



GTX 3X5 Series Transponder

Pilot's Guide



DRAFT COPY

© 2015 Garmin Ltd. or its subsidiaries. All rights reserved.

This manual reflects the operation of GTX 3X5 Series Transponders.

Garmin International, Inc., 1200 East 151st Street, Olathe, KS 66062, U.S.A.

Tel: 913/397.8200

Fax: 913/397.8282

Garmin AT, Inc., 2345 Turner Road SE, Salem, OR 97302, U.S.A.

Tel: 503/391.3411

Fax 503/364.2138

Garmin (Europe) Ltd., Liberty House, Bulls Copse Road, Hounslow Business Park, Southampton, SO40 9LR, U.K.

Tel. +44 (0) 37 0850 1243

Fax +44 (0) 23 8052 4004

Garmin Singapore Pte. Ltd., 46 East Coast Road, #05-06 Eastgate, Singapore 428766

Tel : (65) 63480378

Fax : (65) 63480278

At Garmin, we value your opinion. For comments about this guide, please e-mail:

Techpubs.Salem@Garmin.com

www.garmin.com

Except as expressly provided herein, no part of this manual may be reproduced, copied, transmitted, disseminated, downloaded or stored in any storage medium, for any purpose without the express written permission of Garmin. Garmin hereby grants permission to download a single copy of this manual and of any revision to this manual onto a hard drive or other electronic storage medium to be viewed for personal use, provided that such electronic or printed copy of this manual or revision must contain the complete text of this copyright notice and provided further that any unauthorized commercial distribution of this manual or any revision hereto is strictly prohibited.

This part shall comply with Garmin Banned and Restricted Substances document, 001-00211-00.

Garmin®, FliteCharts®, and SafeTaxi® are registered trademarks of Garmin Ltd. or its subsidiaries. Garmin SVT™ and Smart Airspace™ are trademarks of Garmin Ltd. or its subsidiaries. These trademarks may not be used without the express permission of Garmin.

NavData® is a registered trademark of Jeppesen, Inc.; StormScope® and SkyWatch® are registered trademarks of L-3 Communications; Sirius and XM are trademarks of SiriusXM Radio Inc.; Iridium® is a registered trademark of Iridium Communications Inc.; United States radar data provided by NOAA; European radar data collected and provided by Météo France. SD and SDHC Logos are trademarks of SD-3C, LLC; the *Bluetooth*® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Garmin is under license.



December 2015

Printed in the U.S.A.

DRAFT COPY

LIMITED WARRANTY

All Garmin avionics products are warranted to be free from defects in materials or workmanship for: two years from the date of purchase for new Remote-Mount and Panel-Mount products; one year from the date of purchase for new portable products and any purchased newly-overhauled products; six months for newly-overhauled products exchanged through a Garmin Authorized Service Center; and 90 days for factory repaired or newly-overhauled products exchanged at Garmin in lieu of repair. Within the applicable period, Garmin will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation cost. This warranty does not apply to: (i) cosmetic damage, such as scratches, nicks and dents; (ii) consumable parts, such as batteries, unless product damage has occurred due to a defect in materials or workmanship; (iii) damage caused by accident, abuse, misuse, water, flood, fire, or other acts of nature or external causes; (iv) damage caused by service performed by anyone who is not an authorized service provider of Garmin; or (v) damage to a product that has been modified or altered without the written permission of Garmin. In addition, Garmin reserves the right to refuse warranty claims against products or services that are obtained and/or used in contravention of the laws of any country.

THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE.

IN NO EVENT SHALL GARMIN BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE OR INABILITY TO USE THE PRODUCT OR FROM DEFECTS IN THE PRODUCT. SOME STATES DO NOT ALLOW THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

Garmin retains the exclusive right to repair or replace (with a new or newly-overhauled replacement product) the product or software or offer a full refund of the purchase price at its sole discretion. SUCH REMEDY SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.

Online Auction Purchases: Products purchased through online auctions are not eligible for warranty coverage. Online auction confirmations are not accepted for warranty verification. To obtain warranty service, an original or copy of the sales receipt from the original retailer is required. Garmin will not replace missing components from any package purchased through an online auction.

International Purchases: A separate warranty may be provided by international distributors for devices purchased outside the United States depending on the country. If applicable, this warranty is provided by the local in-country distributor and this distributor provides local service for your device. Distributor warranties are only valid in the area of intended distribution. Devices purchased in the United States or Canada must be returned to the Garmin service center in the United Kingdom, the United States, Canada, or Taiwan for service.

To obtain warranty service, contact your local Garmin Authorized Service Center. For assistance in locating a Service Center near you, visit the Garmin web site at <http://www.garmin.com> or contact Garmin Customer Service at 866-739-5687.



WARNING: Do not use data link weather information for maneuvering in, near, or around areas of hazardous weather. Information contained within data link weather products may not accurately depict current weather conditions.



WARNING: Do not use the indicated data link weather product age to determine the age of the weather information shown by the data link weather product. Due to time delays inherent in gathering and processing weather data for data link transmission, the weather information shown by the data link weather product may be significantly older than the indicated weather product age.



WARNING: To reduce the risk of unsafe operation, carefully review and understand all aspects of the GTX 3X5 Pilot's Guide. Thoroughly practice basic operation prior to actual use.



WARNING: The display surface is coated with a special anti-reflective coating that is very sensitive to skin oils, waxes, and abrasive cleaners. It is very important to clean the lens using an eyeglass lens cleaner that is specified as safe for anti-reflective coatings with a clean, lint-free cloth.



CAUTION: The Garmin GTX 3X5 should be turned off before starting or shutting down aircraft engine(s).



NOTE: This product does not contain any user-serviceable parts. Repairs should only be made by an authorized Garmin service center. Unauthorized repairs or modifications could result in permanent damage to the equipment, and void your warranty and your authority to operate this device under FCC and FAA regulations.



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



NOTE: The coverage expected from the GTX 3X5 is limited to line of sight. Low altitude or aircraft antenna shielding by the aircraft itself may result in reduced range. Range can be improved by climbing to a higher altitude.



NOTE: *It is the responsibility of the GTX 3X5 owner to obtain proper licensing before using the transponder.*

AC 90-100A Statement of Compliance:
The Garmin navigational unit meets the
performance and functional requirements
of AC 90-100A.

1	GTX 3X5 Series Transponders	1-1
1.1	GTX 335	1-1
1.2	GTX 345	1-1
1.3	References	1-1
1.4	Acronyms and Abbreviations	1-2
2	GTX 3X5 Controls	2-1
2.1	Power Control Keys	2-1
2.2	Mode Selection Keys	2-1
2.3	Squawk Code Keys	2-2
2.4	Function Keys	2-2
3	Features and Settings	3-1
3.1	Transponder (XPDR)	3-1
3.2	TIMERS (TMR)	3-2
3.3	ALTITUDE (ALT)	3-3
3.4	SYSTEM (SYS)	3-4

This page intentionally left blank.

Figure 2-1 Squawk Code Entry Field 2-2

This page intentionally left blank.

1 GTX 3X5 SERIES TRANSPONDERS

The GTX 3X5 Series Transponders is a family of panel mount and remote transponders.

- GTX 345 Mode S transponder with built-in ADS-B UAT and 1090 MHz receivers
- GTX 335 Mode S transponder with ADS-B Out functionality

1.1 GTX 335

The GTX 335 is a TSO compliant mode S transponder with ADS-B Out Extended Squitter functionality.

Features:

- Traffic Information Service (TIS) traffic display output and aural alerting
- Altitude deviation alerting
- Timers: count up, count down, flight, trip
- Static (Outside) air temperature display
- Density altitude display
- Internal GPS (Optional)

1.2 GTX 345

The GTX 345 is a mode S transponder with TSO compliant ADS-B Out and ADS-B In functionality. The GTX 345 is a TSO compliant mode S transponder with ADS-B Out and ADS-B In functionality.

Features:

- Dual-band ADS-B traffic display output and aural alerting
- Helicopter specific Airport Area Alerting and On-Scene Mode
- Integration with TCAD/TAS/TCAS I traffic systems
- FIS-B weather and flight information display output
- Bluetooth portable device interface to traffic, weather, and AHRS
- Altitude deviation alerting
- Timers: count up, count down, flight, trip
- Static (Outside) air temperature display
- Density altitude display
- Internal GPS (Optional)

1.3 References

ADS-B Academy

1.4 Acronyms and Abbreviations

AAD	Automatic Airborne Determination
ADSB	Automatic Dependant Surveillance Broadcast
ATCRBS	Air Traffic Control Radar Beacon System
ASR	Automatic Speech Recognition
PIREP	Pilot Report
SSR	Special Position Identification
SPI	Special Position Identification
TCAS	Traffic Collision Avoidance System

2 GTX 3X5 CONTROLS

The GTX 3X5 series transponders share common pilot interface.



2.1 Power Control Keys



NOTE

Regardless of the operating mode, the GTX 3X5 will not respond to Air Traffic Control Radar Beacon System (ATCRBS) or Mode S All-Call interrogations if Automatic Airborne Determination (AAD) senses the aircraft is on the ground.



ON — Powers on into ON mode.

ALT — Powers on into ALT mode.

OFF — Powers off.

SBY — Powers on into standby mode.

2.2 Mode Selection Keys

The transponder becomes an active part of the ATCRBS when either the **ON** or **ALT** function is selected. The transponder responds to interrogations from TCAS equipped aircraft.

SBY — Selects the standby mode. The transponder will not reply to any interrogations or transmit ADS-B Out.

ON — Selects the On mode. The transponder replies to interrogations. The Reply () symbol indicates the transponder is actively responding.

The GTX 3X5 transmits ADS-B Out data. Replies and ADS-B Out data do not include altitude information.

ALT — Alt mode takes into account the air/ground state. The transponder

replies to identification and altitude interrogations as indicated by the Reply symbol ().

The GTX 3X5 transmits ADS-B Out data. Replies to altitude interrogations and ADS-B Out data include the aircraft's standard pressure altitude.

2.3 Squawk Code Keys



There are eight squawk code entry keys (**0 – 7**) that provide access to all ATCRBS codes. Pushing one of these keys begins the code selection sequence. Digits that are not yet entered appear as underscored blanks.

The new code is activated when the fourth digit is entered. Pressing the **CLR** key moves the cursor back to the previous digit. Holding the **CLR** key moves the cursor back to the first digit. Pressing the **CLR** key when the cursor is on the first digit of the code, or pressing the **CRSR** key during code entry, removes the cursor and cancels code entry.



Figure 2-1 Squawk Code Entry Field

2.4 Function Keys

IDENT — The IDENT key activates the special position identification (SPI) pulse for 18 seconds, which distinguishes your transponder from others on the air traffic controller's screen. The word "IDENT" will appear in the upper left corner of the display during this time.

VFR — VFR sets the transponder code to the preprogrammed VFR code, which is selected during installation configuration (this is set to 1200 at the factory). Pressing the VFR key again restores the previous identification code.

FUNC — Cycles through top level function groups shown on the right side of the display. Menu groups include:

- Transponder (XPDR)
- Timers (TMR)
- Altitude (ALT)
- System (SYS)

ENT — Acknowledges selection of menu items and pilot data entry fields.

CRSR — Activates the cursor to select items in menus and on pages.

CLR — Clears selected entry and exit menus.

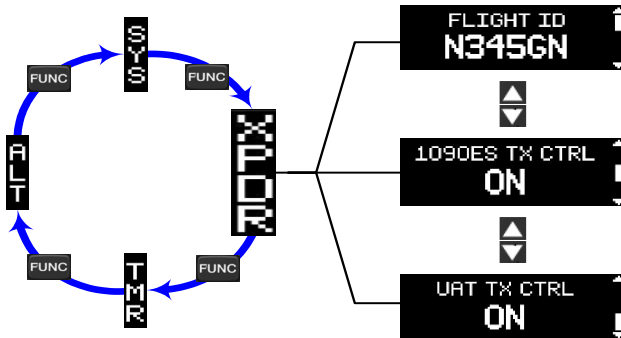
8/UP — Enters the number eight in the Flight ID or Count Down timer. Navigates up in menus and within top level function groups.

9/DOWN — Enters the number nine in the Flight ID or Count Down timer. Navigates down in menus and within top level function groups.

This page intentionally left blank.

3 FEATURES AND SETTINGS

3.1 Transponder (XPDR)



FLIGHT ID



This page displays the active Flight ID. Access to pilot entry of the Flight ID is through this page when allowed by the system.

1090ES TX CTRL



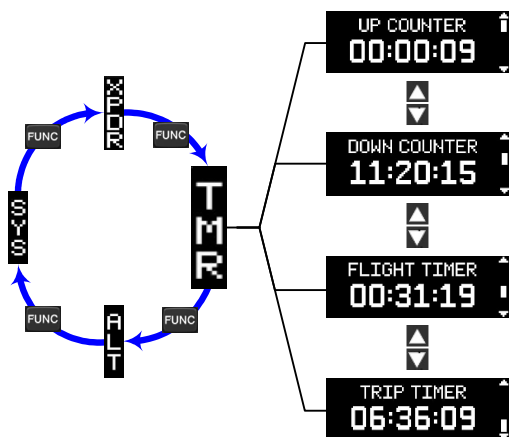
This page displays the current ON/OFF state of the 1090ES ADS-B Out function. Access to pilot control of the 1090ES ADS-B Out function is through this page when allowed by system configuration.

UAT TX CTRL



This page displays the current ON/OFF state of the UAT ADS-B Out function. Access to pilot control of the UAT ADS-B Out function is through this page when allowed by system configuration.

3.2 TIMERS (TMR)



UP COUNTER



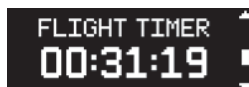
This page provides a stopwatch style counter, with start/stop/reset controls via the ENT and CLR keys.

DOWN COUNTER



This page provides a count down style timer, with a notification, when the timer expires and start/stop/set/reset controls via the ENT and CLR keys.

FLIGHT TIMER



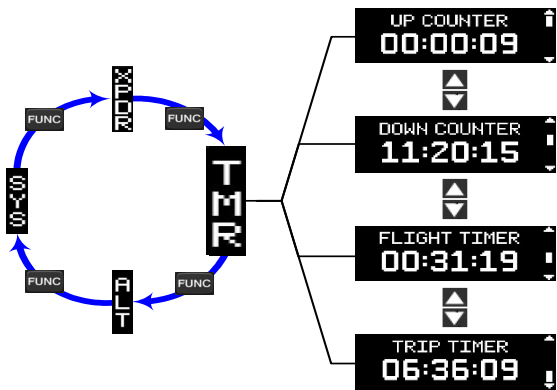
This page provides an airborne flight timer that starts and stops automatically with the GTX's automatic airborne determination. The timer measures the elapsed airborne time since the last on ground to airborne transition. Manual start/stop/reset controls are available via the ENT and CLR keys.

TRIP TIMER



This page provides an airborne flight timer that starts and stops automatically with the GTX's automatic airborne determination. The timer measures the elapsed airborne time since the last manual reset of the timer. Manual start/stop/reset controls are available via ENT and CLR keys.

3.3 ALTITUDE (ALT)



PRESSURE ALT



This page displays the current pressure altitude.

ALT MONITOR



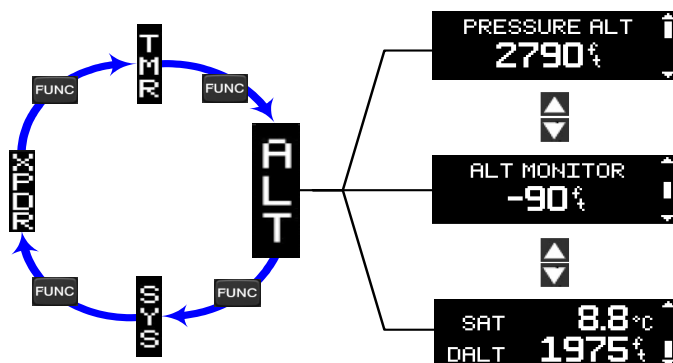
This page displays the current altitude deviation from the desired altitude to maintain. The desired altitude is automatically set when the altitude monitor is turned on. ON/OFF controls are available via the CRSR and ENT keys.

SAT/DALT



This page displays the current static air temperature (SAT) and density altitude (DALT), when available.

3.4 SYSTEM (SYS)



BACKLIGHT 50
OFFSET 0

BACKLIGHT – This page displays the current backlight level and backlight level offset. The offset is pilot modifiable via the CRSR and UP/DOWN keys.

CONTRAST 65
OFFSET 15

CONTRAST – This page displays the current contrast level and contrast level offset. The offset is pilot modifiable via the CRSR and UP/DOWN keys.

MESSAGES
1

MESSAGES – This page displays the number of active system messages. Viewing active system messages is available via CRSR key menu selection.

BLUETOOTH
ON

BLUETOOTH – This page displays the status of the GTX 345 Bluetooth function. The Bluetooth function is automatically placed into pairing mode when this page is displayed.

INTERNAL GPS
3D DIFF

INTERNAL GPS – This page displays the status of the internal GPS. GPS position fix details are available via CRSR key menu selection.