spoken audio alerts call out potential flight path conflicts ("Traffic, 10 o'clock, same altitude, two miles") to get you looking in the right direction. And, at the start or end of each flight,

TerminalTraffic™ technology provides the most comprehensive picture of ADS-B-equipped aircraft and ground vehicles in the airport environment. ADS-B-equipped aircraft in-flight are easily distinguished from ground vehicles and taxiing aircraft, which are displayed using distinct colors and symbols. All information is presented on a simple, easy-to-understand SafeTaxi® diagram with reference to runways, taxiways, hangar locations and more.

Add Powerful Comm Capabilities

The GNC 355 offers 10 W transmission power with 25 kHz frequency channel spacing or 8.33 kHz channel spacing options (GNC 355A), and it incorporates a number of functions that can save you time and effort. Using the onboard frequency database, airport, weather, center and FSS frequencies are easy to find and can be loaded to standby by simply tapping them from the airport information or flight pages. Recent, nearby and saved frequencies are easy to access, too. And you'll have added confidence knowing you're talking to the desired facility every time with the automatic display of the station's identifier right below the frequency, for example, KIXD ASOS or CHICAGO ACC.

With the standby frequency monitoring feature in the GNC 355, you won't have to worry about missing an ATC call or other critical transmission. The GNC 355 allows you to listen to ATIS without leaving your assigned ATC channel. Swap your active and standby frequencies with a single screen touch. Press and hold the frequency transfer key to automatically set the emergency frequency as your active radio channel.

Cockpit Integration

The GPS 175, GNX 375 and GNC 355 interface with a variety of Garmin flight displays, including G3X Touch™, G5 and G500 TXi/G600 TXi, as well as select third-party displays[1]. Plus, they're compatible with your existing composite CDIs to provide easy, cost-effective installation.

And for even more work-saving convenience, you can use our Connext® connectivity to stream information via BLUETOOTH® wireless technology between your navigator and compatible Garmin portables and mobile devices running the Garmin Pilot™ or FltPlan Go. Create flight plans at home and upload them at the airport. And display GPS data and backup attitude information — as well as traffic and weather from the GNX 375 or another compatible ADS-B source paired to the GPS 175 or GNC 355 — to your mobile device or Garmin portable, making them even more useful cockpit companions.

Plus, our optional Flight Stream 510 installs in the memory card slot of the navigator to enable our Database Concierge database transfer and management capabilities via our Connext gateway. At home you can download selected databases onto your mobile device, using the Garmin Pilot app. Then, once you get to the airport, Flight Stream 510 will automatically establish a wireless connection to the Garmin Pilot app and upload the databases from your device to your navigator in minutes.

[1]See supported interfaces tab at Garmin.com/aviation to verify compatibility

GPS 175 SPECIFICATIONS

Display size	4.8" (122.5 mm) diagonal
Active area	4.6" (116 mm) (w) x 1.5" (38 mm) (h)
Resolution	732 pixels (w) x 240 pixels (h)
Bezel height	2.02" (51.0 mm)
Bezel width	6.25" (159.0 mm)
Rack height (dimple to dimple)	2.025" (51.0 mm)
Rack width	6.30" (160.0 mm)
Depth behind panel with connectors (measured from face of aircraft panel to rear of connector backshells)	6.58" (167 mm)
Unit weight	1.3 lb (0.83 kg)
Humidity	95% non-condensing
Maximum altitude	35,000 ft
Input voltage range	9 VDC - 33 VDC
Brightness range	0.015 fL - 260 fL
Operating temperature range	-20 degrees C to 55 degrees C (-4 degrees F to 131 degrees F)

Power specifications

14 volt current draw	Typical 0.6 A
	Maximum 0.9 A
28 volt current draw	Typical 0.3 A
	Maximum 0.6 A

BLUETOOTH specifications

BLUETOOTH version	4.2
BLUETOOTH class	2
Maximum transmitter power	+4 dBm
Unimpeded BLUETOOTH range	100 ft

GNX 375 SPECIFICATIONS

Display size	4.8" (122.5 mm) diagonal
Active area	4.6" (116 mm) (w) x 1.5" (38 mm) (h)
Resolution	732 pixels (w) x 240 pixels (h)
Bezel height	2.02" (51.0 mm)
Bezel width	6.25" (159.0 mm)
Rack height (dimple to dimple)	2.025" (51.0 mm)
Rack width	6.30" (160.0 mm)
Depth behind panel with connectors (measured from face of aircraft panel to rear of connector backshells)	10.85" (276 mm)
Unit weight	3.2 lb (1.44 kg)
Humidity	95% non-condensing
Maximum altitude	30,000 ft with optional GAE module
	35,000 ft with optional GAE module
Input voltage range	9 VDC - 33 VDC
Brightness range	0.015 fL - 260 fL
Operating temperature range	-20 degrees C to 55 degrees C (-4 degrees F to 131 degrees F)

Power specifications

14 volt current draw	Typical 1.20 A
	Maximum 1.80 A
28 volt current draw	Typical 0.60 A
	Maximum 0.90 A

BLUETOOTH specifications

BLUETOOTH version	4.2
BLUETOOTH class	2
Maximum transmitter power	+4 dBm
Unimpeded BLUETOOTH range	100 ft

IT'S AN ALL-IN-ONE ATTITUDE UPGRADE, CERTIFIED FOR LIGHT PISTON AIRCRAFT

Providing a cost-effective STC'd installation for Class I and II fixed-wing aircraft under 6,000 lbs — the G5 electronic flight instrument is the upgrade solution that thousands of GA pilots have been waiting for.

Approved for VFR and IFR flight operations, this space-saving, electronic flight instrument can serve as a stand-alone primary source for aircraft attitude information or a directional gyro/horizontal situation indicator in your fixed-wing GA aircraft.

• As a primary flight instrument, G5 combines attitude information with secondary information such as altitude, airspeed and vertical speed in a single digital display that makes flight information easier to scan.

• As a replacement DG/HSI, G5 pairs with Garmin GTN™ 750/650, GNS 530W/430W and GNS 530/430 series GPS navigators and GNC® 255 and SL30 VHF NAV/COMMs to serve as a primary instrument for displaying magnetic heading, GPS course guidance and/or VOR/LOC guidance (based on nav source), as well as distance to the next waypoint and ground speed. Plus, it provides heading information to compatible legacy autopilots[1].

Installation of dual G5 electronic flight instruments can eliminate the dependency on failure-prone vacuum systems, and a secondary G5 can revert to attitude display in the unlikely event of a failure in the primary attitude indicator position. The G5 fits easily into a single 3-1/8" standard instrument cutout, taking up just a fraction of the space and weight previously required by conventional gyro-based instrument displays.

The G5 upgrade, now available for more than 600 individual aircraft models, is accomplished via supplemental type certificate (STC) with a comprehensive approved model list (AML). Installation is simple and easy: G5 integrates with your aircraft's existing pitot/static system, power and Garmin GPS[1] and NAV inputs, and it requires only the addition of a magnetometer to display magnetic heading — and a single magnetometer can supply two G5 electronic flight instruments simultaneously.

Within the display bezel, a crisp LCD screen offers brilliant color and easy readability, even in direct sunlight, thanks to its advanced LED backlight design. And in addition to serving as either primary attitude or primary navigation reference, G5 can also augment your existing instruments by consolidating inputs for airspeed, altitude, vertical speed, slip/skid, turn rate, ground track, configurable V-speed references, barometric setting and selected altitude, as well as visual alerts upon arrival at your preselected altitude. A built-in GPS receiver can provide GPS-based track and ground speed information[2], and a dedicated rotary knob allows for easy adjustments to altitude and heading bugs and barometric pressure settings on the display.

The unit takes up less than 3" behind the panel. And, as part of the STC, it comes with a standard backup battery pack capable of providing up to 4 hours of "get home" emergency power. Available battery power can easily be monitored by referencing the battery status indicator in the upper left-hand corner of the display.

G5 ELECTRONIC FLIGHT INSTRUMENT SPECIFICATIONS

Electrical:	14 or 28 VDC aircraft power
Unit size:	3.4" w x 3.6" h x 2.6" d (86.4 x 91.4 x 66.0 mm)
Weight:	8.8 oz (249.5 g), unit; 4.5 oz (127.6 g) battery (optional)
Display size:	3.5" diagonal (88.9 mm diagonal)
Display resolution:	320 x 240 pixels (QVGA), LED backlit color LCD
Receiver:	High-sensitivity WAAS GPS
Maximum indicated airspeed: 300 kts	
Altitude range:	-1,400 – +30,000 feet
Vertical speed range:	± 20,000 feet/minute
Pitch/roll range:	±360°
Backup battery:	Rechargeable lithium-ion
Battery life:	Up to 4 hours

[1] GPS Navigator input requires installation of a Garmin GAD™ 29B.
[2] Approved installation requires external GPS antenna (not included) or input from a compatible navigator.


GARMIN
COM 1 135.175 KCLM ASOS
STBY 122.600 FSS
WPT LOFAL
BRG 023°
DIST 26.0
ETE 11:49
GS 132
TRK 023°
ETA 6:35
XPDR 1200 ALT
IDENT
Full
MAN IN 27.9
82%
RPM 2420
FUEL GPH 14.6
OIL PSI 75
OIL °F 195
20 FUEL GAL 20
CHT °F 282
EGT °F 1615
AP | GPS | ALT 3500
TAS 136
HDG 023°
CRS 023°
29.92
Combined
FRAZER ISLAND
KCLM
PROTECTION ISLAND
MARNR
LOFAL
KPWT
KSHN
KTIW
NEXRAD Radar
Winds Aloft
Temps Aloft
METAR
AIRMET
Weather
Map Cht Wpt FPL Wx Ter Trf In
Heading Altitude
Zoom Map Select Page
NRST
GARMIN
PLAY
COM1
COM2
NAV1
NAV2
MUSIC
AUX1
AUX2
MKR MUTE
GMA 345
PILOT
CREW
ICS ISOLATION
COM1 MIC
COM2 MIC
SPKR
TEL
SEL
PILOT
COPILOT
Menu
DIS 26.0 NM
TRK 024°
KSEA
KPWT
ETE to Dest 32:52
DTK 023°
XPDR ALT 1200
EMDEN
LOFAL
Back
TERM TO
MAP TERR NRST Zoom Fld
COM
MON
135.175 KCLM ASOS
122.600 FSS
TUNE
NAV
C/N
OBS
T/F
FUNC
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ENT
HDG / TRK
APR
NAV
HDG
TRK
AP
FD
LVL
YD
DN
UP
IAS
VNAV
VS
ALT SEL
PUSH SYNC
ALT
GPS
AP
ALT 3500
QUARTZ CHRONOM

G3X TOUCH™: TOUCHSCREEN FLIGHT DISPLAYS FOR SINGLE-ENGINE PISTON AIRCRAFT

This is a game-changer. It's the price/capability breakthrough that owners and pilots of single-engine piston aircraft have been waiting for: G3X Touch flight displays are now approved and available for installation on hundreds of FAR Part 23 Class I certificated aircraft (typically, those weighing less than 6,000 lbs). With supplemental type certification provided under an extensive approved model list, these 10.6" and 7" LCD displays make it easy and affordable to upgrade from legacy mechanical instrumentation to a modern glass cockpit solution.

Offering extensive integration options, the G3X Touch™ displays are available in a variety of panel configurations to fit your needs and budget. Each G3X Touch glass display features a bright, high-resolution screen with infrared touch-control interface that seamlessly blends with familiar buttons and knobs to put all essential flight information at your fingertips. Standard features include our SVX™ synthetic vision display with database-generated terrain features and built-in wireless Connext® cockpit connectivity. Better still, the optional EIS provides display of primary engine instrumentation.

Multiple screen sizes and display formats let you grow your G3X Touch suite as your needs evolve. For space-limited panels, a single 10.6" or 7" display can accommodate both PFD and MFD windows within the same unit. The 10.6" display can also include an EIS strip for additional versatility. Another option allows two 7" screens to be installed side by side and accommodate PFD, MFD and optional EIS functionality. Or you can pair a 10.6" split-screen unit with a 7" format to provide even more flexibility to lay out your preferred arrangement of PFD, MFD and optional EIS displays. And to help simplify installation, the primary display also offers the capability to have an air data computer and attitude/heading reference system module integrated on the back of the display unit.

Streamlined Cockpit Management

Making things easier and better for pilots in the cockpit is what G3X Touch is all about. That is why G3X Touch displays integrate the controls for many popular Garmin avionics. Large on-screen touchpoints and familiar graphic icons help simplify all your data entry and menu selections — allowing you to easily see and control Comm frequency selection as well as transponder settings and code entry. Growth-oriented avionics choices you can use to provide these functions include our GTR 225 Comm transceiver, GNC® 255 Nav/Comm, GTN™ series GPS/Nav/Comm, GNX™ 375 and GTX™ 345/335 series ADS-B enabled transponders.

Valid for use in VFR- and IFR-capable installations, the certified G3X Touch displays are designed to interface with select autopilots, including our GFC 500 digital autopilot[1]. Fully coupled LPV/LNAV/ILS approach capability — including missed approach procedures — can be accessed when the G3X Touch displays are paired with the GFC 500 autopilot and a compatible navigation source, such as the GTN 750/650 series. G3X Touch can also display ADS-B "In" weather and traffic information when connected with the new GNX 375, GTX 345 transponder or the GDL® 50R/GDL 52R receiver. This includes our exclusive TargetTrend™ and TerminalTraffic™ technology, giving you a faster, more intuitive way to monitor ADS-B traffic targets. With GDL 51R/GDL 52R, you can also receive and display SiriusXM® aviation weather as well as listen to audio entertainment[3].

With the addition of the optional GEA™ 24 engine interface module and appropriate engine sensors, your G3X Touch can display primary engine information — allowing for the removal of outdated analog gauges. The system can accommodate various engine, fuel and electrical gauges with easy-to-interpret color bands, supporting most popular Lycoming or Continental 4- to 6-cylinder engines. In addition to providing real-time indications, the system also offers a fuel computer, lean assist mode, pilot alerts/advisories and more — enabling you to optimize fuel economy while maintaining high efficiency and performance from your engine. The EIS data can also be logged to an SD™ card in the display and later uploaded to flyGarmin.com® for analysis by your maintenance shop's service team.

Dynamic Maps and Charts

G3X Touch flight displays also incorporate dynamic moving map capability, enabling you to view terrain features, airports, airspace boundaries, navaids, flight plan routings and more — with an aircraft reference symbol overlaid on your current position. To suit your preference, G3X Touch also has the ability to display VFR sectionals and IFR en route charts[2]. Our FliteCharts® database or optional ChartView™ charts from Jeppesen® also offer you georeferenced approach plates and procedures[2]. Plus, when your aircraft touches down, our built-in SafeTaxi® diagrams help you navigate the airport environment safely, with your aircraft's position overlaid onto taxiways, runways, ramps and other accessible locations[2].

Wireless Cockpit Connectivity

For even more capability, G3X Touch flight displays feature built-in wireless Connext cockpit connectivity that lets you stream information between your avionics and select Garmin portables or mobile device apps such as Garmin Pilot™, FltPlan Go and ForeFlight Mobile. This wireless feature makes it easy to use your tablet or smartphone to create flight plans ahead of time in the comfort of your home or office, then quickly upload the data to your avionics while you're preflighting at the airport. You can also use the Connext link to stream GPS position and backup attitude information.

Reliably Reversionary

In configurations where multiple displays are installed, the G3X Touch system offers extra peace of mind. In the unlikely event of a display shutdown or failure, a reversionary mode enables your remaining operational touchscreen to consolidate and present all essential flight information, including EIS data when installed. The displays have backup GPS receivers built in as well, providing extra redundancy. (Note: The GPS receiver built into the display is certified for VFR navigation only.) When installed with an optional G5 electronic flight instrument[1] as backup instrumentation, G3X Touch will automatically sync baro and bug settings as well as provide miscompare alerts. Additionally, the GFC 500 autopilot[1] can even remain operational using only the G5, in the unlikely event of a display failure.

[1]Not available for all aircraft; see authorized Garmin dealer for details
[2]May be limited or unavailable in some areas; see flyGarmin.com for details
[3]Compatible subscription required; SiriusXM® functionality may be limited or unavailable on select mobile apps
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GMU 11 MAGNETOMETER UNIT SPECIFICATIONS

Electrical:	10-32 VDC
Size:	2.74"W x 0.92"H x 3.93" D (7 x 2.3 x 10.0 cm)
Weight:	0.16 lb (0.725 kg) Weight does not include connector

10.6" DISPLAY (GDU 460) UNIT SPECIFICATIONS

Display:	10.6" diagonal (26.92 cm) 1280 x 768 pixels, high-resolution color infrared touchscreen display with adjustable backlighting. Optional lighting bus voltage input available for automatic backlight control
Electrical:	10-32 VDC 30 W max Dual isolated power inputs
Size:	10.85"W x 7.82"H x 3.57" D (198.6H x 275.5W x 90.7D mm)
Weight:	GDU 460, 4.6 lb (2.09 kg) Weight does not include nut plate and connector

7" DISPLAY (GDU 470) UNIT SPECIFICATIONS

Display:	7" diagonal (17.78 cm) 480 x 800 pixels, high-resolution color infrared touchscreen display with adjustable backlighting. Optional lighting bus voltage input available for automatic backlight control
Electrical:	10-32 VDC 20 W max Dual isolated power inputs
Size:	6.01"W x 7.82"H x 3.68" D (198.6H x 152.6W x 93.4D mm)
Weight:	GDU 470, 2.65 lb (1.20 kg) Weight does not include nut plate and connector

GSU 25 ADAHRS UNIT SPECIFICATIONS

AHRS:	Provides accurate digital output and referencing of aircraft attitude, rate, vector and acceleration data Leverages solid-state sensors and sophisticated attitude determination and integrity monitoring algorithms Capable of in-flight dynamic restarts Capable of maneuvers through a range of 360° in bank and pitch Rotation rate: Up to 200°/sec
Electrical:	14-28 VDC
Size:	4.00"W x 2.50"H x 2.12" D (10.16 x 6.35 x 5.38 cm)
Weight:	GSU 25, 0.48 lb (0.217 kg) Weight does not include mounting hardware and connector
Environmental:	
Aircraft pressure altitude range:	-1,400 ft. to 30,000 ft.
Aircraft vertical speed range:	-20,00 to +20,000 fpm to +20,000 fpm
Aircraft airspeed range:	0 - 300 kts IAS
Operating temperature range:	-45°C to +70°C

GEA 24 ENGINE INDICATION (EIS) UNIT SPECIFICATIONS

EIS:	Provides accurate digital monitoring of engine and airframe sensors interfaced with the G3X cockpit displays
Electrical:	14 or 28 VDC systems
Size:	6.50"W x 1.90"H x 3.00" D (16.51 x 4.83 x 7.62 cm)
Weight:	GEA 24, 0.71 lb (0.322 kg) Weight does not include mounting hardware and connector

Engine/Airframe interfaces:

Support is available for most popular piston engine configurations

Configurability of the GSU allows measurement of many different aircraft parameters including but not limited to:

- Ammeters (2)
- Thermocouples (Monitor up to 6 cylinders and 2 turbo inlet temperatures)
- Aircraft bus voltages
- Resistive Sensors (Up to 6)
- Powered Transducers
- Frequency Counter Inputs (Up to 4)
- Discrete I/O (4 In / 2 Out)

TRUSTED, HIGH-PERFORMING RETROFIT AUTOPILOTS

GFC 500 AUTOPILOT: FOR CERTIFICATED GA SINGLE-ENGINE PISTON AIRCRAFT

The Garmin GFC™ 500 is exactly the right product, at the right price, to make a real difference for budget-minded pilots flying popular certified light GA aircraft. Boasting a superior feature set, the GFC 500 incorporates a number of safety-enhancing technologies, including electronic stability and protection (ESP), underspeed and overspeed protection, automatic return-to-level (LVL) mode, flight director (FD) command cues and more. Incorporating the crisp, easy-to-read 3.5" Garmin G5 electronic flight display, the GFC 500 autopilot's scalable architecture lets you select a pitch/roll with an option for pitch-trim and in select installations, yaw damp as an option to support the level of capability you want. The GFC 500 will interface with GNC® 255 and SL 30 Nav/Comm radios, as well as GTN™ 750/650 and GNS 430 and 530 (WAAS and non-WAAS) series navigators (with the addition of an optional GAD™ 29B nav data adapter), for full flight director integration — allowing the system to calculate and display the appropriate pitch and roll attitudes required to intercept and maintain a course or approach path. These flight director cues are displayed as command bars on the G5 electronic instrument. The command bars are always in view when the autopilot is doing the flying — and may also be used for visual guidance when you're hand-flying the aircraft as well. With guidance from your GTN or GNS navigation database, the GFC 500 can automatically fly a wide range of precision, non-precision approaches, as well as holds, procedure turns, missed approaches and more. With an optional Takeoff/Go-around (TOGA) button remotely mounted in the cockpit, the flight director can be cued to automatically indicate and capture the correct pitch attitude required to fly a missed approach and then follow the missed approach procedure loaded in your compatible GPS navigator. The GFC 500 also provides flight director and autopilot mode indications on G3X Touch™ and G500 TXi flight displays and the G5 provides additional redundancy in the event of a disruption to the flight display.

The GFC 500 system employs "smart" servos that are digitally controlled, using ADAHRS reference, to give you ultra-smooth roundouts and intercepts, fail-passive reliability and the most comfortable ride you'll find in this class of autopilot. Drawing on patented top-end Garmin flight control technology, the servos are lighter and quicker-responding than those typically used in competitive systems. They also provide virtually no control system friction with the autopilot turned off, decoupling the motor drives so you can easily hand-fly or override the system without fighting the controls. For maximum reliability, the servos incorporate brushless DC motors and electronic torque limiting that eliminates the need for a mechanical slip clutch.

The list of aircraft currently approved for GFC 500 installation is growing quickly. To check the status of your aircraft, visit Garmin.com/GFC500.

GFC 600 ATTITUDE-BASED AUTOPILOT WITH ADVANCED ELECTRONIC STABILITY AND PROTECTION

Designed for aftermarket installation on high-performance single- and twin-engine piston aircraft as well as turboprops and jets, the GFC™ 600 flight control system offers an impressive array of top-level safety and performance features. Leveraging technologies developed for some of the fastest business jets on the market, these sophisticated features include Garmin ESP™, underspeed and overspeed protection, automatic LVL mode, airspeed climb and descent mode, flight director command cues and more.

GFC 600 provides crisp, precise response and optimum performance over the entire airspeed envelope of your aircraft. Rather than depending on failure-prone mechanical gyros, the GFC 600 system is digitally controlled, using solid-state attitude and air data sensor reference — giving you ultra-smooth roundouts, intercepts and more while also enhancing system reliability. Offering a flexible upgrade solution, GFC 600 can be interfaced with a variety of Garmin and third-party instrumentation and navigation sources. The design of the GFC 600 includes environmentally hardened servos, allowing for installation in a wide range of airframes, including harsh operating conditions. The robust hardware used in the GFC 600 autopilot's scalable architecture lets you tailor your system's configuration to support the level of capability you want. Every component has been engineered to work together seamlessly to ensure optimum smoothness and comfort in flight — while helping to reduce pilot workload in the cockpit.

Guidance from a compatible navigation source, such as GTN™ 650/750, lets the GFC 600 system automatically fly a wide range of precision, non-precision and GPS-guided approaches as well as holds, procedure turns, missed approaches and more. GFC 600 also includes built-in GPS roll steering capability, allowing smoother navigation tracking and eliminating the need for external roll steering converters. For installations including a compatible flight display (such as G500 TXi/G600 TXi), flight director cues are displayed as command bars and are always in view when the autopilot is doing the flying — and may also be used for visual guidance when you're hand-flying the aircraft. Better still, with support for a remotely installed Takeoff/Go-around (TOGA) button, the autopilot can be cued to automatically capture the correct pitch attitude required to fly a missed approach and then follow the missed approach procedure loaded in your compatible GPS navigator.

For selection and control of GFC 600 modes and functions, a compact autopilot controller comes standard with the system. Featuring backlit keys and a bright, sunlight-readable annunciator display, the mark-width controller mounts conveniently in your avionics stack. An intuitive up/down control wheel on the unit allows for easy and precise adjustment of aircraft pitch, airspeed and vertical speed modes. And for installations where the autopilot controller is out of the pilot's primary field of view and a G500 TXi or G600 TXi flight display is not installed for mode annunciation, a stand-alone mode annunciator is available that retains an identical footprint of third-party autopilot annunciators on the market. Support for a remotely installed control wheel steering (CWS) button allows you to temporarily disengage the servos to hand-fly the aircraft. Then, to further enhance operational control in potentially disorienting situations, a dedicated LVL mode button on the autopilot controller lets you command the autopilot to automatically return your aircraft to straight-and-level flight. Integrated "smart" servos linked to the flight control surfaces of your aircraft are used to apply the control inputs as commanded by the autopilot. Digitally controlled speed and torque limits on these inputs allow faster, crisper and more powerful response — enabling your GFC 600 system to track the intended flight path with smooth efficiency. The servos also provide virtually no control system friction with the autopilot turned off, decoupling the motor drives so you can hand-fly with ease.

The list of aircraft currently approved for GFC 600 installation is growing quickly. To check the status of your aircraft, visit Garmin.com/GFC600.

GTX 345 / GTX 335 SPECIFICATIONS

Unit Size:	1.65" h x 6.30" w x 10.07" d (42 x 160 x 256 mm)
Display type:	Digital
Weight (unit, rack, connectors):	3.1/3.2 lbs (1.41/1.45 kg)
Voltage range:	14/28 VDC (18/20 W Max)
Transmit power:	200 W minimum
Temperature:	-40° C to +70° C
Operating altitude:	To 55,000 ft (16,800 m)
Cooling input:	Not required
Environmental compliance (TSO Approved):	DO-160G
Software compliance (TSO Approved):	DO-178 Levels B, C, D, E
Hardware compliance (TSO Approved):	DO-254 Level C
TSO compliance (Approved):	TSO-C88b (w/opt. alt. encoder; TSO-C112e (Class 1, Level 2els; TSO-C154c (Class A1S); TSO-C157a (Class 1); TSO-C166b (Class A1S); TSO-C195a (Class C1,C2,C3,C4)
Mount type:	Panel
Transponder type:	Mode A/C, S and ES
Squawk code selection:	Push-button

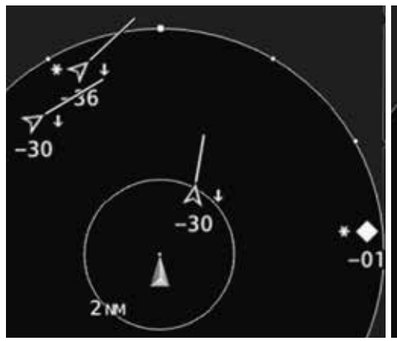
TECHNOLOGY EVERYONE CAN IDENTIFY WITH

The GTX™ 345 all-in-one ADS-B transponder offers ES ADS-B "Out" with options for built-in WAAS, as well as dual-link ADS-B "In," which unlocks more capabilities for pilots by displaying subscription-free weather[1] and advanced ADS-B traffic, incorporating exclusive features such as TargetTrend™ and TerminalTraffic™, on a variety of current and legacy Garmin displays, including select G1000® Integrated Flight Decks, G500/600 and G500TXi/600 TXi flight displays, GTN™ 650/750 series navigators and GNS™ 430W/530W navigators. When paired with an active traffic system, the GTX™ 345 also combines ADS-B traffic targets and active traffic targets to display a comprehensive traffic picture, and it can be integrated into the aircraft's audio panel to provide ATC-like audible alerts, such as "Traffic: 10 o'clock, same altitude, two miles" to help pilots keep their eyes outside the cockpit when looking for traffic. What's more, the GTX 345 provides, via BLUETOOTH® and Connext® wireless technology, ADS-B traffic, weather, GPS position data and back-up attitude information on the Garmin area®

660/796/795 portables and popular Garmin Pilot™, FltPlan Go and ForeFlight Mobile apps. And the GTX 345 comes in an attractive size and form factor, making it easy to replace the most popular transponders in the industry. Remote-mount options that are controllable with a GTN 650/750 series navigator are also available.

The GTX 335 ADS-B transponder offers ES ADS-B "Out" with options for built-in WAAS. It comes in an attractive size and form factor, making it easy to replace the most popular transponders in the industry, and remote-mount options that are controllable with a GTN 650/750 series navigator are also available.

For Mode C operation, Garmin offers the affordable GTX™ 325 panel-mount transponder with dedicated push-button keys for code selection. A remote-mount version, the GTX 32, is also available for use with the GTN 650/750 touchscreen series, which allow for remote transponder mode and code selection.



TargetTrend™ relative motion display helps simplify pilot decision-making with a more dynamic view of one's traffic situation. Compared to the traditional, or absolute, view of traffic (pictured at left), which shows how targets are moving relative to the ground, the TargetTrend display shows how other aircraft are moving in relation to your aircraft's flight path — and which trajectories are most likely to converge with your own.

TerminalTraffic™ Feature is available with SafeTaxi® to enhance the pilot's traffic situational awareness in the airport environment by displaying surface targets for ADS-B-equipped taxiing aircraft and ground vehicles on the airport diagram.

Packed with features to streamline your cockpit workload, the Garmin GNC® 255 series nav/comm radios offer full 200-channel VOR/LOC/GS capability and your choice of 10- or 16 watts of comm transmit power. The companion GTR 225 series comm-only transceiver offers the same choice of VHF power output configurations. And both the GNC and GTR radios are available in versions that can be set for 25 or 8.33 kHz spacing – providing up to 2280 channels with 8.33 spacing to meet the comm compliance rules for Europe. (Note: the GTR base model offers 25 kHz spacing only.)

ALWAYS KNOW WHO YOU'RE TALKING TO

Incorporating a ground breaking frequency lookup database, these GTR/GNC series "smart" radios from Garmin bring whole new levels of efficiency and convenience to your cockpit management. For example, with the units' handy "frequency lookup" function, you can simply enter the navaid or airport identifier to find the frequency (or frequencies) associated with that location: tower, ground, ATIS, clearance delivery and so on. Moreover, with a compatible GPS input, the lookup function will automatically provide the station identifier once you've dialed in the frequency. So it's easy to verify who you're talking to. Frequency presets, which can be accessed via a remote switch, enable you to tune a comm frequency into the standby display and then activate it via "flip-flop" entry — without removing your hands from the flight controls. In addition, standby frequency monitoring enables you to listen to ATIS or other transmissions without leaving the active frequency. It's almost like having two radios in one. Other handy features include an internal two-place intercom, a built-in course deviation indicator (CDI) on the nav side, storage/recall for up to 15 of your most often-used frequencies and automatic storage for the last 20 comm frequencies you've called.

NAVIGATION RADIO SPECIFICATIONS

GNC 255 Series Nav/Comm

200 channel Nav with VOR/Localizer and Glideslope receivers
Built-in VOR/localizer converter
Database lookup of frequencies using navaid ID
VOR receiver displays to/from and radial
Digitally decoded OBS setting
Sunlight readable full alphanumeric display
Automatic display of station ID by decoding Morse code
Interfaces to most CDI (w/ resolver), HSI and autopilot systems
TSO: C34e; C36e; C40c
Accepts 9 to 33 VDC input

Nav Frequency Database

Includes 25 nearest VORs; frequency lookup by identifier

Physical Specifications

Size:	1.65"h x 6.25"w x 10.4"d (4.19 x 15.88 x 26.42 cm)
Weight:	3.02 lbs (1.37 kg) unit only; 3.46 lbs (1.57 kg) with mounting rack
Depth:	11.23" (28.52 cm) behind panel, including mounting rack and connectors
TSO Compliance:	TSO-C157, DO-267A

COMM RADIO FEATURES

GTR 225 and GNC 255

760 communication channels (w/ 25 kHz spacing); 2280 channels (w/ 8.33 kHz spacing)
Frequency range 118.000 to 136.992 MHz (w/ 8.33 kHz spacing)
Active and standby flip-flop frequencies
One-touch 121.5 emergency channel tuning
Comm frequency monitor function (listens to standby while monitoring the active)
Recall of frequency from database by facility name and type
Database reverse lookup of frequencies providing station ID and frequency use (TWR, ATIS, etc.)
Volume control bar graph display
Alphanumeric display of frequency types (ATIS, GRND, TWR, etc.)
High-visibility alphanumeric LCD display
Transmit status indicator
Backlit keypad controls
Automatic display intensity control
Built-in, two-place voice activated intercom
Frequency memory and recall
Stores/recalls 15 user defined frequencies
Stores/recalls previous 20 frequencies used
Squelch test function
Stuck mic time-out
12 watt audio amplifier

Performance

Transmit power:	10 or 16 watts output (by model)
Input voltage range:	4 to 33 VDC
Operating temperature range:	-20 to +55 C
Certified TSO:	C169a (transmitting and receiving)
Certified TSO:	C128a (stuck mic)

Physical Specifications *(GTR 225 COMM)*

Size:	1.65"h x 6.25"w x 10.4"d (4.19 x 15.88 x 26.42 cm)
Weight:	2.30 lbs (1.04 kg) unit only; 3.06 lbs (1.38 kg) with mounting rack
Depth:	11.23" (28.52 cm) behind panel, including mounting rack and connectors

GSB™ 15 USB CHARGER

This dual-port USB charger delivers 3 amps of electrical current to power two tablets or similar smart devices at full brightness — while simultaneously charging their batteries. So you always have the power to access flight plans, moving maps, charts, weather data, manuals and more — while your passengers can access entertainment, messaging and all types of productivity apps. The slimline GSB 15 measures just over 1.5" square and stands less than an inch high. Two different versions are available: either a straight or 90-degree power wiring connection, depending on the mounting location. The charger fits in a 1" hole and can be mounted into a standard instrument hole in the panel with an optional 2.25" or 3.125" adapter.

GSB 15 HIGH-SPEED USB CHARGER

Versions:	Rear connector and bottom/90-degree connector
Charging port type:	USB Type-A
Input voltage:	14 V, 28 V
Output voltage:	5-12 V
Power consumption:	Max (while charging) = 40 W Min (not charging) = 300 mW
Maximum current output:	5 V 3A 9 V 2A 12 V 1.5A 18 W Max
Required circuit breaker size:	5 A
Dimensions:	1.50" W x 1.55" H x 0.93" D
Weight:	0.16 lbs
Certifications:	TSO-C71 ETSO-C71

[1]We are working on this certification and will receive guidelines for Qualcomm messaging from segment soon.

GARMIN CONNEXT®: YOUR GATEWAY TO COCKPIT CONNECTIVITY

Garmin Connext is an evolving family of "connected cockpit" solutions designed to seamlessly interface people, devices and information — on the ground, in the air, from anywhere. Using datalinks, satellites, BLUETOOTH® and other emerging technologies, Garmin Connext brings together a whole spectrum of wireless networking options: Whether it's enabling an iPad® or smartphone to upload flight plan data into your cockpit avionics — or offering worldwide weather, position reporting and voice/text messaging via satellite, or remotely controlling action cameras and streaming live video to your flight displays — the world of Garmin Connext is simply a smarter, more user-friendly environment for those who fly.

Using a BLUETOOTH link, Garmin Connext lets you take advantage of close-range wireless capabilities already built into many tablet computers and smartphones, enabling information to flow back and forth between those devices and your Connext-capable[1] avionics in the panel. For example, with our Garmin Pilot™ app on your tablet or smart device, it's easy to create and preload your flight plan from the comfort of your home or office. Then, once you arrive at the airport, simply use Connext, via our Flight Stream 510 or 210 cockpit-mounted gateways, to wirelessly upload the information — waypoints, airway routings and all — into your plane's GTN™ or GNS series avionics during preflight. You save time. You get airborne more quickly.

Likewise, your Flight Stream also lets you use your iPad to wirelessly access data from your avionics for display in Garmin Pilot™, FltPlan Go and ForeFlight Mobile apps, as well as Garmin aera® 660/796/795 portables. So you can enhance the device's map and flight displays with graphical weather, traffic, GPS position reference, AHRS for backup attitude and 3-D synthetic vision displays — virtually turning your mobile touchscreen into an extra control/display in the cockpit[1].

And with a Flight Stream 510 — a patented multimedia card enabled with WiFi® and BLUETOOTH® technology that installs easily into your GTN™ or TXi card slot — you get wireless database transfer to and from the avionics and Garmin Pilot app. Via Database Concierge, you can wirelessly download your new avionics databases to your Apple® mobile device at home, then upload them to your GTN quickly at the airport. And if you have other compatible Garmin avionics, those new databases are synchronized behind the scenes; you even get immediate access to the departure, approach and arrival charts you need for your flight with chart streaming, even while those databases are still synchronizing.

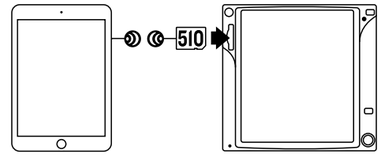
On a vastly more far-reaching scale, Garmin Connext integrated satellite and ground network links can be used to provide a world of seamless connectivity solutions — everything from Connext satellite weather and automatic position reporting to inflight text messaging and voice calling through your headsets with Garmin Pilot that uses your mobile device's contacts.

FLIGHT STREAM 210/110 SPECIFICATIONS

Unit Size:	2.74" w x 0.92" h x 3.93" d (7.0 x 2.3 x 10.0 cm)
Unit Weight:	0.156 lb (0.07 kg) excluding connector kit 0.27 lb (0.12 kg) including connector kit
Temperature:	-30°C to +70°C
Operating Altitude:	To 55,000 feet
Power Input:	14 or 28 VDC (9.5 to 33.0 VDC)
Transmitter Output:	4 dBm (2.5 mW)
Effective Range:	Unimpeded, 33 ft (10 m)
Environmental Compliance:	DO-160F
Software Compliance:	DO-178B Level E
TSO Compliance:	TSO-C157, DO-267A

FLIGHT STREAM 510 SPECIFICATIONS

Unit Size:	0.94" w x 1.26" h x 0.08" d (2.4 x 3.2 x 0.2 cm)
Operating temperature range:	-20° C to +55° C
Software compliance:	RTCA DO-178B Level E
Hardware compliance:	RTCA DO-254 Level D
Environmental compliance:	RTCA DO-160F
TSO compliance:	TSO-C113A
Memory Card Specifications:	Class: MMC Capacity: 32 GB
Wi-Fi Specifications:	Class: 802.11 a/b/g/n Effective unimpeded Wi-Fi Range: 65 ft (20 m) Transmitter power: 10dBm (10mW)
BLUETOOTH Specifications	Version: 3.0 Class: 2
Transmitter power:	4dBm (2.5mW)
Effective unimpeded BLUETOOTH range:	33 ft (10m)



The Garmin Flight Stream series of BLUETOOTH® gateways provide wireless connectivity between your compatible tablet/mobile device[1] and your avionics.The Flight Stream 510 and 210 work with your GTN™ 750/650 or GNS 430/530W series navigators, while the lower-priced Flight Stream 110 model works with the GDL® 88 datalink series, providing a way to access ADS-B weather/traffic and GPS information on your compatible mobile device, without requiring an in-panel navigation display.

FLIGHT STREAM AND REMOTE CAPABILITIES	FLIGHT STREAM 110	FLIGHT STREAM 210	FLIGHT STREAM 510	GTX 345
Rock-solid GPS	X	X	X	X
ADS-B weather and traffic	X	X	X	X
SXM weather	X	X	X	
SXM audio remote control	X	X	X	
Attitude information		X	X	X
Two-way flight plan transfer		X	X	
GDL 88 and GDL 69/A compatible	X	X	X	
GNS 430W/530W compatible	X	X		X
GTN series compatible	X	X	X	X

[1]Capabilities such as GPS, attitude, weather, traffic and flight plan transfer, SiriusXM® weather and audio control are limited to the version of Flight Stream, the avionics installed in the aircraft as well as portable device. Compatibilities continue to grow with more apps and Garmin portables. Check the Flight Stream 510/210/110 page's 'Supported Devices' tab for the latest feature and compatibility information.

BETTER COMMUNICATION STARTS WITH SMARTER AUDIO CONTROL

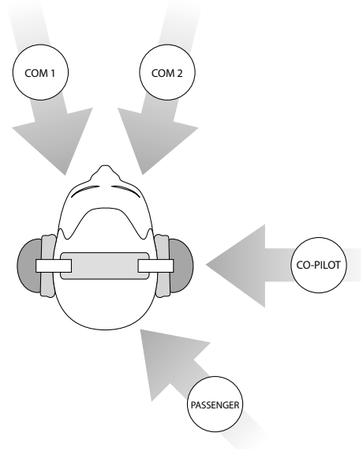
The Garmin family of innovative audio panels offer the latest in digital features to help streamline cockpit management, seek to enhance safety of flight and improve communications between flight crews, ground controllers and passengers.

Our newest top-of-the-line model, the GMA™ 350c, is the most technologically advanced audio switching system we've ever introduced. Featuring built-in BLUETOOTH® wireless connectivity, it can be used with your smartphone (or other compatible devices) to make calls from the ramp or stream great audio entertainment through your cabin headsets. It can also pair with the VIRB® Ultra 30 and VIRB 360 action cameras to capture ATC radio and intercom conversation in your video wirelessly, in place of using the wired headset audio cable. Other audio system highlights include ambient noise level sensing for automatic volume adjustment, enhanced auto-squelch capability, clearance recorder and our unique 3-D audio processing that adjusts audio in the pilot's stereo headset, so that it mirrors how the human ear naturally "locates" sound in space. So it's easier to identify and focus on top-priority communications from among the many audio inputs in a busy cockpit. Then, for the crowning touch, there's our patented Telligence™ voice control feature that enables you to activate certain key audio functions by using spoken commands. By simply pressing a switch on the yoke and saying "Comm One" or "Comm Two," you can select the radio you want — without interrupting your visual scan or taking your hands off the controls during those busy times in flight.

All the same features of the GMA™ 350c are also incorporated in a remote-mount version, called the GMA 35c, which is designed to interface with Garmin GTN™ 750 series GPS navigators. The large GTN touchscreen, when doubling as the control panel for your GMA 35c audio system, serves to reduce the total stack height of the avionics in your panel, while streamlining all your cockpit communications. Both the GMA 350c and GMA 35c, as well as our non-BLUETOOTH equipped versions, the GMA 350 and GMA 35, feature 3-D audio, clearance recorder, convenient, LED-illuminated button controls for audio selection and split comm capability for pilot and co-pilot.

For helicopter cockpits or others that need to address multiple-comm installations, Garmin also offers the GMA 350Hc. It includes the same core features as the standard GMA 350c, plus it offers night vision goggle compatibility with green annunciation and backlighting — as well as three-comm radio support and corresponding split-com modes (1/3 and 2/3) to accommodate a third transceiver.

For superior inflight audio at an affordable price, GMA™ 345 series digital audio panels feature 3-D spatial sound processing, BLUETOOTH connectivity and a USB charging port (GMA 345) or a 3.5 mm audio jack (GMA™ 342), marker beacon receiver, advanced auto squelch, clearance playback and impressive audio mixing and distribution features. Furthermore, they support either dual-comm or three-comm operations, offer a six-place automatic VOX intercom with three modes of isolation, and provide split-comm mode that lets the pilot and co-pilot broadcast on independent frequencies. Plus, both are easy slide-in upgrades from select third-party audio panels or legacy GMA™ 340 units.



With Garmin 3-D audio processing, sound reception in your stereo headset can have a directional effect. For example, Comm 1 may sound as if it's coming from your 11 o'clock position; Comm 2 from your 1 o'clock, co-pilot intercom from 3 o'clock, and so on. The 3-D feature can be enabled/disabled to suit pilot's preference. **Experience it at Garmin.com/3Daudio.**

	GMA 342	GMA 345	GMA 35	GMA 350
GMA 340 Pin and Rack Compatible	Yes	Yes	No	No
Seat Positions	6	6	6/7	6/7
COMs Receivers Alerts (unstitched)	2 5 4	2/3 5 4	2/3 5/4 4	2/3 5/4 4
Marker Beacon	Yes	Yes	Yes	Yes
BLUETOOTH	No	Yes	Yes (GMA 35c)	Yes (GMA 350c)
Intercom Squelch Modes	Keyed Auto	Keyed Auto	Keyed Manual Auto	Keyed Manual Auto
Front Panel Audio Jack	Yes	No	Yes	Yes
USB Power Charger	No	Yes	No	No
Dedicated Music Volume	Yes	Yes	Yes	Yes
Clearance Recorder	60 seconds	60 seconds	150 seconds	150 seconds
3-D Audio	Yes	Yes	Yes	Yes
Speaker	Yes	Yes	Yes	Yes
Auto Speaker Volume	No	No	Yes	Yes
Telligence™	No	No	Yes	Yes

SHARED SPECIFICATIONS

Power input: 11-33 VDC input
Temperature: -20° C to +55° C (operating)
Altitude range: to +55,000 ft. MSL unpressurized
GMA 35 and GMA 350 families highlighted extended environmental capabilities:
Temperature: -45° C to +55° C (normal operating), -55° C to +70° C (short-term operating)
Helicopter Vibration Data Available

ANGLE OF ATTACK: IT'S A WING THING

Flying with angle of attack (AOA) information provides important potential safety advantages. You can see when the angle between your aircraft's wing and the oncoming airflow becomes too great to support the plane in flight. Or, in other words, you can see when the wing is approaching a stall, at any flight attitude or airspeed. This is vital — and potentially life-saving — information. Thanks to Garmin AOA innovation, this technology has become more easily accessible to General Aviation pilots and their aircraft. Supporting the FAA's recent move to encourage and streamline AOA approvals for GA cockpit installations, the capable-yet-affordable Garmin AOA system is designed to enhance awareness of critical wing airflow characteristics — and alert pilots before a dangerous aerodynamic stall can occur. The Garmin AOA system is comprised of three components: the GI 260 indicator, the GAP 26 AOA probe and the GSU 25 air data computer. Using a combination of colors and chevrons, the Garmin GI 260 AOA indicator offers a quick, at-a-glance indication of trending airflow characteristics during the most critical phases of flight — with audible alerts further compelling pilot attention when things get extra busy in the cockpit. Supplementing traditional airspeed indicators and stall warning systems, the Garmin AOA system provides an instantaneous readout of the wing's stalling margin, giving pilots the most accurate real-time picture of their aerodynamic situation. When approaching an impending stall, the Garmin AOA indicator provides progressive audible and visual alerts as the aircraft nears the critical angle of attack — with flashing red chevrons pointing down to indicate an imminent loss of lift. Unlike less capable lift reserve indicators, our system uses industry-leading normalized AOA technology to provide superior performance, precision and reliability throughout all phases of flight. Better still, it's an easy system to install – thanks to our universal inspection plate mounting bracket for the GAP 26 under-wing AOA probe.

GI 260 ANGLE-OF-ATTACK (AOA) INDICATOR SPECIFICATIONS

Electrical:	14-28 VDC
Size:	1.36" w x 3.19" h x 2.36" d (3.45 x 8.10 x 6.06 cm)
Weight:	0.27 lb (0.122 kg)

Environmental

Operating temperature range: -45°C to +70°C

GAP 26 ANGLE-OF-ATTACK (AOA) PROBE SPECIFICATIONS

Electrical:	Unheated versions of the GAP 26 do not require power. Supply voltage for heated pitot is 14 VDC.
Size:	0.82" w x 16.00" h x 6.12" d (2.08 x 40.64 x 15.54 cm)
Weight:	Unheated, 0.33 lb (149.7 g) Heated, 0.39 lb (176.9 g)

GSU 25 AIR DATA COMPUTER SPECIFICATIONS

Electrical:	14-28 VDC
Size:	4.00" w x 2.50" h x 2.12" d (10.16 x 6.35 x 5.38 cm)
Weight:	GSU 25, 0.48 lb (0.217 kg) Weight does not include mounting hardware and connector

Environmental

Aircraft pressure altitude range: -1,400 ft. to 30,000 ft
Aircraft vertical speed range: -20,00 to +20,000 fpm
Aircraft airspeed range: 0 - 300 kts IAS
Operating temperature range: -45°C to +70°C

SEPARATION SOLUTIONS FOR HIGH-TRAFFIC AIRSPACE

In busy, high-density airspace, pilots need every possible advantage when it comes to "seeing and avoiding" traffic conflicts. That's why Garmin developed the GTS™ family of ADS-B enhanced traffic advisory (TAS) and traffic collision avoidance (TCAS) systems. Featuring exclusive Garmin CLEAR CAS™ technology, these attractively priced systems provide accurate, dynamic surveillance of nearby transponder-equipped aircraft — with spoken audio alerts similar to those given by ATC to help pilots quickly respond to potential flight path encroachments.

The GTS systems use a synthesis of both active and passive surveillance (including 1090 MHz ADS-B "In") to correlate target data and pinpoint traffic threats, so they're able to provide advanced real-time traffic information to the cockpit — and augment reports from radar-based air traffic control.

The systems can display traffic symbols and advisories on a variety of compatible navigation or multi-function display products. Passive surveillance with ADS-B "In" capability is available with installation of the GTX™ 335 ES or GTX 345 series of transponders (sold separately) or other compliant ADS-B equipment, such as the GDL 88 Dual-Link (1090/978 Mhz) Transceiver[1]. On compatible displays, the system is able receive and display the target aircraft's flight ID, GPS position, relative altitude and direction of flight. Also, display of course trend vectors and vertical climb or descent information (if available) can be accommodated. Therefore, instead of just seeing random targets, pilots will ultimately be able to identify and track specific aircraft flight trajectories with much greater precision. So, in busy airspace, they'll be able to fly with a much clearer tactical picture of their immediate traffic situation.

All GTS 800/825/855 units will operate to 55,000 ft — so they're not constrained by the much lower altitude limits imposed on some competitive TAS/TCAS systems. The Garmin GTS equipment can track up to 75 traffic targets simultaneously — and display up to 30 intruder threats at a time, depending on the specific capabilities of the display system being used. (There is no dedicated panel instrument for Garmin TAS; it interfaces with your existing navigation displays.) Targets are depicted using familiar TCAS-defined symbology. And selectable horizontal display ranges let pilots configure the presentation to their specific flight requirements.

Instead of the generic "Traffic, traffic" voice alerts of some earlier-generation systems, the GTS series' exclusive CLEAR CAS technology provides for expanded audio messaging in an ATC-like verbal format: "Traffic. One o'clock. High (or Low or Same altitude). Two miles." If surveillance bearing information is not available on the intruder, "Traffic, no bearing" is annunciated.

By vocalizing more specific traffic-spotting information, the GTS 800 series lets pilots know instantly where to look — keeping their "eyes-out" to scan for traffic instead of looking down at a cockpit display. This can save vital split seconds in a fast-converging situation. And sometimes split seconds can mean all the difference.

[1] NOTE: ADS-B correlated traffic target symbology and flight data shown in our brochures may not be available on certain display products. Our compatibility for these features is growing; however, some products will not be upgradeable. See our website (Garmin.com/traffic) or your Garmin dealer for details on display requirements and compatibility.

Integration of traffic and weather on a Garmin moving-map display provides critical situational awareness of potential flight-path conflicts.

With Garmin SVT-capable flight displays, traffic can be depicted in a 3-D format. As targets get closer, the symbols get larger.

GTS series traffic alerts can be displayed on Garmin GTN 650/750 and 430W/530W series avionics

GARMIN TAS/TCAS COMPARISON	GTS 800	GTS 825	GTS 855
Traffic system type	TAS	TAS	TCAS 1
Transmitter power output	40 watt	400 watt	400 watt
Active surveillance range (typical)	12 nm	Up to 40 nm	Up to 80 nm
Number of targets tracked	60	60	60
Number of targets displayed (dependent on display system capability)	30	30	30
Display range	2/6/12	2/6/12/24/40	2/6/12/24/40/80
Range accuracy	+/- .05 nm	+/- .05 nm	+/- .05 nm
Bearing accuracy	5° RMS	5° RMS	5° RMS
Altitude accuracy	+/- 200 ft	+/- 200 ft	+/- 200 ft
Altitude resolution	+/- 100 ft	+/- 100 ft	+/- 100 ft
Max vertical separation	+/- 10,000 ft	+/- 10,000 ft	+/- 10,000 ft
Audible target threat position callouts	Yes	Yes	Yes
1090ES ADS-B receiver*	Yes	Yes	Yes
Correlated display capability	Yes	Yes	Yes
Selective Mode-S interrogation	No	Yes	Yes
Maximum operating atitude	55,000 ft	55,000 ft	55,000 ft

*Requires ADS-B "Out" capability

GTS 800/825/855 PROCESSOR LRU SPECIFICATIONS

Unit Size	
GTS 800:	6.25" w x 2.7" h x 12.7" d (15.87 x 6.86 x 32.25 cm)
GTS 825/855:	6.25" w x 3.42" h x 12.7" d (15.87 x 8.69 x 32.25 cm)
Weight	
GTS 800:	9 lbs (4.08 kg) LRU Vert. Rack 1.05 lbs (0.48 kg) Horiz. Rack 1.94 lbs (0.88 kg) excludes connectors
GTS 825/855:	11.30 lb (5.13 kg) LRU Vert. Rack 1.35 lb (0.61 kg) Horiz. Rack 1.94 lb (0.88 Kg) excludes connectors
Temperature:	-55°C to +70°C
Operating Altitude:	To 55,000 feet
Power Input:	14 or 28 VDC 40 watts max (GTS 800); 84 watts max (GTS 825, 855)
Cooling Input:	Integrated
Environmental Compliance:	RTCA DO-160E (GTS 800); RTCA-DO-160F (GTS 825, 855)
Software Compliance:	RTCA DO-178B Level C (GTS 800); RTCA-DO-254 Level B (GTS 825, 855
Hardware Compliance:	RTCA DO-254, Level C (GTS 800); RTCA DO-254 Level B (GTS 825, 855)
TSO Compliance	
GTS 800 TAS:	TSO-C147, TSO-C166a, DO-197A, DO-260A
GTS 825 TAS:	TSO-C147, TSO-C166b, RTCA DO-197A, RTCA DO-260B
GTS 855 TCAS I:	TSO-C118, TSOC166b, DO-197A, DO-260B

A 58 DIRECTIONAL ANTENNA SPECIFICATIONS

Unit Size:	4.03" w x 2.97" h x 5.63" d (10.24 x 7.54 x 14.30 cm)
Weight:	0.82 lb (0.37 kg) with QMA connectors 0.85 lb (0.39 kg) with TNC connectors
Omni-Directional Antenna (optional)	
Unit Size:	0.98" w x 3.30" h x 4.00" d (2.49 x 8.38 x 10.16 cm)
Weight:	0.24 lb (0.10 kg); excludes connectors

IT'S AFFORDABLE TECHNOLOGY FOR KEEPING YOUR HEIGHT IN SIGHT

Utilizing the same patented technology as our higher-end GRA™ 5500 radar altimeter, the affordable GRA 55 system offers a great value in digital AGL measurement for most GA aircraft and helicopters. When paired with the stand-alone GI 205 indicator, the GRA 55 provides a reliable, highly accurate radar altimeter solution without the need to equip your cockpit with a complete glass flight display system. However, if you do plan to install such a system — or if you already have one — the GRA 55 will also integrate with such popular Garmin flight displays as the G500/G500H/G600 and G500 TXi/G600 TXi systems — as well as other industry-standard compatible displays. Yet, no matter which display option you choose, the GRA 55 conveniently puts your AGL readout right where you need it for optimum visibility in high-workload landing situations. The GRA 55 is designed to work in a full range of demanding environments — allowing you to go from rough terrain to tree canopies, from sand to choppy water, while always knowing precisely how much room you have to maneuver. And thanks to patented self-testing technology that continuously monitors incoming data and system integrity, you can be assured that the altitude provided is highly accurate, even in low-visibility conditions. What's more, in most installations this self-testing technology virtually eliminates the need for pilot input or interaction with the GRA 55 in any way. It simply provides a smooth, reliable, highly accurate altitude readout to help keep your AGL awareness as safe and dependable as you've always wanted it to be.

SPECIFICATIONS

Physical

Unit Size:	3.99"h x 3.02"w x 11.62"d (10.13 x 7.67 x 29.52 cm) includes mounting rack
Mounting:	Mounting rack and hardware supplied
Unit Weight:	3.5 lb. with mounting rack

Environmental

Temperature:	-55° C to +85° C (Operating);
Altitude range:	25,000 ft maximum
Power requirements:	14 or 28 VDC input; 13.75 watts maximum

Other Specifications

Altitude Accuracy:	± 1.5 ft (3 - 100 ft AGL); ± 2 % (> 100 - 2500 ft AGL)
Altitude Range:	-20 - 2550 ft AGL
Horizontal Velocity:	0 - 200 knots maximum
Vertical Velocity:	20 ft/sec maximum (up to 100 ft AGL); 25 ft/sec maximum (above 100 ft AGL)
Pitch Angle:	± 20° maximum
Roll Angle:	± 20° maximum (with published altitude accuracy limits); ± 20° to ± 30° (with ± 20 % altitude accuracy limits throughout entire altitude range)

Designed to integrate with the GI 205 stand-alone indicator, as well as compatible glass flight displays, the GRA™ 55 radar altimeter offers a complete and accurate height-above-terrain tracking solution at a value price. Featuring a vibrant OLED display with full 180-degree viewing angle, the GI 205 indicator offers easy viewability in all types of flight conditions, day or night. A knob on the face of the display offers easy selection of decision height (DH). And upon arrival at DH, a "minimums, minimums" voice callout or traditional audible tone is available. For added situational awareness, a graphical trend indicator conveys vertical velocity information at a glance.

REDEFINING WEATHER RADAR PERFORMANCE

GWX 75 – Combining an all solid-state transmitter with high-sensitivity receiver and digital signal processing, the Garmin GWX™ 75 offers superior weather detection technology compared to earlier magnetron-based radars. A variety of compatible MFDs, including the GTN™ 750 series touchscreens, can double as your radar display – providing an overlay of the weather picture on your graphical moving map.

Displaying four times more color gradients than traditional four-color radars, the Doppler-enabled GWX™ 75 radar helps take the guesswork out of real-time weather tracking and analysis. The additional colors provide a far more nuanced interpretation of storm cell dynamics. Plus, this high-definition target contouring combines with exceptional range and adjustable scanning profiles — both horizontal and vertical — to allow you to more accurately assess a storm threat via your compatible flight deck or multifunction display.

The fully stabilized GWX 75 offers horizontal scan angles up to 120 degrees to locate and evaluate convective weather activity. Also, the altitude-compensated tilt feature helps streamline your in-flight workload by eliminating the need to reset the antenna tilt after altitude changes. Set it once to the tilt angle you want, and the radar will automatically adjust to that level after any climb or descent.

The radar's vertical scanning mode aids in analyzing storm tops, gradients and cell buildups at various altitudes. In addition, our Weather Attenuated Color Highlight (WATCH®) technology helps identify the shadowing effects of short-range cell activity — highlighting areas where radar signals are weakened, or attenuated, by intense precipitation (or large areas of lesser precipitation) and may not fully reflect the "storm behind the storm." With these capabilities, the GWX 75 radar makes it easier to scan large geographic areas and make sound weather-related decisions. Plus, a handy ground mapping mode lets you use GWX 75 to scan terrain features for visual navigation.

With its digital design, the GWX 75 system offers reduced power consumption and extended service life compared to previous generations of magnetron-based radars. While magnetron tubes degrade or burn out over time, the solid-state technology in GWX 75 maintains a consistent weather picture over its entire life cycle — all while using only 40 watts of transmission power. The weight-saving, all-in-one antenna/receiver/transmitter unit is available with 10", 12", 14" or 18" phased array antenna plates, so GWX 75 onboard radar capability can be adapted to a wide variety of aircraft radome configurations.

TAKING WEATHER AWARENESS TO NEW HEIGHTS

You can't control the weather. But at least you can stay on top of it — with the help of satellite updates from the GDL® 69 datalink receiver.

Supplying graphical and textual weather information to the panel-mount GTN™ 650/750 series avionics, as well as the G500/G600, G500 TXi/G600 TXi multifunction displays, the GDL 69 helps pilots make timelier and more strategic weather avoidance decisions.

Data uplink service is provided through the Sirius XM® Satellite Weather Service, using location-specific Sirius XM information. Sirius XM's powerful S-band geostationary satellites deliver seamless, near real-time coverage at any altitude across the continental United States and parts of Canada[1]. Thus, you're able to receive and view high-resolution color graphics offering detailed NEXRAD and METARs data, as well as current reports on precipitation, lightning, winds-aloft, echo tops, TFRs and more.

For pilots who want the latest in SiriusXM Satellite Radio capability, Garmin offers the sound-enabled GDL 69A. This receiver combines Sirius XM's satellite weather link with a complete digital audio package — so passengers can enjoy more than 170 channels of continuous news, sports, music and entertainment, while flying anywhere in the XM coverage area[2]. The GDL 69A will interface through a variety of Garmin panel-mount cockpit displays. And for even more flexibility, Garmin's optional Flight Stream 510/210/110 BLUETOOTH® gateways can enable wireless remote tuning via iPad® or other compatible mobile devices, so listeners can control their SiriusXM Radio channels and volume from anywhere in the cabin.

SPECIFICATIONS

Physical

Unit Size:	6.15" w 1.05" h x 7.20" d (15.62 x 2.67 x 18.29 cm)
Mounting:	Mounting rack and hardware supplied
Weight:	1.86 lbs. unit (.84 kg), 2.81 lbs. (1.27 kg) unit and rack

Environmental

Temperature:	-55° C to +70° C (Operating) -55° C to +85° C (Storage)
Humidity:	95% non-condensing
Altitude range:	-15,000 ft to +55,000 ft
Power requirements:	9 to 33 VDC input 4.2 watts maximum

Other Specifications

Satellite receiver frequency: 2332.5 to 2345 MHz
Downlink data rate: 38.4K bits per second
Software Certification: RTCA DO-178B Levels B and D
Environmental Certification: RTCA DO-160D

[1] Display compatibility for Canadian WX support varies by unit. See display product configuration for details.
[2] GPS 400W, GNC 420W, GNS 430W, GPS 500W and GNS 530W units will only display products with Aviator Light Package of XM Subscription and Music.

GSR 56
GLOBAL VOICE, TEXT, WEATHER AND MORE

An enabling technology for the growing Garmin Connext family of datalink and wireless connectivity solutions in the cockpit, the GSR 56 Iridium datalink brings the benefits of on-demand satellite weather — as well as onboard text/voice communications, aircraft position tracking and more — to aircraft operators worldwide.

Available weather products include meteorological terminal aviation routine weather reports (METARs) that provide current temperature, dew point, precipitation, wind speed and more, as well as terminal aerodrome forecasts (TAFs) that show predicted weather for up to 30 hours in advance. Pilot reports, or PIREPS, allow pilots to share routine or urgent weather observations with each other. And throughout most of Europe, Canada, Australia and the U.S., Garmin Connext can also enable high-resolution radar imagery, which displays in full color on the G1000®, G1000® NXi, G500/G600, G500 TXi/G600 TXi and GTN™ 750/650 series of displays. Additional radar coverage areas are being added continually[1].

Moreover, for pilots and passengers who want to stay in touch from the far-reaching corners of the earth, Garmin Connext offers a full range of phone and messaging options. Your Garmin Connext datalink may be used to provide two-way text messaging via SMS connection with any compatible mobile phone or two-way text messaging device[2]. You can send and receive text messages while airborne to maintain constant contact with clients, ground support or your team at the home office. Likewise two-way voice calling options, integrated with the aircraft's audio/intercom system, enable you to easily make or receive calls through your headset – or through cabin handsets – while in flight. Efficient and cost-effective, Garmin datalink technology provides the messaging and voice solutions you need to do business in today's competitive, globally connected world.

[1] NOTE: Service levels, areas and rates are subject to change. Contact Garmin for the current service areas and rates.
[2] Coverage subject to network agreements with mobile service providers. All services and capabilities listed may not be available on all Garmin flight deck platforms. Check with Garmin for specific availability.

SPECIFICATIONS

Physical

Unit Size:	6.96"h x 2.08"w x 12.96"d Depth is with connectors
Mounting:	Mounting rack and hardware supplied
Unit Weight:	2.45 lb

Environmental

Temperature:	-15° C to +70° C (Operating); -55° C to +85° C (Storage)
Humidity:	95% non-condensing
Altitude range:	-1,500 ft to +55,000 ft
Power requirements:	14 or 28 VDC input; 16 watts maximum

Other Specifications

Satellite receiver frequency: 1616 to 1626.5 MHz
Downlink data rate: 2.4 kilobits per second
Software Certification: RTCA DO-178B Level E
Environmental Certification: RTCA DO-160E

ADS-B "OUT" HAS NEVER BEEN SO SIMPLE

The Garmin GDL® 82 is the easy, affordable ADS-B "Out" solution you've been waiting for. Now you can meet minimum FAA requirements with your current transponder and this small, lightweight, nonintrusive design that installs quickly into your airplane with only minimal modifications.

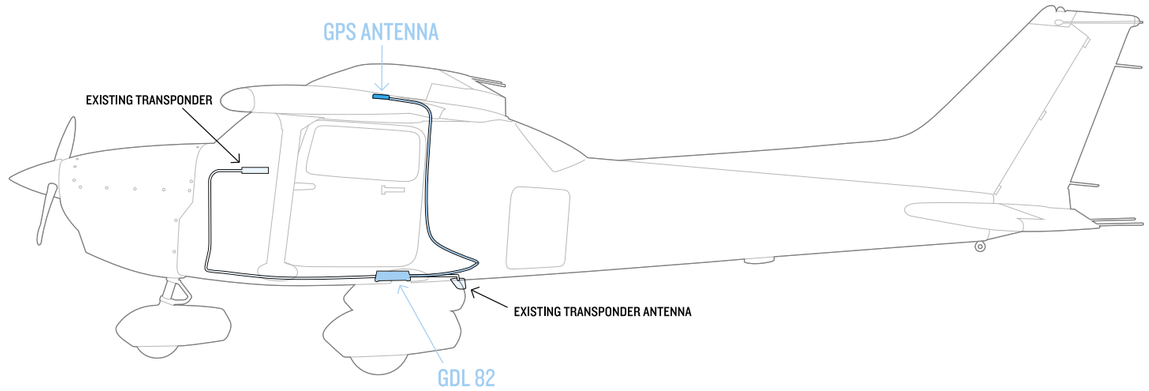
Once installed, the GDL 82 provides a WAAS-enabled position source that provides your precise location to air traffic control and other ADS-B "In" equipped airplanes in your vicinity using the universal access transceiver frequency. And with integrated patented AutoSquawk technology, it syncs its squawk code to your transponder, so there's no second code to enter, which reduces your workload, and no additional remote control to install in you panel. That means it meets the toughest requirements of all: your budget and your needs. And you've never had a smarter ADS-B "Out" solution. Completely installed, the GDL 82 is a low-cost way to meet ADS-B requirements for aircraft flying below 18,000 ft. The GDL 82 is ready to install in hundreds of fixed-wing aircraft models using an FAA-approved STC and memorandum addressing ADS-B installation, and installation is easy: The GDL 82 fits inline between your existing transponder and transponder antenna. And if you don't already have a GPS antenna installed, one is included for installation.

From there the GDL 82 is the perfect complement to Garmin GDL® 52 series portable ADS-B "In" receivers, without replacing your transponder or adding another transponder antenna. And with ADS-B "Out," the FAA provides traffic to your aircraft from ADS-B Ground stations, providing you the most comprehensive display of ADS-B traffic available. In addition, it offers an optional anonymous mode, which masks your aircraft ID from ADS-B "In" equipment when your aircraft is squawking VFR (1200).

With the GDL 82, you can fly confidently — to 2020 and beyond.

SPECIFICATIONS

Unit Size:	3.39"W x 1.48"H x 9.22"D (4.44 x 3.8 x 23.42 cm) including connectors
Weight:	1 lb 4 oz (0.57 kg) with WAAS GPS
Temperature:	-45°C to +70°C
Operating Altitude:	To 55,000 feet
Power Input:	14 or 28 VDC (8 W max.)
Transmitter Output:	46 dBm (40 W)
Environmental Compliance:	DO-160G
Software Compliance:	(TSO Approved) DO-178 Level D and Level B
Hardware Compliance:	(TSO Approved) DO-254 Level C
TSO Compliance:	(Approved) TSO-C145d (B2), TSO-C154c (B1S)



CAUTION: FLASHING BEACON IN CLOUDS
MAY CAUSE VISUAL DISORIENTATION

GARMIN

GPS | AP YD | ALT 5000

AVIONICS MASTER

PITOT HEAT

GARMIN

COM 1 125.800 CENTER | STBY 127.100 APPROACH | XPDR 4532 ALT | IDENT | WPT ATASY | BRG 340° | DIST 19.0 | ETE 08:02 | COM 2 121.200 KPWT AWOS | STBY 123.050 KPWT UNICOM | Full

AP YD | GPS | ALT 5000FT

TAS 140KT

HDG 340°

CRS 340°

29.92IN

GPS ATASY

Heading Altitude

TMR 00:00 OAT 81°F LCL 4:09:07pm

KHQM HOQUIAM

KCLS CHEHALIS CENTRALIA

KAST ASTORIA REGL

KSPB SCAPPOOSE INDUSTRIAL

SNAG ISLAND

LONG ISLAND

Map | Map Cht Wpt

MENU

GARMIN

WPT ATASY | BRG 340° | DIST 19.0 | ETE 08:02

MAN IN 28.2 | RPM 2450 | OIL PSI 71 | OIL °F 195

Main | Fuel | Electrical | Fuel Calc

Temperature

CHT 306 316 324 312

1625 1620 1575 1600 EGT

Total Hours 1819.8

FUEL PUMP | NAV LTS | PITOT HT | STROBE | FLASH BCN

ON / OFF

PARK BRAKE

Integration of traffic, terrain and obstacle alerting on a Garmin moving-map display gives pilots a comprehensive picture of potential flight path conflicts.

INTEGRATED DATALINK SOLUTION TO ADS-B COMPLIANCE

Garmin has developed the GDL 88® and GDL® 84 series of datalinks to help aircraft meet ADS-B requirements as easily and affordably as possible in a wide range of aircraft. Not only can these devices be used to satisfy the FAA's regulatory criteria for ADS-B "Out" transmission capability — both offer an optional built-in WAAS GPS receiver — but they also provide the ADS-B "In" dual link. That enables you to view, on a compatible cockpit display (GDL 88 only) or on a BLUETOOTH® linked iPad®, other Flight Stream enabled tablet/mobile apps or Garmin portables[1] (GDL 88 and GDL 84), the same dynamic traffic data that ATC ground controllers are monitoring on their scopes.

That means, in addition to audible target alerts ("Traffic. Two o'clock. High. Two miles."), you can see the latest in ADS-B traffic awareness. Our patent-pending TargetTrend™ relative motion tracking technology, for example, offers a faster, more intuitive way of judging aircraft trajectories and closure rates in relation to your aircraft's flight path. Likewise, within the airport environment, the geo-referenced TerminalTraffic™ feature lets you monitor ADS-B equipped aircraft and ground vehicles as they move on the taxiways and runways.

Plus, our patented AutoSquawk technology allows these datalinks to wirelessly interface with a wide range of GA transponders to automatically synchronize squawk code and ident. Thus, there's no need for duplicate code entries or additional cockpit controls. And there's no extra installation cost associated with a duplicate remote control entry.

The datalinks' support for ADS-B "In" also enables use of the FAA's free uplink of aviation weather reports, graphical NEXRAD imagery, and various other flight information services. The weather content available on this subscription-free "FIS-B" link (Flight Information Service – Broadcast) is comparable to the basic subscription services offered by leading commercial satellite weather providers. Which means there's a real economic advantage to be gained with the Garmin GDL 88 and GDL 84 series as solutions to ADS-B compliance in your aircraft.

[1]Capabilities such as GPS, attitude, weather, traffic and flight plan transfer, SiriusXM® weather and audio control are limited to the version of Flight Stream, the avionics installed in the aircraft as well as portable device. Compatibilities continue to grow with more apps and Garmin portables. Check the Flight Stream 510/210/110 page's 'Supported Devices' tab for the latest feature and compatibility information.

GDL 88 SPECIFICATIONS

Unit Size:	1.75"W x 6.17"H x 7.12"D (4.44 x 15.67 x 18.08 cm) Includes mounting rack and connectors
Weight:	GDL 88, 3.75 lb (1.70 kg); GDL 88 Diversity, 3.87 lb (1.76 kg); GDL 88 with WAAAS GPS, 4.13 lb (1.87 kg); GDL 88 Diversity with WAAS GPS, 4.25 lb (1.93 kg). Includes mounting rack and connectors
Temperature:	-45°C to +70°C
Operating Altitude:	To 55,000 feet
Power Input:	14 or 28 VDC 20 watts max.
Cooling Input:	Integrated
Environmental Compliance:	DO-160F
Software Compliance:	DO-178 Level C and Level B
Hardware Compliance:	DO-254 Level C
TSO Compliance:	GDL 88: TSO-C145c (B2), TSO-C154c (A1S/A1H), TSO-157A, TSO-C166b (A1/A1S), TSO-C195a (C1,C2,C3,C4)

GDL 84 SPECIFICATIONS

Unit Size:	1.75" w x 6.17" h x 7.12" d (4.44 x 15.67 x 18.08 cm) Includes mounting rack and connectors
Weight:	GDL 84, 3.75 lb (1.70 kg); GDL 84 with WAAAS GPS, 4.13 lb (1.87 kg). Includes mounting rack and connectors
Temperature:	-55°C to +70°C
Operating Altitude:	To 55,000 ft
Power Input:	14 or 28 VDC 20 watts max
Transmitter Output:	4 dBm (2.5 mW)
Cooling Input:	Integrated
Environmental Compliance:	DO-160F
Software Compliance:	(TSO Approved) DO-178 Level D and Level B
Hardware Compliance:	(TSO Approved) DO-254 Level C
TSO Compliance:	(Approved) GDL 84: TSO-C145c (B2), TSO-C154c (A1S/A1H), TSO-C157A, TSO-C166b (A1/A1S), TSO-C195a (C1,C2,C3)

COCKPIT EFFICIENCY GOES OFF THE CHARTS

A valuable feature of the Garmin G500/G600, G500 TXi/G600 TXi, GTN™ 750 and other compatible MFD screens is the ability to display approach plates and airport surface diagrams. Affordable Garmin FliteCharts®, which feature electronic versions of Aeronautical Information Services, NAV CANADA and EUROCONTROL terminal procedures charts, come standard with many Garmin navigators. In addition, Garmin SafeTaxi® airport diagrams are included to help pilots navigate hundreds of U.S., Canadian, Brazilian and European airports with confidence — by clearly depicting their aircraft's exact location on the field. As an alternative, you can select optional ChartView™ instrument approach plates and airport surface charts (Jeppesen® JeppView, subscription required). Both Garmin FliteCharts and ChartView™ have the ability to overlay a geo-referenced aircraft symbol on the electronic approach chart, providing a visual crosscheck of your progress inbound.

With the Garmin G500 TXi, G600 TXi and GTN 750 series navigation displays, FliteCharts and ChartView take geo-referencing even further — enabling a graphical view of your approach plate to be overlaid on the MFD moving map for integrated guidance cues throughout the procedure. Based on the active flight plan, each compatible Garmin MFD automatically loads the approach plates for the destination airport, allowing the pilot to quickly select the ATC-assigned approach procedure. ChartView can also display the destination airport's surface diagram — a real help at unfamiliar airports. In addition to the airport and approach charts, standard instrument arrival and departure charts (STARs or DPs) are also incorporated. ChartView functions and updates for the G600/G500, G500 TXi/G600 TXi and GTN 750 are available through Jeppesen's JeppView subscription service.

KEEP YOUR DATA CURRENT WITH EASY ONLINE UPDATES

What could be easier? Computer geniuses and net novices alike will appreciate online database updates. Whether you opt for an annual subscription or individual updates, Garmin offers the system resources you need — to ensure the latest and best in navigation from your GPS. And it all comes to you with the speed and convenience of the internet. Check it out at fly.garmin.com.

Many of your Garmin panel-mounted avionics come with extensive navigation databases that serve as the mainstay of their moving map capabilities. In addition, other databases found on select Garmin products include Garmin FliteCharts® (electronic terminal procedures charts), Garmin SafeTaxi® (airport taxiway diagrams), VFR sectional/IFR enroute charts, terrain, towers/obstacles and more.

Over time, as information changes, your databases will require updating.

Fortunately, Garmin makes the process easy — by offering updates online — as well as wirelessly for select products — via our website: flyGarmin.com.

To make updating even more affordable, we're offering bundled packages for your entire panel at a cost-effective price. A Garmin OnePak offers every database for your Garmin certified panel-mount avionics in your cockpit — including GTN™ 650/750 series, G500/G600 and G500 TXi/G600 TXi and even Garmin GNS 430W/530W navigators — plus all databases for one qualified Garmin portable aviation device registered to your flyGarmin.com account and a one-year Garmin Pilot™ Premium upgrade on Apple® or Android™ mobile devices if you're already a Garmin Pilot Standard subscriber.

Or, if you prefer Jeppesen products, we've teamed up to create PilotPak™. With PilotPak, all the databases within a selected package are provided for a single annual price for Jeppesen JeppView™ and/or Garmin FliteCharts®. Lite, Standard, and Standard + Garmin FliteCharts packages can be purchased and downloaded at flygarmin.com, and Lite, Standard and Standard + Jeppesen JeppView can be purchased and downloaded from Jeppesen's website, www.Jeppesen.com/GTN.

Once you've selected your database package, with Database Concierge, you'll streamline the update process for updating your GTN navigator via the Flight Stream 510 WiFi connection. At home, you can select individual databases on the Garmin Pilot app, download them, and store them to your mobile device for later.

When Flight Stream establishes a connection in the airplane, it transfers your up-to-date databases directly to the GTN in minutes, where they'll wait in standby until their effective date. If you have a second GTN, G500/G600 or G500 TXi/G600 TXi glass flight display, you'll enjoy additional benefits from database synchronization. The GTN acts like a computer server to automatically transfer and synchronize your databases to the flight display and navigator, behind the scenes. In the meantime, you can view and use a departure, approach or arrival chart immediately – even if the databases are still synchronizing.

SPECIFICATIONS

Coverage:	Varies by product; navigation database includes Garmin Navigation Database or Jeppesen NavData
Airports:	Identifier, city/state, country, facility name, lat/long, elevation, fuel service, control, approach information
VORs:	Identifier, city/state, country, facility name, lat/long, frequency, co-located DME/TACAN, magnetic variation, weather broadcast
NDBs:	Identifier, city/state, country, facility name, lat/long, frequency, weather broadcast
Intersections:	Identifier, country, lat/long, nearest VOR
Runways:	Designation, length, width, surface, lighting, pilot-controlled lighting freq.
FSS:	Identifier, reference VOR, freq. usage
Frequencies:	Approach, arrival, control area, departure, Class B, Class C, TMA, TRSA with sector, altitude and text usage info; also, ASOS, ATIS, AWOS, center, clearance delivery, ground, pre-taxi, tower, UNICOM, localizer and ILS
ARTCC:	Identifier, freq. usage
MSA:	Minimum safe altitude along and in proximity to active flight plan
Approaches:	Non-precision and precision approaches from FAF to MAP
Airspaces:	Class B and C with sectors, international CTA and TMA with sectors; all special-use airspace, including MOAs, prohibited and restricted areas with controlling agency and airport

	GARMIN NAVIGATION DATA	GARMIN OBSTACLES	GARMIN SAFETAXI	GARMIN TERRAIN	GARMIN AIRPORT DIRECTORY	GARMIN FLITECHARTS	JEPPESEN NAVIGATION DATA	JEPPESEN JEPPVIEW
ONEPAK								
Standard	X	X	X	X	X			
Standard w/ Garmin FliteCharts	X	X	X	X	X	X		
PILOTPAKS								
Lite		X	X	X	X	X		
Standard		X	X	X	X		X	
Standard w/ Garmin FliteCharts		X	X	X	X	X	X	
Standard w/ Jeppesen JeppView		X	X	X	X		X	X

Wi-Fi® is a registered trademark of the Wi-Fi Alliance.

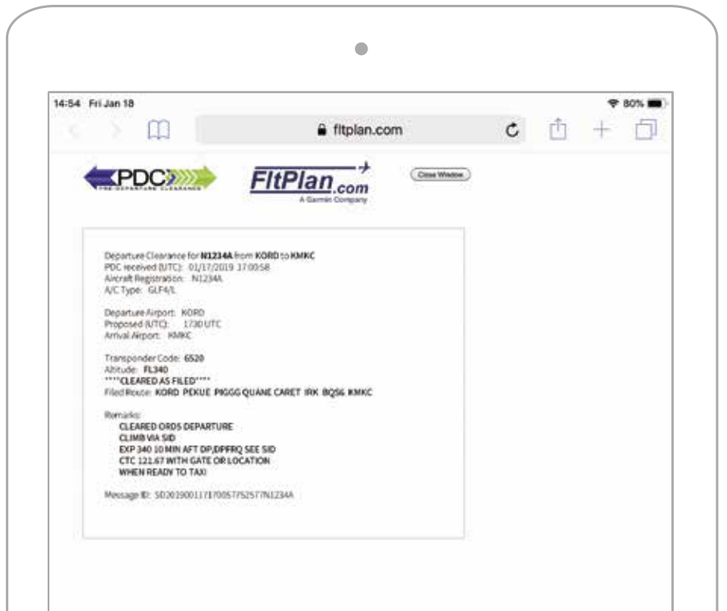
TRIP SUPPORT WITH FLTPLAN.COM

With aviation support services from the industry-leading FltPlan.com team at Garmin, pilots and fleet owners can now streamline their operations with a full suite of web-based logistics solutions. These offerings range from flight planning, filing and predeparture clearances to advanced trip support, flight tracking, airport and FBO information, weather briefings, navigation logs, eAPIS and international handling, and more.

As one of the largest and most trusted electronic flight planning services in the U.S., FltPlan.com files more flight plans per year than any other provider. The FltPlan Go electronic flight bag app is seamlessly integrated and wirelessly integrates with Garmin avionics.

The Garmin Pilot™ app provides additional integration and wireless connectivity. By creating a free FltPlan.com account and syncing it with Garmin Pilot, users can easily create flight plans and routings — then wirelessly transfer the data from their mobile device to their avionics, saving valuable time prior to any flight. To save even more time between filing and takeoff, pilots can also take advantage of FltPlan's FAA-approved pre-departure clearances, which allow them to skip clearance delivery entirely — and receive their flight plan approval wirelessly, approximately 20-30 minutes prior to the filed departure time.

Many countries require advanced notification for entry into their country, typically referred to as eAPIS, and each country has their own system and requirements for notification. The FltPlan team has years of experience handling these complex international trip logistics with the U.S. Customs and Border Protections and similar agencies in Canada, Mexico and Caribbean countries to streamline international travel. Better yet, this system integrates conveniently with FltPlan.com to simplify manifest submissions. For more comprehensive support, let our experts in international flight planning manage your operations from takeoff to touchdown for a single, predictable price without any hidden fees. The FltPlan team has decades of experience working logistics in multiple countries, so we know what to expect to help mitigate operational risks, save time and provide peace of mind during your travels. Our expertise can help you operate confidently while flying between the U.S., Mexico, Central America, and the Caribbean. The service accounts for airspace fees, overflight and landing permits, optimized flight planning, ground handling and much more. International handling integrates seamlessly with FltPlan.com; simply request a quote after adding the proposed flight plan with an eligible destination to get the process started.



LOOKING AHEAD, REACHING BEYOND

When you fly with Garmin avionics, you never fly alone.

We're committed to making sure you have a terrific experience with any and every Garmin product you select — whether it's a single component or a complete cockpit retrofit.

That's why you can count on us not just to support you, but also to embrace you: with comprehensive service and technical expertise in virtually every corner of the globe.

To help you get the most from your avionics, we offer a variety of product training and familiarization programs — everything from hands-on, face-to-face road shows and user classes to YouTube videos and webinars that you can easily access online. We make a real effort to provide the answers and the information you need to feel totally confident with the avionics you're flying. Because, we know that it's the total support we put behind every product in our lineup — and every pilot using our equipment — that turns first-time Garmin buyers into loyal, long-term Garmin customers.

Likewise, we back every product in our avionics lineup with a rock-solid Garmin warranty. Then we make that warranty mean even more by attracting and hiring some of the industry's brightest technical minds to serve in our factory support positions. Their troubleshooting expertise is available by phone, fax or online — whenever you have a question or service issue that demands the right answer, right now!

These experts work as a team with hundreds of Garmin Authorized Service Centers around the world. Individually, they are the top shops in the business. Collectively, they form the most professional, most comprehensive avionics service network available to support you anywhere you fly.

And we never stop looking for ways to make our team even better.

To see for yourself, we invite you to call or visit your nearby Garmin dealer. You'll be doing your future a favor.

GARMIN

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