LXNAVIGATION

iris EFIS

User manual

iris EFIS
[57 & 80]

Device manual

- LX navigation -

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LXNAVIGATION

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Document information

0.1 Abstract

This document represents the user manual for the LX iris EFIS. The installation manual, dataport and additional info can be found on **downloads.lxnavigation.com/device/iris-efis**.

0.2 List of applicable products

Device	Part number	HW Version
iris EFIS 57	LX02000010	V1.0 - V1.7
iris EFIS Pro 57	LX02000020	V1.0 - V1.7
iris EFIS 80	LX02000040	V1.0 - V1.7
iris EFIS Pro 80	LX02000050	V1.0 - V1.7

0.3 Revision history

Document name	Document revision	SW version	Build	Date	Revised by	Approved by	Notes
LX_HUM	R1	1.0		13.5.2020	L.A.	N.S.	Manual written
	R2	1.0	389	13.2.2023	A.S.	N.S.	Added traffic page
	R3	2.3	1934	15.6.2025	B.D.	N.S.	Updated to SW version 2.3

Contents

Important notices

1.1 Using this manual

This manual has been created in LaTeX, giving us the possibility of linking up everything we find linkable. You will find references to other parts of the manual, to other manuals, webpages, etc. throughout the manual.

Linkable content will be **bold and underlined**, i.e. you can find additional info on how to take care of your iris EFIS in the **Taking care of your iris EFIS** section of this manual (click on the underlined text).

NOTE
The most recent version of this manual will always be available at
https://downloads.lxnavigation.com/device/iris-efis

1.2 Device operating limits

This instrument may be used under VFR (Visual flight rules) only! Any navigational information is provided for reference only. The pilot takes all responsibility and risk associated with the use of this device.

Have a nice flight.

1.3 Limited warranty

This device is warranted to be free from defects in materials or workmanship for two years from the date of purchase. Within this period, LX navigation will, at its sole discretion, repair or replace any components that fail in normal use. Such repairs or replacements will be made at no charge to the customer for parts and labour, the customer shall be responsible for any transportation cost. This warranty does not cover failures due to abuse, misuse, accident, or unauthorized alterations or repairs.

THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR 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 COUNTRY TO COUNTRY.

IN NO EVENT SHALL LX NAVIGATION BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE, OR INABILITY TO USE THIS PRODUCT OR FROM DEFECTS IN THE PRODUCT.

Some countries do not allow the exclusion of incidental or consequential damages, so the above limitations may not apply to you. LX navigation retains the exclusive right to repair or replace the unit or software, or to 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. To obtain warranty service, contact your local LX navigation dealer or contact LX navigation directly.

The manufacturer does not take the responsibility for possible mistakes or misprints in this text and gives no guarantee for accuracy of this manual. This manual has been written with the greatest care and we have done our best to avoid any mistakes but with all respect please check any doubtful statement and let us know. We would be very grateful and we thank you in advance for any comment.

1.4 Sunburned display

Damages to the device, especially the display part, are not covered by the warranty and will be considered as misuse of the device. To learn how to take care of your display and device in whole, check the **Taking care of your iris EFIS** section of this manual.

1.5 Disclaimer/EULA

Device versions and options

2.1 Device versions

Device is available in two different configurations:

- **iris EFIS** (Basic version)
- **iris EFIS pro** (Advanced version)

2.1.1 iris EFIS

Is the basic version with main - PFD page and Setup page. Pilot can upgrade the device to iris Efis Pro anytime.

2.1.2 iris EFIS Pro

Is the extended version with PFD page and Setup page and additional navigation pages - APT page (Airport navigation), RTE page (Route navigation), Traffic page, G-Force page, Info page, Logbook page and Airspace page.

2.1.3 Upgrade iris Efis to iris Efis Pro

For upgrading to Pro version, the license file can be bought on LX navigation webshop or through LX navigation representatives.

License file (EfisPro.lic) is generated for your specific device based on device serial number (often referred to as "SN").

License file should be copied to the root of manufacturer provided SD card, without changing it's name (EfisPro.lic). If the name is changed, iris Efis will not recoginze the file.

Pilot should go to Setup page, "System" section, select "Service" and select menu "Load license".

Once the file is successfully loaded, one should leave the Setup page. Additional pages and functions should appear.

2.2 Device size

Device is available in two different standard sizes:

- **57mm** (2,25inch)
- **80mm** (3,15inch)

Basic operation

3.1 Push-rotary knobs and buttons

3.1.1 Overview

Bezel overview of the device.

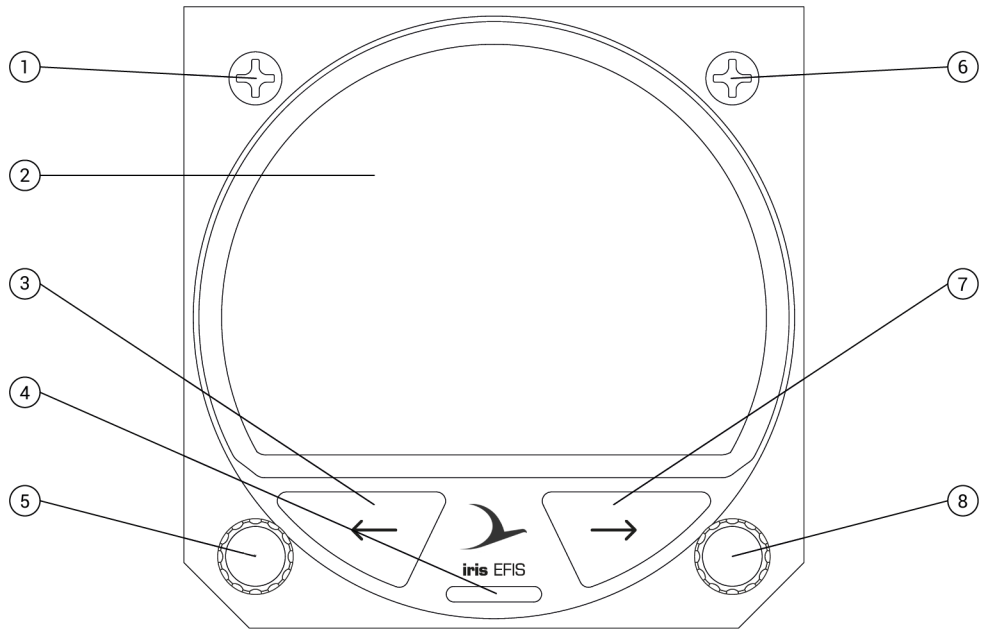

Figure 1. Device overview

- M4X6 black mounting screw *(1)*
- Display *(2)*
- Left-hand button *(3)*
- Micro SD card slot *(4)*
- Left-hand push-rotary knob *(5)*
- M4X6 black mounting screw *(6)*
- Right button *(7)*
- Right-hand push-rotary knob *(8)*

3.2 Switching the unit on

The unit turns on automatically as soon as power supply is connected.

3.3 Switching the unit off

The unit turns off automatically as soon as power supply is disconnected. Please note that the device will turn off only when it is not in flight mode. Read more about flight mode in the Battery section.

If for any reason the device doesn't turn off after disconnecting the power, it can always be turned off by pressing left-hand push-rotary knob for 15 seconds.

3.4 Alphanumeric inputs

When alphanumeric input is required, a scroll widget will appear on the left side of the display, displaying the available lettering and/or symbols.

Use the right push-rotary knob to scroll through the list and press the right push-rotary to confirm the symbol and continue typing the next symbol. Once finished, find the 'Enter' icon to confirm your input.

Figure 2. Keyboard for alphanumeric input

3.5 Software update procedure

To update your device, copy the SW version to the root of provided Micro SD card. Insert it into the slot on the front panel.

Use left or right button to move through pages. Go to setup page. In the section "System" go into "Service" menu. Use right-hand push-rotary knob to select "Software update".

Once the "Select update" is opened, select the version from the list.

3.6 File transfer

To transfer files to your device, copy the file(s) to the root of provided Micro SD card. Insert it into the slot on the front panel.

Use left or right button to move through pages. Go to setup page. In the section "System" go to "Transfer" menu. Use right-hand push-rotary knob to select "Turnpoints", "Airports", "Airspace", "Load route" or "Flarm NET".

Once the pilot selects which type of file to upload a new menu appears. Select "Load" to download the selected file from the list. This will load the file from the SD card to the device.

To activate the loaded file, go to "Select" and select the file from the list.

Learn more about file transfer in section Transfer.

User interface

4.1 Pages

To move through the pages, use left or right button, as described in the section 4.1.1. The movement though pages is circular, so it doesn't matter in which direction pilot moves.

4.1.1 Pages overview

The primary pages represent a row of pages in the graphical user interface, which allow the user to access different information screens and flight parameters.

The user will go through the following pages, in their respective order, if he swipes to the right via right button.

Page position	Page name	Short description
1	PFD page	Attitude indicator with Airspeed and Altitude tape
2	APT navigation page	Navigational page to a pilot selected airport
3	RTE navigation page	Navigational page to a pilot defined route
4	Traffic page	G-force page with minimal, maximal and actual G load
5	G-force page	G-force page with minimal, maximal and actual G load
6	GPS info page	Info page with GPS, time, date and battery status
7	Logbook page*	Pilots digital logbook with flight details and download
7	Statistics page*	Flight statistics page will appear in flight after take-off
8	Airspace page	Manage all active airspace
9	Setup page	All settings and setup can be done here

*Logbook page is displayed while device is not in flight mode. Once device is in flight mode, Statistics page will appear instead of Logbook.

PFD page

Figure 3. PFD page with all available widgets

- Roll scale zero *(1)*
- Roll pointer *(2)*
- Ground speed *(3)*
- Sky representation *(4)*
- Airspeed tape *(5)*
- Ground representation *(6)*
- Heading / track bug setting *(7)*
- 90 degree left turn *(8)*
- Heading / track bug *(9)*
- Standard turn indicator *(10)*
- Slip / skid indicator *(11)*
- Vertical speed indicator *(12)*
- Pitch scale *(13)*
- Horizon line *(14)*
- Altitude tape *(15)*
- Aircraft symbol *(16)*
- Barometric setting *(17)*
- 90 degree right turn *(18)*
- Current heading / track *(19)*

5.1 Attitude indicator

Figure 4. Attitude indicator on PFD page

5.1.1 Attitude and horizon line

Attitude is displayed as blue sky and brown ground. The border between the two is separated with a white line representing the horizon.

5.1.2 Attitude indicator

The Attitude Indicator displays the pitch (indicated by the yellow symbolic aircraft on the pitch scale), roll, and slip/skid information.

5.1.3 Pitch

The horizon line is part of the pitch scale.

Pilot can see following pitch scale markings:

- **0° pitch markings** Known also as "Horizon line"
- **2.5° pitch markings** Found at the interval between 0° and +-20°
- **5° pitch markings** Found at the interval of +-50°
- **10° pitch markings** Found at the interval between +-50° and +-90°

5.1.4 Roll and roll scale

The inverted white triangle indicates zero on the roll scale. Major tick marks at 30° and 60° and minor tick marks 10°, 20°, and 45° are shown to the left and right of the zero. Bank angle is indicated by the position of the yellow pointer on the roll scale.

5.2 Indicated airspeed tape

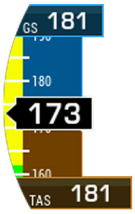

Figure 5. Indicated airspeed tape widget with Ground speed (GS) at the top, True airspeed (TAS) in the bottom and Airspeed indication in the middle.

Figure 6. "Show altitude" and "Show direction" are disabled, "Show airspeed" is enabled

True airspeed (TAS) below indicated airspeed tape is shown only when "Show direction" is disabled.

5.2.1 Overview

The indicated airspeed tape displays 30 km/h (30 kts / 30 mph) values at a time on a rolling number gauge using a moving tape. Numeric labels with white mark are shown at intervals of 10 km/h (10 kts / 10 mph). Minor airspeed marks (white lines) are shown at intervals of 5 km/h (5 kts / 5 mph). The current indicated airspeed is displayed in the black pointer box with a big value.

5.2.2 Red cross over Ground speed

If there is red cross over GS indication, GPS is not valid. There will be no GPS position, no time indication and no true track information.

Most common reasons for this issue are wrong antenna placement, external obstructions (testing inside the building) or damaged antenna cable.

Figure 7. No Ground speed (GS) means there is a problem with GPS

5.2.3 Disabling the indicated airspeed tape

In the setup page, go to "user" section, select "Display and Graphic" and select menu "PFD". Go to “Show airspeed”. Pilot can chose between “on” and “off”.

Figure 8. "Show airspeed", "Show altitude", "Show direction" options in setup page, Display and Graphic, PFD menu

Figure 9. "Show airspeed" and "Show altitude" are disabled and "Show direction" is set to "True Track"

5.3 Altitude tape

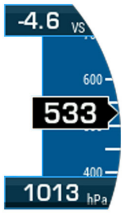

Figure 10. Altitude tape widget with BARO at the bottom, vertical speed indicator at the top and altitude indication in the middle

Figure 11. "Show airspeed" and "Show direction" are disabled, "Show altitude" is enabled

Altitude tape The altitude tape displays 1500 feet of barometric altitude values at a time on a rolling number gauge using a moving tape. Numeric labels and major altitude marks (white lines) are shown at intervals of 500 feet. Minor altitude marks (white lines) are shown at intervals of 250 feet. The current altitude is displayed in the black pointer box with a big value.

Disabling the altitude tape In the setup page, go to "user" section, select "Display and Graphic" and select menu "PFD". Go to “Show altitude”. Pilot can chose between “on” and “off”.

5.4 Barometric pressure setting (BARO)

The barometric pressure setting is displayed below the Altimeter and is marked with BARO. The pilot defined units for BARO can be selected in the setup page (setup – system section – units – Pressure);

- inches of mercury *(inhg)*
- hectopascals *(hPa)*
- millibars *(mbar)*

Selecting the altimeter barometric pressure When on the PFD page, turn the right-hand push-rotary knob Selection Knob to change the barometric pressure. Turn it clockwise to set higher barometric pressure or counter clockwise to set lower barometric pressure.

Figure 12. BARO settings indicator

5.5 Slip indicator

The **Iris EFIS** includes a built-in *slip indicator* to help the pilot maintain coordinated flight. It displays real-time lateral acceleration and assists in correct rudder usage during turns.

Display Modes

The slip indicator is shown in one of two visual styles, depending on the selected display configuration:

- **Ball at the bottom** of the attitude indicator (classic presentation)
- **Brick at the top** of the attitude indicator

Both styles provide the same flight information and respond identically to aircraft movement.

Figure 13. Slip indicator widget - brick

Figure 14. Slip indicator widget - ball

Function

The slip indicator shows whether the aircraft is:

- **Coordinated** — the ball or brick is **centered**.
- **Slipping** — the ball or brick moves **toward the inside** of the turn (insufficient rudder).
- **Skidding** — the ball or brick moves **toward the outside** of the turn (excessive rudder).

To maintain coordinated flight, apply rudder in the direction of the ball or brick:

> *"Step on the ball"* — or in this case, the ball or brick — to re-center it.

Importance

Flying in coordinated flight:

- Reduces drag and improves efficiency.
- Increases passenger comfort.
- Enhances control, especially during low-speed flight and stall recovery.

Slip indicator settings

In the setup page, go to "user" section, select "Display and Graphic" and select menu "PFD". Go to “Slip indicator”.

Figure 15. Slip indicator settings

5.6 Standard rate turn indicator

The **Iris EFIS** also includes a standard rate turn indicator, which helps the pilot maintain consistent and controlled turns at a defined rate.

Figure 16. Standard rate turn indicator

5.6.1 Display and Function

Standard rate turn indicator is represented by two airplane silhouettes on roll indicator. The silhouettes are hidden when TAS is less than 36 km/h.

The pilot performs standard rate turn when roll indicator marker (yellow triangle) aligns with airplane silhouette.

Although the standard rate turn is traditionally defined as $3\,°/s$ (a full $360\,°$ turn in two minutes), the Iris EFIS allows the pilot to choose between:

- **2-minute turn** (standard rate)
- **1-minute turn** (half-standard rate)
- **Off** (indicator hidden)

5.6.2 Standard rate turn indicator settings

To select "1 min", "2 min" or "Off" go to Setup page, "User" section and "Display and Graphic" menu. Select the "Std. rate turn" menu. Scroll and press in to select from the list.

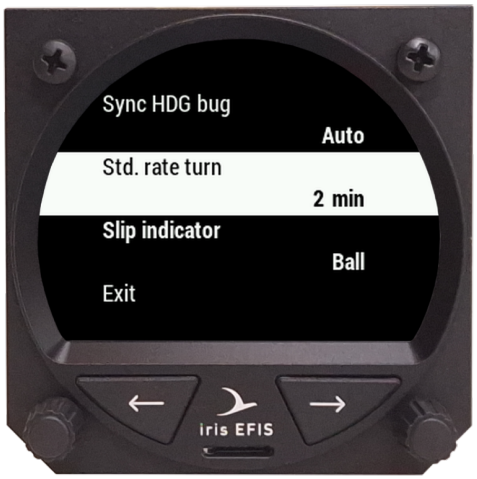

Figure 17. Standard rate turn indicator settings

Figure 18. Standard rate turn indicator options

5.7 Bank pointer

Bank pointer is displayed as a yellow triangle and is always fixed at its position. Underneath the yellow triangle we can find Slip indicator (if it is set to "brick").

5.8 Direction tape with bug

NOTE

If heading data is not available, red cross will appear over the magnetic heading widget.

A direction tape is displayed at the bottom of the PFD page. The information is provided by advanced module with the raster of ± 0,5°.

Figure 19. Direction tape with Bug function

Major marks (taller white lines) are shown at intervals of every 10°. Minor marks (shorter white lines) are shown at intervals of every 5°. The current magnetic heading is displayed in the black pointer box with a big value.

In the left corner, pilot can see the white pointer and value which indicates 90° left turn and its magnetic heading value.

In the right corner pilot can see the white pointer and value which indicates 90° right turn and its magnetic heading value.

A blue heading bug can be set to indicate a desired heading. To set the heading bug use left-hand push-rotary knob.

NOTE
Heading is not true heading – the value is not corrected for shifts and variations in the Earth's magnetic field.

White letter "M" in bottom right corner of black direction indicator box indicates that presented value (heading or track) is magnetic. If value is showing true track, no letter "M" is shown.

If the true track is shown instead of magnetic heading, the bug selection (bellow the indicated airspeed tape) will show "TRK" instead of "HDG".

True track is derived from GPS data and is therefore independent of the internal magnetometer.

NOTE
Magnetic interference from nearby instruments or electrical components may affect the accuracy of the magnetic heading. In such cases, it is advisable to use the true track (TRK) mode for improved reliability.

5.9 Bug - Direction tape

Direction tape with bug function is displayed at the bottom of PFD page.

Adjust the Direction tape bug to your desired heading with left-hand push-rotary knob while at PFD page.

Figure 20. Direction tape with Bug function

5.10 Direction tape bug options – show direction

Figure 21. Direction tape bug - Show direction options

In the setup menu, go to "User" section, select "Display and Graphic" and then "PFD". Scroll down to "Show direction" and press to select. Pilot can select between "Magnetic heading", "True track" and "Off".

If "Magnetic heading" option is selected, the bug will be set to pilot selected magnetic heading.

If "True track" option is selected, the bug will be set to pilot selected true track. The information is received by GPS module.

If "Off" option is selected, the Magnetic heading bar will be disabled.

The pilot can also switch between "Magnetic heading" and "True track" by pressing and holding the left-hand push-rotary knob while on PFD page.

5.11 Magnetic heading bug options – Sync HDG bug

In the setup menu, go to "User" section, select "Display and Graphic" and then "PFD". Scroll down to "Sync HDG bug" and press to select. Pilot can select between "Auto", "APT", "RTE" and "None".

Figure 22. Magnetic heading bug - Sync function options

If "auto" mode is selected, Iris EFIS will automatically select heading to the next TP (turnpoint) from the preadjusted RTE (route) navigation page, or selected APT (airport) at the APT navigation page whichever was changed/selected later.

If "APT" mode is selected, Iris EFIS will automatically select heading to the APT (airport) selected at the APT navigation page.

If "RTE" mode is selected, Iris EFIS will automatically select heading to the next point (APT or TP) selected at the RTE navigation page. Once TP is reached, iris Efis will automatically select next TP in your route.

If the "None" mode is selected, bug can be adjusted only with left-hand push-rotary knob on the PFD page.

5.12 Quick settings menu

Access the quick setting menu by pressing a right-hand push-rotary knob while on PFD page. In the menu, pilot can adjust “Pitch attitude offset”, "QNH" and “Brightness”.

At the top of the display, pilot can see the GPS status icon, Battery status icon and WiFi icon or Bluetooth icon (except when "Wireless mode" is set to "off").

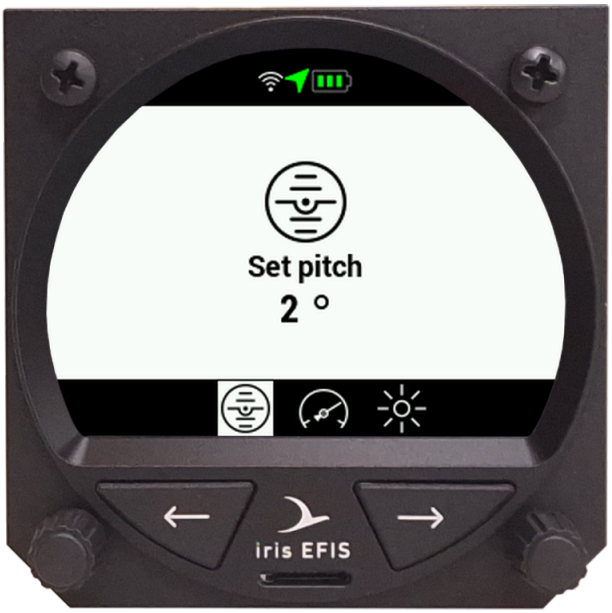

Figure 23. Quick settings menu

5.12.1 GPS status

At the top of Quick settings menu, pilot can see the GPS indication icon. GPS icon will be green if LX Iris EFIS has a valid GPS signal and red if LX horizon doesn’t have a valid GPS signal.

Figure 24. GPS signal is not valid

Figure 25. GPS signal is valid

5.12.2 Battery status

At the top of Quick settings menu, pilot can see the Battery status indicator.

White battery outline indicates that the device is using aircraft's battery. A red battery outline indicates it is using its own built-in backup battery.

Battery capacity is indicated with 3 levels of autonomy:

Main battery indicator (Battery outline is white):

- 3 green bars (more than 12.0V)
- 2 yellow bars (more than 10.8V)
- 1 red bar (less than 10.8V)

Figure 26. 3 green bars (more than 12.0V)

Figure 27. 2 yellow bars (more than 10.8V)

Figure 28. 1 red bar (less than 10.8V)

Backup battery indicator (Battery outline is red):

- 3 green bars (81 - 100 % backup battery left)
- 2 yellow bars (21 - 80 % backup battery left)
- 1 red bar (less than 20 % backup battery left)

Figure 29. 3 green bars (81 - 100 % left)

Figure 30. 2 yellow bars (21 - 80 % left)

Figure 31. 1 red bar (less than 20 % left)

5.12.3 Network setting

If Wireless mode is not set to "Off" there is an icon which shows status of network settings. Find out more about network setting in Network section.

There can be two different icons:

- **WiFi icon** if Wireless mode is set to "WiFi Access point" or "WiFi Client"
- **Bluetooth icon** if Wireless mode is set to "Bluetooth Server" or "Bluetooth Client"

Figure 32. WiFi icon

Figure 33. Bluetooth icon

NOTE
The Wi-Fi icon only shows the wireless mode in use and does not reflect the strength of the signal.

5.12.4 Pitch attitude offset

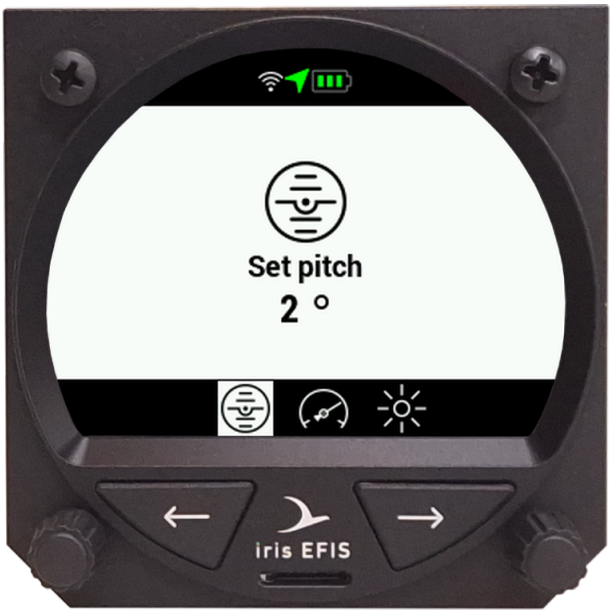

Figure 34. Pitch attitude offset

Pilot can adjust the pitch attitude offset to a desired value of ± 20° by pressing the right-hand push-rotary knob while on PFD page. Rotate the push-rotary knob to a desired value. Press to confirm. If not, in 5 seconds, the device will automatically exit the menu and the selected pitch attitude offset will be confirmed.

NOTE

The pitch attitude offset resets when the device is powered off. To apply a permanent pitch correction, use the "Cage AHRS" command in Service menu instead.

APT navigation page

From PFD page press right button to access APT (Airport) navigation page. Pilot can select which APT point to use as navigational point.

6.1 Overview

Figure 35. APT navigation page

6.2 Wind widget

Wind widget can be found in the lower left corner of the display. On the black background pilot can see:

- Wind direction relative to aircraft's heading (Black arrow in the green circle)
- Wind direction in degrees (with a wind socket icon)
- Wind speed with units (under Wind direction in degrees)

Wind calculation

Iris EFIS is able to measure wind using an iterative method that is based on indicated airspeed (IAS), ground speed (GS) and track (TRK) measurements.

6.3 Zoom level

While on navigation page (APT or RTE page), use left-hand push-rotary knob to Zoom in and out. By rotating the left-hand push-rotary knob pilot will move through predefined Zoom levels.

6.3.1 Map scale bar

Iris EFIS will display a “Map scale bar” in the lower right corner of the display while on navigation page.

The length of the bar is equal to the distance on the map in pilot defined units (kilometers (km), nautical miles (nm) or miles (ml)).

6.3.2 Zoom level marked with Map scale bar: 0.2 / 0.5 / 1 / 3 / 5 / 9

3D terrain map is displayed with airspace and airports marked with APT icon and name of airport. Edit graphic settings in setup page, user section, “Display and Graphic” and enter the “Map”.

Edit airspace appearance in setup page, user section, “Display and Graphic” and enter the “Airspace”.

6.3.3 Zoom level marked with Map scale bar: 12 / 25 / 50 / 125

3D terrain map is not displayed. Black background appears with airspace and airports marked with APT icon and name of airport. Edit graphic settings in setup page, user section, “Graphic” and enter the “Map”.

Edit airspace appearance in setup page, user section, “Graphic” and enter the “Airspace”.

6.4 Aircraft icon

Aircraft is displayed at the bottom of the page with icon. To change the aircraft icon, go to setup, system section and select “Aircraft”.

Go to “Category” and select from the list:

- **Airplane -** 
- **Glider -** 
- **Motor glider -** 
- **Rotorcraft -** 
- **Gyrocopter -** 
- **Airship -** 
- **Jet -** 
- **Fighter -** 

6.5 Navigation lines

Figure 36. Navigation lines

Navigation lines are displayed to help the pilot visualize the flight. The blue line represents aircraft Track line. The red line represents “Destination line”. Both are user defined in the setup menu, "User" section, "Display and graphic", "Map" and select “Destination line” or “Track line color”.

Figure 37. Track line color select

Figure 38. Track line transparency setting

Circular color menu will appear. Rotate the right-hand push-rotary knob to select the color and confirm by pressing in. After confirming, the transparency setting will appear with same circular menu. Rotate the right-hand push-rotary knob to select the color and confirm.

6.6 NavBox line

“NavBox” line is assembled of 4 “NavBoxes”. A row of “NavBoxes” assembles a “NavBox line” which is marked with an indicator number in the top right corner of the “NavBox line”.

Figure 39. Navbox line

6.6.1 NavBox

“NavBox” is the single information that is displayed by LX device as title and value with unit.

Figure 40. One "NavBox" item

6.6.2 “Navbox line” setup

To move through “NavBox lines” use right-hand push-rotary knob and rotate it. As pilot moves through “NavBox lines”, one can see that the indicator number number on the right changes. The movement through “NavBox lines” is circular.

LX Iris EFIS supports 3 “NavBox lines” and additional “disabled mode” which hides the “NavBox line” and extends the map.

6.6.3 Edit “NavBox”

NavBoxes will appear on the APT and RTE navigation pages. All “NavBoxes” are pilot defined. To change the “NavBox” press and hold right-hand push-rotary knob. The selected “NavBox” will appear on the red background. Rotate the right-hand push-rotary knob to move through each “NavBox” and press in to select which one to edit.

Figure 41. Press and hold the right-hand push-rotary knob to edit NavBox

Once pilot has selected the “NavBox” to edit, a drop-down menu will appear with all available “NavBox” information:

- UTC time
- Local time
- Flight time
- Leg time
- Total distance
- Remaining distance
- ETE (Estimated Time Enroute)
- ETA (UTC)
- ETA (local time)
- Leg distance
- Leg ETE
- Leg ETA (UTC)
- Leg ETA (local)
- Altitude
- Flight level
- Density altitude
- GPS altitude
- Height AGL
- Elevation
- Vertical speed
- TAS (true airspeed)
- IAS (indicated airspeed)
- Ground speed
- True track
- Magnetic heading
- Bearing
- OAT
- G-force
- Flap position
- Phase of flight
- No of landings
- Last landing time

Figure 42. "Navbox select" menu

Rotate the right-hand push-rotary knob to move through each “NavBox” information available. Press the push-rotary knob to select the “NavBox” information.

6.7 Select APT

Figure 43. Select Navbox menu

On the APT page, pilot can navigate to selected airport. To select an airport, press the right-hand push-rotary knob while at APT page. A “Select airport” menu will appear. In the first row there are search parameters.

6.8 Sort by

Figure 44. Select airport menu, Sort by function

Press the right-hand push-rotary knob to define the “Sort by” parameter. Default value is “ICAO”. Pilot can choose:

- **“ICAO”**, which will sort the results based on ICAO code in the alphabetical order.
- **“Distance”**, which will sort the results based on the distance. From the closest to the furthest airport.
- **“Name”**, which will sort the results based on the name in the alphabetical order.

Once pilot has selected the desired “Sort by” parameter by pressing the right-hand push-rotary knob, one can can apply next parameter, which is “Filter”.

On the left side of the display a circular motion keyboard will appear. Use right-hand push-rotary knob to rotate and search for each letter.

Once the letter is selected press right-hand push-rotary knob to select it. Use it to add 0-12 signs to use as “Filter” parameter.

Figure 45. Adding "Filter" parameter with alphanumerical value

Once pilot has selected the desired “Filter” parameter by pressing the right-hand push-rotary knob, one can apply next parameter, which is “Country”.

Default value is "All" which will search all available countries.

Use right-hand push-rotary knob to rotate and move through circular list of countries, sorted by alphabetical order. To move through the list faster, by 10 lines at the rotate, press in right-hand push-rotary knob and rotate while pressed.

Figure 46. Adding "Country" parameter with rotating right-hand push-rotary knob

Each of the parameters applied will affect the search results below the search parameters.
If sorted by distance, no “Filter” can be applied and is disabled (grey text).

Figure 47. Scroll down and select the desired APT

For Each Airport the following information is shown:

- Rotating bearing icon to the selected airport (Relative bearing relative to track)
- Distance to the selected airport
- Bearing to the selected airport in degrees (Absolute bearing relative to true north)

The selected airport can be confirmed by press of the right-hand push-rotary knob.
Once the airport is selected, device will return to APT navigation page.

NOTE
Details about the selected airport are accessible by pressing the left-hand push-rotary knob at the APT page.

6.9 APT details page

To access APT details page, pilot must press the left-hand push-rotary knob at the APT page. Additional information about the selected airport will appear. If some data is not available “No data” text will appear under the title of information.

Figure 48. Selected APT details

The list of displayed data if available in the APT file:

- Rotating bearing icon to the selected airport (Relative bearing relative to track) and Bearing to the selected airport in degrees (Absolute bearing relative to true north)
- Distance to the selected airport
- Radio frequency of the selected airport
- Runway surface of the selected airport
- Elevation of the selected airport
- Runway heading of the selected airport

RTE navigation page

Figure 49. RTE navigation page

From APT navigation page press right button to access RTE (Route) navigation page. Pilot can create, select and edit the route.

7.1 Wind widget

Wind widget can be found in the lower left corner of the display. On the black background pilot can see:

- Wind direction relative to aircraft's heading (Black arrow in the green circle)
- Wind direction in degrees (with a wind socket icon)
- Wind speed with units (under Wind direction in degrees)

Wind calculation

Iris EFIS is able to measure wind using an iterative method that is based on indicated airspeed (IAS), ground speed (GS) and track (TRK) measurements.

7.2 Zoom level

While on navigation page (APT or RTE page), use left-hand push-rotary knob to Zoom in and out. By rotating the left-hand push-rotary knob pilot will move through predefined Zoom levels.

7.2.1 Map scale bar

Iris EFIS will display a “Map scale bar” in the lower right corner of the display while on navigation page.

The length of the bar is equal to the distance on the map in pilot defined units (kilometers (km), nautical miles (nm) or miles (ml)).

7.2.2 Zoom level marked with Map scale bar: 0.2 / 0.5 / 1 / 3 / 5 / 9

3D terrain map is displayed with airspace and airports marked with APT icon and name of airport. Edit graphic settings in setup page, user section, “Display and Graphic” and enter the “Map”.

Edit airspace appearance in setup page, user section, “Display and Graphic” and enter the “Airspace”.

7.2.3 Zoom level marked with Map scale bar: 12 / 25 / 50 / 125

3D terrain map is not displayed. Black background appears with airspace and airports marked with APT icon and name of airport. Edit graphic settings in setup page, user section, “Graphic” and enter the “Map”.

Edit airspace appearance in setup page, user section, “Graphic” and enter the “Airspace”.

7.3 Aircraft icon

Aircraft is displayed at the bottom of the page with icon. To change the aircraft icon, go to setup, system section and select “Aircraft”.

Go to “Category” and select from the list:

- **Airplane -** 
- **Glider -** 
- **Motor glider -** 
- **Rotorcraft -** 
- **Gyrocopter -** 
- **Airship -** 
- **Jet -** 
- **Fighter -** 

7.4 Navigation lines

Figure 50. Navigation lines

Navigation lines are displayed to help the pilot visualize the flight. The blue line represents aircraft Track line. The red line represents “Destination line”. Both are user defined in the setup menu, "User" section, "Display and graphic", "Map" and select “Destination line” or “Track line color”.

Figure 51. Track line color select

Figure 52. Track line transparency setting

Circular color menu will appear. Rotate the right-hand push-rotary knob to select the color and confirm by pressing in. After confirming, the transparency setting will appear with same circular menu. Rotate the right-hand push-rotary knob to select the color and confirm.

7.5 NavBox line

“NavBox” line is assembled of 4 “NavBoxes”. A row of “NavBoxes” assembles a “NavBox line” which is marked with an indicator number in the top right corner of the “NavBox line”.

Figure 53. Navbox line

7.5.1 NavBox

“NavBox” is the single information that is displayed by LX device as title and value with unit.

Figure 54. One "NavBox" item

7.5.2 “Navbox line” setup

To move through “NavBox lines” use right-hand push-rotary knob and rotate it. As pilot moves through “NavBox lines”, one can see that the indicator number (on the right) changes. The movement through “NavBox lines” is circular.

Iris Efis supports 3 “NavBox lines” and additional “disabled mode” which hides the “NavBox line” and extends the map.

7.5.3 Edit “NavBox”

NavBoxes will appear on the APT and RTE navigation pages. All “NavBoxes” are pilot defined. To change the “NavBox” press and hold right-hand push-rotary knob. The selected “NavBox” will appear on the red background. Rotate the right-hand push-rotary knob to move through each “NavBox” and press in to select which one to edit.

Figure 55. Press and hold the right-hand push-rotary knob to edit NavBox

Once pilot has selected the “NavBox” to edit, a drop-down menu will appear with all available “NavBox” information:

- UTC time
- Local time
- Flight time
- Leg time
- Total distance
- Remaining distance
- ETE (Estimated Time Enroute)
- ETA (UTC) - (Estimated time of Arrival)
- ETA (local time)
- Leg distance
- Leg ETE
- Leg ETA (UTC)
- Leg ETA (local)
- Altitude
- Flight level
- Density altitude
- GPS altitude
- Height AGL
- Elevation
- Vertical speed
- TAS (true airspeed)
- IAS (indicated airspeed)
- Ground speed
- True track
- Magnetic heading
- Bearing
- OAT
- G-force
- Flap position
- Phase of flight
- No of landings
- Last landing time

Figure 56. "Navbox select" menu

Rotate the right-hand push-rotary knob to move through each “NavBox” information available. Press the push-rotary knob to select the “NavBox” information.

7.6 Edit route

On the RTE page, pilot can navigate to next turnpoint according to route. To create a route press the right-hand push-rotary knob while at RTE page. “Edit route” menu will appear.

Figure 57. By pressing the right-hand push-rotary knob pilot enters "Edit route" menu

7.6.1 Add point

To add a turnpoint or airport, pilot must press the right-hand push-rotary knob to select “Add”.

Figure 58. Selecting "Add" will take pilot to "Select action" menu

“Select action” menu will appear. At this point, pilot will have to decide whether to insert turnpoint or airport.

Figure 59. "Select turnpoint" menu

To start with turnpoint, rotate and press to select “Select turnpoint”. A menu “Select turnpoint” appears.

7.6.1.1 Select turnpoint

Press the right-hand push-rotary knob to define the “Sort by” parameter. Default value is “Distance”.

Pilot can choose:

- **“Distance”**, which will sort the results based on the distance. From the closest to the furthest airport.
- **“Name”**, which will sort the results based on the name in the alphabetical order.
- **“Code”**, which will sort the results based on ICAO code

Once the pilot has selected the desired “Sort by” parameter by pressing the right-hand push-rotary knob, one can can apply next parameter, which is “Filter”.

On the left side of the display a circular motion keyboard will appear. Use right-hand push-rotary knob to rotate and search for each letter. Once the letter is selected press right-hand push-rotary knob to select it. Use it to add 0-12 signs to use as “Filter” parameter.

Each of the parameters applied will affect the search results below the search parameters. If sorted by distance, no “Filter” can be applied and is disabled (grey text).

The list will be instantly refreshed according to applied parameters and will display results:

- **“Name”**
- **“Rotating bearing icon to the selected airport”**
- **“Distance to the selected airport”**
- **“Bearing to the selected airport in degrees (°)”**

The selected turnpoint can be confirmed by press of the right-hand push-rotary knob.

Once the turnpoint is selected, device will return to “Edit route” menu. Selected turnpoint will be displayed as a Start point.

7.6.1.2 Select airport

To start the route with an airport, rotate and press to select “Select airport” from the “Select action” menu.

Figure 60. Selecting airport will take pilot to "Select action" menu

A menu “Select airport” appears after confirming.

Figure 61. Select airport menu

Press the right-hand push-rotary knob to define the “Sort by” parameter. Default value is “Distance”.

Pilot can choose:

- **“Distance”**, which will sort the results based on the distance. From the closest to the furthest airport.
- **“Name”**, which will sort the results based on the name in the alphabetical order.
- **“ICAO”**, which will sort the results based on ICAO code

Once the desired “Sort by” parameter is selected using the right-hand push-rotary knob, the next parameter - “Filter” - can be applied.

On the left side of the display, a circular motion keyboard will appear. Use the right-hand push-rotary knob to rotate and search for each letter. Press the knob to confirm a letter. Up to 12 characters can be entered as the “Filter” parameter.

After confirming the “Filter” parameter by pressing the right-hand push-rotary knob, proceed to the next parameter - “Country”.

Use the right-hand push-rotary knob to scroll through a circular list of countries, sorted alphabetically. To move faster (by 10 items at a time), press and hold the knob while rotating it.

Each of the parameters applied will affect the search results below the search parameters.

Figure 62. Filtered results

For Each Airport the following information is shown:

- Rotating bearing icon to the selected airport
- Distance to the selected airport
- Bearing to the selected airport in degrees (°)

The selected airport can be confirmed by pressing the right-hand push-rotary knob.

Once the airport is selected, device will return to “Edit route” menu.

7.6.2 Delete added turnpoint or airport

To delete the new created point, go to “Edit route” and rotate and press to select the point you want to delete. A “Select action” menu will appear with the option “Delete”.

7.6.3 Route options

Figure 63. route options menue

To access “Route options” menu press the left-hand push rotary knob while at RTE navigation page.

7.6.3.1 Edit route

Refer to menu “Edit route”.

7.6.3.2 Delete route

Select the option to quickly delete the route. A pop-up window will appear.

7.6.3.3 Reverse route

Once the pilot has successfully ended the route he can easily reverse it to return to home.

7.6.3.4 Next turnpoint

Quickly select next turnpoint in your planned route. Disabled (grey text) if your current position is Landing.

7.6.3.5 Previous turnpoint

Quickly select previous turnpoint in your planned route. Disabled (grey text) if your current position is Take-off.

7.6.3.6 Show waypoint details

Figure 64. Show waypoint details

Shows details of the currently active turnpoint.

7.6.3.7 Exit

Exit this menu.

Traffic radar page

8.1 Overview

Figure 65. Traffic radar screen

Figure 66. Traffic radar select circle

The Traffic radar page shows all surrounding objects reported to the iris EFIS by a Flarm device. If the said Flarm device has an ADS-B module, ADS-B objects will be shown as well. Flarm objects are shown on a radar screen with track-up orientation.

Airplanes presented as a dot on the screen, are the ones where pilots have intentionally activated the PRIVACY mode on their Flarm unit. Airplanes in privacy mode send limited data strings and can't be visualized completely. However, all warnings will appear regardless of privacy mode.

Pressing the **right push-rotary knob** will invoke the selection of a traffic object to follow. For a selected object, additional details will be displayed on the bottom of the screen, as depicted on Traffic radar select circle.

The following icons are used for each parameter:

- **- Climb rate**
- **- Bearing**
- **- Ground speed**
- **- Track**
- **- Vertical distance**
- **- Horizontal distance**

Rotating the **right push-rotary knob** will cycle through four different layouts of object details on the bottom of the page:

- **hidden**
- **all six parameters visible**
- **climb rate, ground speed, vertical distance visible**
- **bearing, track, horizontal distance visible**

Rotating the **left push-rotary knob** will change the zoom of the traffic radar screen and pressing it will open the traffic objects sub-page. In this sub-page, a list of all visible aircraft is shown. A green dot next to the name of the object shows which object has been select for additional info on the traffic radar page. Object ID and distance is also shown.

By choosing an object and pressing the right push-rotary knob, additional information can be seen and/or edited, for each object:

- **Callsign**
- **Pilot**
- **Airfield**
- **Registration number**
- **Frequency**
- **Flarm ID (always non-changeable)**

The iris EFIS supports FlarmNET database files, check **Transfer** section for additional information.

Figure 67. List of visible objects

Figure 68. Additional options for objects

An important safety feature of the iris EFIS is the warning page. This page pops-up whenever the Flarm device sends a warning sentence, regardless of the menu, page or setup you're currently in.

The warning screen shows the type of object the Flarm is warning you about, from the list of supported objects (Skydiver shown on figure). It's relative direction to your heading, relative altitude and distance, as well as an angle from the horizon, with the blue/brown scale on the left side of the screen. The relative direction of the object is also written in word with **SKYDIVER 12 O'CLOCK ABOVE**.

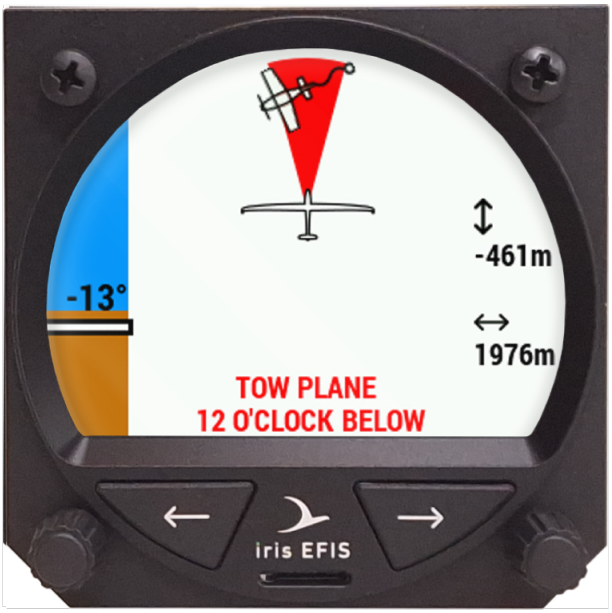

Figure 69. Traffic warning page

The LX 10k can show the following objects with appropriate graphics:

- **Glider -**
- **Tow plane -**
- **Helicopter -**
- **Skydiver -**
- **Drop plane -**
- **Hang-glider -**
- **Para-glider -**
- **Airplane -**
- **Jet aircraft -**
- **UFO -**
- **Balloon -**
- **Blimp, zeppelin -**
- **UAV -**
- **Obstacle -**

A lot of effort was put into the design of the Flarm Warning screen, shown by figure Traffic warning page. It's sole purpose is to quickly familiarize the pilot with the potential danger. Flarm provides us with three distinctive levels of danger:

- **13 to 18 seconds to impact -** the Flarm Warning screen appears, the iris Efis' internal beeper and the flashing of the direction cone are in the same, steady frequency. The lady from the iris Efis' internal voice module notifies you of the location of the object.
- **9 to 12 seconds to impact -** same as previous level, both the internal beeper frequency and beeping interval, as well as the flashing interval, intensify (higher frequency)
- **0 to 8 seconds to impact -** as on previous level, with the highest frequency of beeping and flashing.

G-force page

9.1 Overview

Figure 70. G-force page

G-force page delivers a super accurate G-force load applied to the pilot and aircraft.

At the top of the page is the actual G-force value.

On the left side pilot can see the “MIN” which is minimal G-force reached in the current flight.

On the right side pilot can see the “MAX” which is maximal G-force reached in the current flight.

On the left side of the display pilot can see the Airspeed tape. To find out more refer to Indicated airspeed tape section of the manual.

Above Airspeed tape there is GS (Ground speed) information

Below is the TAS (True airspeed) information.

On the right side of the display pilot can see the Altitude tape. To find out more refer to Altitude tape section of the manual.

Above Altitude tape there is a VS (vertical speed) information shown.

Below is the BARO (Barometric pressure). Set the BARO by turning the right-hand push-rotary knob. To find out more refer to “Barometric pressure” section of the manual.

9.2 Graphic G-force presentation

Current G-force load is also displayed as red dot on the G-force scale.

9.3 Change the G-force scale

To change the G-force scale, rotate the left-hand push-rotary knob. Pilot can select between 1G to 9G scale depending on the precision and load he expects to reach.

9.4 G-force options

Figure 71. G-force options

Press right-hand push-rotary knob to enter “G-force options”. Pilot can select “Reset” option, which will reset the “MIN” and “MAX” G-force information on the G-force page.

Info page

Figure 72. Info page

Info page will display the essential information about the device.

10.1 GPS status

GPS status is displayed in the first section of the page.

If the GPS status is “Last fix”, the device does not have valid GPS source. Check if the antenna is connected properly. Check if antenna is working.

Once the device will receive the valid GPS source, the status will change to “3D/4”, “3D/5”, “3D/6”, “3D/7”, “3D/8”, “3D/9”, “3D/10”, “3D/11”, “3D/12” etc.

Any GPS status above “3D/7” is considered as a strong GPS signal.

10.2 GPS coordinates

If the device has a valid GPS source, the current GPS coordinates will be displayed in the left section below “GPS status” as Latitude (N/S XXX XX’XX”) above and Longitude (E/W XXX XX’XX”).

10.3 UTC time and date

If the device has a valid GPS source, the current UTC time (above) and date (below) will be displayed in the right section below the “GPS status”.

10.4 OAT

Current outside air temperature will be displayed as "OAT" value. If the value seams wrong, please check if the OAT sensor is connected according to the installation manual.

OAT line is not displayed if OAT sensor is not connected or does not work properly.

10.5 Density altitude

Density altitude is the pressure altitude corrected for non-standard temperature. It represents the air density and has a direct impact on aircraft performance.

A higher density altitude — typically caused by high elevation, high temperature, or high humidity — results in thinner air, which leads to:

- Reduced engine power,
- Decreased lift,
- Longer takeoff distance,
- Lower climb performance.

Pilots should monitor density altitude, especially in hot or high-altitude conditions, to ensure safe and efficient flight operations.

10.6 Current power supply voltage

Current voltage will be displayed. The unit is Volt (V).

Pilot must be careful if the voltage drops below 9V or is higher than 32V.

10.7 Battery

Actual backup battery voltage is displayed as “Battery”.

Pilot must be careful if the voltage drops below 3V or is higher than 5V.

Backup battery is automatically charged all the time the device is switched on and connected to power supply. It will automatically switch to the power source in case of electrical failure, when the device is in flight mode.

Learn more about the backup battery in section Taking care of your iris EFIS.

NOTE

The use of the internal backup battery will be activated automatically only when in flight mode. Flight mode starts when the device detects flight conditions through its sensors. Approximately 5 minutes after losing its GPS signal, the device will conclude the flight and shutdown.
When the device is not in the flight mode, the device will turn off upon loosing main external power supply, without using its internal backup battery.

Logbook page

Figure 73. "Logbook" page with list of last 50 flights

11.1 Pilot's Logbook and Internal Memory

The **Iris Efis** acts as a digital pilot logbook, automatically recording flight data for every flight. The logbook page displays the last 50 flights, while all recorded flights are stored in the device's internal memory.
The internal memory is capable of storing hundreds of thousands of flight hours.
Each of the last 50 displayed flights includes the:

- Flight date,
- Flight duration,
- Pilot name.

Flights are sorted chronologically by date. The pilot name is taken from the profile selected at startup. This makes it easy to identify which pilot completed each flight—especially useful when multiple pilots use the same aircraft.

Use the right-hand push-rotary knob to scroll through the list. Press the knob to select a specific flight.

11.2 Flight Details

Selecting a flight opens the **Flight Details** page.
This page displays:

- Pilot name,
- Takeoff time,
- Landing time,
- Total duration,
- Maximum indicated airspeed (IAS),
- Maximum altitude.

These values provide a quick and convenient way to complete your personal or aircraft logbook.

Figure 74. Flight Details page with recorded values and "Transfer to SD" option

11.3 Flight Transfer

To download a flight, select the **“Transfer to SD”** option. The file will be saved to the microSD card inserted in the slot between the buttons on the front of the device.
A confirmation popup (“Transfer”) will appear.

NOTE
If the transfer is not successful, check whether the SD card is properly inserted.
Only use the microSD card provided by the manufacturer.

Figure 75. Transfer

NOTE
Always use manufacturer provided Micro SD card. Third party SD cards might not function with this device. In case the card is lost, contact LX navigation

Statistics page

Figure 76. Statistics page

12.1 Overview

The **Statistics** page is only visible when the device is in flight mode. In flight mode, it automatically replaces the *Logbook* page.

The device enters flight mode when both valid airspeed and altitude inputs are detected.

12.2 Statistics Information

The Statistics page displays a barograph, with **time** on the x-axis and **altitude** on the y-axis. The altitude scale automatically adjusts based on the highest altitude reached during the flight. At the bottom of the page, four key flight parameters are shown:

- **Takeoff** — Time of takeoff (UTC)
- **Duration** — Total flight duration
- **Max alt** — Maximum altitude reached
- **IAS** — Current indicated airspeed

12.3 Ending a Flight

Figure 77. "End flight" confirmation message

To manually end a flight, press the right-hand push-rotary knob while on the Statistics page. A pop-up message will appear—use the same knob to select *Yes* or *No*.

Figure 78. Automatic flight termination after airspeed and altitude drop to zero.

The device will also automatically end the flight 15 seconds after both airspeed and altitude reach zero.

Airspace page

Figure 79. "Airspace" page with the list of active airspace and details

Airspace page will list all the near and active airspace.

To transfer the airspace file (.as), go to Setup, System section and Transfer menu.

13.1 List of airspace

At the list of airspace, pilot can see the name of the airspace and its class below. On the right is relative distance. On the right part of the line are the vertical limits in meters/feet of altitude, height (AGL) or flight level (FL).

Figure 80. Empty list will appear if no airspace is near or active

Figure 81. List of near and active airspace with details

13.2 Airspace details

By pressing right-hand push rotary knob on selected airspace from the list, pilot will access "Airspace details" page.

Device will display a graphical representation of the airspace and the current aircraft position along with the information already available on previous page.

Figure 82. Airspace details page with graphical representation of airspace

Setup page

14.1 Overview

At setup page, the pilot can set all parameters of the unit. The Setup menu is divided into two sections, "User" and "System". "User" settings are concerning the pilot's personal preferences and setting, which will change if the pilot selects of the pilot profile, while "System" settings are concerned to the device setup and stay fixed all the time.

14.2 "User" section

"User" section of setup are settings of the pilot, which will change if the active pilot will change. User section setup items are:

- **"Pilot"**
- **"Voice"**
- **"Pages"**
- **"Display and Graphic"**
- **"Warnings"**

14.2.1 Pilot

Figure 83. Setup page and "Pilot" menu

Pilot settings will allow the pilot to:

- Select active pilot (Select from the list)
- Write a name of the pilot
- Write a surname of the pilot
- Set Cloud ID (for connecting to LX Cloud)
- Enable/disable club profile (Password)
- Import pilot profile
- Export pilot profile
- Delete pilot profile

Entering new pilot

To enter a new pilot press on "Active pilot". This will open a list of pilots. Select "EMPTY".

Now change "Name" and "Surname". A new profile with entered name and surname has been created.

14.2.2 Voice

NOTE
If the Iris EFIS is not connected to an external audio device (such as a speaker or audio panel), these settings will have no effect.

In the Voice Settings, the pilot can adjust the volume and choose which audio warnings or messages are enabled. The available audio warnings and messages include:

- Flarm Traffic (traffic information)
- Flarm warning
- Flarm obstacle
- Flarm h. distance
- Flarm v. position
- APT frequency

14.2.3 Pages

The Pages setting is allowing the pilot to enable and disable all available pages of the iris Efis:

- PFD
- APT page
- RTE page
- Traffic
- G-force
- AOA (not available in normal device configuration)
- GPS Info
- Logbook
- Airspace

Figure 84. Pages menu

With a right-hand push-rotary knob we can move though menu and press to select each item. Once the item is selected, the indication icon will change.

Default page

Default page setting allows the pilot to select the default page of the device - the first page the pilot will see when the device will power on.

Figure 85. Default pages settings

Select from the list of available pages:

- PFD page (set by default)
- APT page
- RTE page
- Traffic page
- G-force page
- GPS info page
- Logbook page
- Airspace page
- Setup page

Default setting is PFD page.

14.2.4 Display and Graphic

Display and Graphic menu will allow the pilot to set the visual parameters of the device.

The menu contains:

- **“Airspace”** Visual settings
- **“Map”** Visual settings
- **“Route”** Visual settings
- **“PFD”** Visual settings
- **“Theme”** Visual settings
- Brightness settings

14.2.4.1 Airspace

In the "Airspace" menu pilot can adjust colors to specific airspace. Pilot can define "Outline" color, "Fill" color and "Transparency level".

- **“Controlled Zone”** Set "Outline" and "Fill" color
- **“Prohibited”** Set "Outline" and "Fill" color
- **“Restricted”** Set "Outline" and "Fill" color
- **“Danger”** Set "Outline" and "Fill" color
- **“Terminal area”** Set "Outline" color
- **“Airway”** Set "Outline" color
- **“Glider”** Set "Outline" color
- **“Military”** Set "Outline" color
- **“Other”** Set "Outline" color
- **“Class A, B”** Set "Outline" and "Fill" color
- **“Class C”** Set "Outline" color
- **“Class D”** Set "Outline" color
- **“Class E”** Set "Outline" color
- **“Class F”** Set "Outline" color

14.2.4.2 Map

In the "Map" menu, pilot can adjust various map related settings. The settings set here will be aplied to both APT and RTE page. Settings include:

- **“Orientation”** Select between "Track up" and "North up"
- **“Color Palette”** Select between 14 different 3D terrain relief color palettes
- **“TP/APT text size”** Select between "Small", "Normal" and "Large"
- **“TP/APT text color”** Set the color and transparency level
- **“Destination line color”** Set the color and transparency level
- **“Track line color”** Set the color and transparency level
- **“Display Terrain”** "On" or "Off" option
- **“Display APT name”** "On" or "Off" option
- **“Display TP name”** "On" or "Off" option

Figure 86. Color Palette - Default

Figure 87. Color Palette - Light

Figure 88. Color Palette - Imhof 1

Figure 89. Color Palette - Imhof 2

Figure 90. Color Palette - Imhof 3

Figure 91. Color Palette - Mountains 1

Figure 92. Color Palette - Mountains 2

Figure 93. Color Palette - Swiss Atlas

Figure 94. Color Palette - ICAO

Figure 95. Color Palette - Orange

Figure 96. Color Palette - UK

Figure 97. Color Palette - Black and white

Figure 98. Color Palette - Black (no elevation)

Figure 99. Color Palette - White (no elevation)

14.2.4.3 Route

In the "Route" menu, pilot can adjust colors to specific elements on the "RTE" page. Pilot can define "Fill" color and "Transparency level".

To define "Fill" color select the setting that you want to edit. After selecting the color there will be an option to select "Transparency level".

- **"Active points"** Set the color and transparency level
- **"Inactive points"** Set the color and transparency level
- **"Legs yet to cover"** Set the color and transparency level
- **"Active leg"** Set the color and transparency level
- **"Course to TP"** Set the color and transparency level
- **"Covered leg"** Set the color and transparency level

14.2.4.4 PFD

In the "PFD" menu, pilot can adjust specific elements on the "PFD" page. For more detail check PFD page section.

- **“Show airspeed”** "On" or "Off" option
- **“Show altitude”** "On" or "Off" option
- **“Show direction”** Select between "Magnetic Heading", "True Track" and "Off"
- **“Sync HDG bug”** Select between "Auto", "APT", "RTE" and "None"
- **“Std. rate turn”** Select between "1 min", "2 min" and "Off"

14.2.4.5 Theme

In the "Theme" menu, pilot can select color theme of the device. The theme can be selected only on the ground and it is disabled mid-flight. To change the theme the device needs to reboot.

- **“Black panel”** Black background with white text
- **“White panel”** White background with black text

14.2.5 Warnings

In the "Warnings" menu, pilot can enable or disable warnings. Following warnings can be set:

- **“Audio”** warnings
- **“Traffic”** warnings
- **“Stall”** warnings
- **“Vne”** warnings

Stall and Vne warnings are related to the values adjusted at "Setup" page, System section, "Aircraft" menu, "Airspeed" menu.

14.3 "System" section

"System" section of setup are settings of the device, which remain fixed until changed and will not be affected by the active pilot.

Figure 100. Aircraft menu

System section setup items are:

- **“Aircraft”**
- **“Units”**
- **“Transfer”**
- **“NMEA”**
- **“Network”**
- **“Cloud”**
- **“Localisation”**
- **“Service”**

14.3.1 Aircraft

Figure 101. Aircraft menu

In the "Aircraft" menu, pilot can access the 4 different aircraft related settings:

- "Airspeed" - Set the Vs1, Vs0, Vne for Indicated airspeed tape
- "Registration nr" - Set aircraft registration number
- "Category" Select aircraft category to change the icon on APT and RTE navigation page
- "Flap positions" - Define airspeeds for different flap positions.

Figure 102. Aircraft menu, "Airspeed" section

Figure 103. Aircraft menu, "Category" section

Figure 104. Aircraft menu, "Registration nr" section

14.3.2 Units

In the "Units" section, pilot can adjust all units related parameters.

- **“Altitude”** Select unit "m" or "ft".
- **“Vertical speed”** Select unit "m/s", "kts" or "fpm".
- **“Speed”** Select unit "km/h", "mph" or "kts".
- **“Wind Speed”** Select unit "km/h", "mph", "kts" or "m/s".
- **“Distance”** Select "km", "nm" or "ml".
- **“Pressure”** Select "hPa" or "inHg".
- **“Temperature”** Select "C" or "F".
- **“Weight”** Select "kg" or "lb".
- **“Area”** Select "m2" or "ft2"

Figure 105. Setup page, "Units" section

14.3.3 NMEA

In the "NMEA" section, pilot can adjust all communication protocols between LX navigation device and third party peripherals.

To find out more, please refer to "LX NMEA 1.0 Protocol" and "LX NMEA 2.0 Protocol" document.

- **“Flarm”** Select baud rate "BR4800", "BR9600", "BR19200", "BR38400", "BR57600" or "BR115200".
  Included "PFLAU", "PFLAA", "PFLAC", "PFLAE", "PFLAL", "PFLAQ". For individual sentence specification check Flarm documentation.
- **“User”** Select baud rate "BR4800", "BR9600", "BR19200", "BR38400", "BR57600" or "BR115200".
- **“GPGGA”** ”On” or ”Off” option. LX device forwards GPGGA (Fix information) sentences received from GNSS module.
- **“GPRMC”** ”On” or ”Off” option. LX device forwards GPRMC (Recommended minimum data for gps) sentences received from GNSS module.
- **“GPRMB”** ”On” or ”Off” option. LX device outputs Recommended minimum navigation info.
- **“LXWPx”** "On” or ”Off” option. LX device outputs LXWP0 (flight data), LXWP1 (device info), LXWP2 (basic parameters), LXWP3 (detailed parameters) sentences.
- **“LXDT”** ”On” or ”Off” option. LX device enables LXDT communication (input and output). "On” or ”Off” option. LX device outputs LXBC sentences (AHRS data, etc.)
- **“LXBC"** ”On” or ”Off” option. LX device outputs LXBC sentences (AHRS data, etc.)
- **"PFLAx"** ”On” or ”Off” option.
- **"Levil"** ”On” or ”Off” option.
- **“Radio"** Select type of radio connected.
- **“Send APT frequency”** "On" or "Off" option if "Radio" is selected.
- **“Transponder”** "On" or "Off" option. If enabled - "On", baudrate on "Flarm" port will go to "BR9600" and GPS data will be transmitted on "Flarm" port.

NOTE

For detailed description of LXWPx, LXDT and LXBC sentences refer to LX Navigation Communication Protocols documentation (document name: LX_CP). This document can be found here:
https://downloads.lxnavigation.com/device/iris-efis

Figure 106. Setup page, "NMEA" section

14.3.3.1 Radio settings

Iris Efis supports connection to the Radio. Following radios types have been tested with the iris Efis:

- KRT2
- ATR833
- Becker
- Trig
- Air Avionics

Figure 107. "NMEA" section

Figure 108. Radio Selection

When Radio option is enabled (Radio type is selected), all other outputs on "User" port are disabled, but are still present via "Bluetooth" port.

If "send APT freq." is enabled, iris Efis automatically sets the standby frequency to frequency of the Airport which is selected on the APT page.

NOTE
For connecting the iris Efis to Radio refer to LX Navigation Radio transceiver connections documentation (document name: LX_RCD).
This document can be found here:
https://downloads.lxnavigation.com/device/iris-efis

14.3.4 Transfer

In the "Transfer" section, pilot can transfer and upload all database files.

Pilot should use specific data formats:

- **“.cub”** For "Airspace" files.
- **“.cup”** For "Task", "Turnpoint" and "Route" files.
- **“.af”** For "Airport" file.

NOTE
Pilot must be careful to not exceed the maximal file size of 750 kb.

Database for iris Efis is available at: **https://downloads.lxnavigation.com/device/iris-efis**

- **“Turnpoints”** "Load", "Delete", "Select" or "Deselect".
- **“Airports”** "Load", "Delete", "Select" or "Deselect".
- **“Airspace”** "Load", "Delete", "Select" or "Deselect".
- **“Auto select LX DB”** Enabled or Disabled
- **“Load route”** "Load", "Delete", "Select" or "Deselect".
- **“Flarm NET”** "Load", "Delete", "Select" or "Deselect".

Figure 109. Setup page, "Transfer" section

The iris EFIS allows the utilization of **Flarm NET databases**. If a database is used, and a Flarm object with a Flarm ID found in the database shows up, the iris Efis will automatically use the info from the FlarmNET database and assign it to the said object.

14.3.5 Network

In the "Network" section, pilot can adjust all the network settings.
"Wireless" section of "Network" menu:

- **“Wireless mode”** "Off", "Bluetooth server", "Bluetooth client", "WiFi Access point" or "WiFi client".
- **“Wireless setup”** Enter "BT Server" with "Name" and "Password".
  - if “Wireless mode” is **"Bluetooth server"**, set "Name" and "Password".
  - if “Wireless mode” is **"Bluetooth Client"**, select device to connect with.
  - if “Wireless mode” is **"WiFi Access point"**, set WiFi access point settings.
  - if “Wireless mode” is **"WiFi Client"**, select WiFi to connect with.

Figure 110. Setup page, "Network" section

14.3.6 Cloud

In the "Cloud" menu all settings for LX Cloud can be set.

To connect to LX Cloud first the Cloud ID has to be set in "Pilot" menu.
LX Cloud can be accessed at https://cloud.lxnavigation.com/

Figure 111. Setup page, "Cloud" section

14.3.7 Localisation

In the "Localisation" section, pilot can adjust "Language" and "Timezone".

- **“Language”** Select Language.
- **“Timezone”** Select timezone from the list.
- **“DST”** Daylight saving time. ”On” or ”Off” option.

14.3.8 Service

Figure 112. Setup page, "Service" section

In the "Service" section pilot can access multiple settings:

- **“Device Info”** "Serial number", "Cloud Ownership ID", "Firmware", "Hardware", "Network version" and "Battery".
- **“CAN unit info”** Information on any devices connected via CAN.
- **“Cloud Info”** Information about settings fo LX Cloud.
- **“Password”** (Numeric input for special features and functions)
- **“Club mode”**(Must be enabled first with "Password". Club mode is special operation mode which disables pilot to erase and change any settings on the device.)
- **“Cage AHRS”** Set your current AHRS position as horizontal position (pitch = 0°, roll = 0°).
- **“Uncage AHRS”** Reset your offsets made by "Cage" function to actual values.
- **“Set magnetic calibration”** See Magnetic Compass Calibration
- **“Set magnetic calibration”** Resets any compensation made by “Set magnetic calibration” function.
- **“Altimeter calibration”** See Altimeter Calibration
- **“Software update”** Select the version from the list.
  For procedure, go to section *Software update procedure*.

- **“Load license”** Select the "EfisPro" if you have the key to unlock the features.

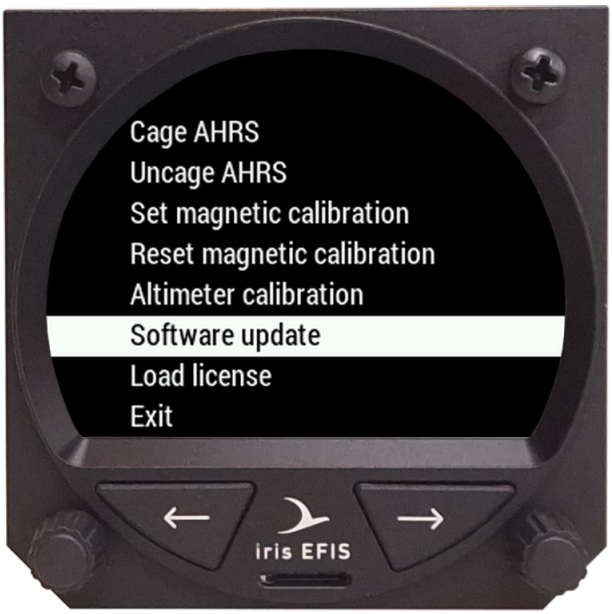

Figure 113. Setup page, "Service" section

14.3.8.1 Magnetic Compass Calibration

To calibrate magnetic compass use following procedure:

Go in "Setup" page, "Service" menu and select "Reset magnetic calibration".

Fly and make both left and right 360° turns for at least 40 seconds. Magnetic compass should automatically compensate the errors. Verify the indication is correct and save the compensation parameters by going in "Setup" page, "Service" menu and selecting "Set magnetic calibration".

If there is still an error after turns, try this procedure in a different location. Reset Magnetic data before attempting a different location or moving iris Efis to a different aircraft or environment.

NOTE

Magnetic interference from nearby instruments or electrical components may affect the accuracy of the magnetic heading. In such cases, it is advisable to use the true track (TRK) mode for improved reliability.

14.3.8.2 Altimeter Calibration

To calibrate altimeter use following procedure:

Go in "Setup" page, "Service" menu and "Altimeter calibration"

Enter the current pressure altitude (altitude read by reference altimeter with baro setting 1013 hPa).

Exit Altimeter calibration Page.
NoteboxThe altitude sensor of the iris Efis is calibrated during the manufacturing process. Altimeter calibration should only be performed if there is an error in the altitude reading.

Taking care of your iris EFIS

If you were taken here by following the link from the introductory part of this manual, you can get back by clicking on the underlined text - **Using this manual**.

15.1 The internal battery

The iris EFIS has a Li-Ion internal battery, used for powering the unit, if the main power supply of the plane gets cut, during flight.

The internal battery can power the iris EFIS from **3 to 5 hours**, depending on the brightness level, whether wireless is on, and the volume.

To extend the longevity of your iris EFIS' battery a few key steps should be taken:

- **Avoid using the internal battery, when not needed -** Do not intentionally cut the power to the iris EFIS, when there is still enough power from your main batteries. Do not intentionally leave it in flight mode.
- **Avoid draining the internal battery -** Draining the battery completely is a known culprit for reducing battery capacity. If you see the iris EFIS changed to its internal power supply, think about heading to your home airfield.
- **Proper winter storage -** During periods of long inactivity, especially during winter, when cold temperatures are present, the battery capacity is lowered by cold temperatures and it can easily happen that the battery gets completely drained causing the iris EFIS to lose part of its capacity. To avoid this from happening, it is recommended that, whenever the iris EFIS is in storage, it should be connected to an external power supply regularly, every 4 to 6 weeks, for at least 3 hours, for the internal battery to charge.

NOTE

The iris EFIS can not power external devices, while on internal power, meaning Flarms, User port connected PDA/PNA devices and CAN connected devices will stop working (unless they have an internal power supply of their own.

NOTE

The iris EFIS charges the internal battery automatically, when connected to an external power supply.

15.2 Pressure sensors

The iris EFIS incorporates a variety of delicate pressure sensors. Since these are zero-flux sensors (there is no airflow through the sensors, only pressure differences), no air filters are required.

Static pressure sensors have an operating range of 0 to 1200 mbar, with a high resolution of 20cm of altitude. Any overpressure could damage the static pressure sensor permanently, which is why great caution should be exercised when setting up and testing the pitot-static system. If the total pressure were to be connected to the static port, and a pilot was to check the IAS reading by blowing into the pitot tube, damage could easily occur.

The differential pressure sensor has an operating speed of up to 460 km/h (100hPa). Older devices with HW version 1.0 - 1.2 have differential pressure sensor with an operating speed of up to 325 km/h (50hPa). Flying over this speed, or applying the equivalent pressure, may damage the sensor permanently.

15.3 Display

If your plane has a canopy that opens upwards, leaving the canopy open in the sun is known to have a magnifying glass effect, concentrating the sun rays to a smaller area. This can damage the internals of your cockpit, as well as the display of the iris EFIS. Applying excessive heat will make the coating of the display start to become yellow and bubble (best case scenario), or destroy the device completely. This is why it is prudent to always have your canopy, covered from direct sunlight.

15.4 RJ connectors

RJ connectors (RJ12 and RJ45) on the back of the iris EFIS are used for connecting external devices. If the cable is pulled out, without pressing the plastic security pin, the internals of the iris EFIS' connector may break and get ripped out. One should always be careful when taking the cable out, to press the security pin completely.

15.5 MicroSD card reader

The iris EFIS features a microSD card reader on the front of the device. The microSD should always be inserted carefully, not to miss the internal microSD card reader electronics.

15.6 Reverse polarity on power

Although the iris EFIS has diodes protecting it from reverse polarity on the main power lines, one should note the RJ connectors are not protected and internal electronics could still get damaged, if a power supply is connected to the wrong pins on the RJ connectors. Similarly, the iris EFIS can damage external devices, if a wrong cable is used for connection, as the iris

EFIS provides a 12VDC power supply to the CAN, Flarm and User ports.

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