



Document information

0.1 Abstract

This document contains release notes for the LX 10k. The user manual, installation manual, dataport and additional info can be found on www.lxnavigation.com.

0.2 Document status

Document status: PUBLIC

Document status	Explanation
Internal	Intended only for LX navigation staff
Public	Available publicly to all
Personal	Intended for a specific person and/or company, noted on this page
Dealer	Intended for a specific dealer, noted on this page
Manufacturer	Intended for a specific manufacturer, noted on this page

0.3 List of applicable products

Device	Version
LX 10k w/ digital indicator	V2.1
LX 10k w/ analog indicator	V2.1

0.4 Revision history

Document name	Document revision	SW version	Date	Revised by	Approved by	Notes
LX_10kRN	R1	1.6	10.6.2020	L.R.	N.S.	Up to version 1.6.112
	R2	1.6	2.7.2020	L.R.	N.S.	Up to version 1.6.136
	R3	1.6	14.7.2020	L.R.	N.S.	Up to version 1.6.151
	R4	1.6	29.7.2020	L.R.	N.S.	Up to version 1.6.160
	R5	1.6	1.9.2020	L.R.	N.S.	Up to version 1.6.191
	R6	2.0	13.4.2021	L.R.	N.S.	Up to version 2.0.444
	R7	2.0	19.8.2021	L.R.	N.S.	Up to version 2.0.580
	R8	2.1	22.3.2022	A.S.	N.S.	Up to version 2.0.874

Release notes

2.1.874/0 (2022-03-22)

- Showing warning message in case there is a problem with reading private key.
- Fix for TP filter not working (case sensitivity problem)

2.1.863/0 (2022-03-15)

- Fix for IGC file ending at 23:59:59 UTC (New Zealand problem)

2.1.842/0 (2022-02-21)

- Honeywell 100hPa sensor support added (hw = 1.3)

2.1.809/0 (2022-01-27)

- Fix for uploading flights to cloud (in case error reading file occurs).
- Fix for no progress shown (device stays in Preparing data) when DB download triggered manually from Cloud menu.
- Fix for DB Sync failures (bug introduced 07.09.2021)
- Implemented external sc switch and joy sc toggle coexistence.

2.1.792/0 (2022-01-21)

- Implemented Altimeter calibration

2.0.652/7549 (2021-10-08)

- Possible workaround for extreme values on vario arc (on digital vario indicator)

2.0.622/7503 (2021-09-15)

- Auto sync LX database.
- Added current file and number of all files to be downloaded in downloading popup.
- Creating FLARM directory if not yet exists.
- Thicker airspace boundary lines.
- Minor fixes for heading line and airplane icon alignment.
- Added Forget button to connected wifi submenu.

2.0.606/7466 (2021-08-30)

- Added support for new 57mm 16bit RGB display.
- Auto select LX database (airports and airspace) according to current position
- Added current file and number of all files to be downloaded in downloading popup.
- Minor fix for deselecting airspace and turnpoints in transfer menu.



2.0.595/7445 (2021-08-20)

- Minor fix for loading airspace after sync from cloud.
- Fix for Sync SoaringSpot to Zeus, also a fix for deleting CRC files when overwriting files with the same name from external to internal SD.

2.0.580/7437 (2021-08-08)

- Fix for not showing Flarm error message (PFLAE) if empty message sent from flarm.
- Fix for not showing info from FlarmNet file
- SoaringSpot integration

2.0.547/7415 (2021-07-08)

- Fix for showing gear warning 5 times the same as airbrakes warning (before the warning was shown until conditions were met).
- Added option to hide airbrakes and gear warning with rotary click.
- Synchronisation renamed to Second/First seat sync and shown in menu only if other seat connected.
- Minor fix for Cloud status in Cloud info menu.
- Fix for not loading database if no files were transferred from Cloud.
- Minor fix for showing warnings on init page (problem when multiple popups are overlaid).
- Possible fix for interrupted IGC files.
- Fix for wrong Flarm warning voice messages.
- Implemented mechanism for preventing exceeding database file safe limit.
- Fix for popup staying on the screen, when exporting pilot.

2.0.517/7295 (2021-06-11)

- Fix for Load task not working if file name longer than 10 characters.
- Possible fix for OAT not working after update to newer version.
- Added current input states to inputs menu.
- Vario test on command received from Zeus implemented.
- Fix for Sync NRST from Zeus.
- Added message on WiFi connected and disconnected.
- Added message on loading TP or AS file > 400kB.
- Sending currently connected SSID to Zeus.

2.0.479/7221 (2021-05-11)

no changes

2.0.477/7211 (2021-05-10)

- Minor bugfix for saving and reading file settings.
- Bugfix for digital vario indicator freeze when changing volume.
- Minor fix for graphic glitch if changing volume while TA page is shown automatically on thermalling.

2.0.471/7201 (2021-05-05)



- When Sync TP, APT or AS files, show "Synchronizing DB" instead of separate texts for different file types
- Send Pilot Event to FLARM device when triggered on LX device
- Broadcasting Pilot Event to CAN
- Fix for CUP files with non-default format not being parsed correctly
- Added SET,EVENT sentence to User port protocol
- Don't load TP/APT/AS database if nothing was changed in file select menu on exit
- Not saying negative vario values in thermal
- Fix for saying "Approaching obstacle" instead of actual traffic in FLARM warning
- Fix for restoring FLARM sentence if received over CAN
- Fix for uploading bulkload of flights to Cloud (id list longer than 255B)
- New calculation for AVG and EFF
- Added time since last pilot event navbox

2.0.444/7138 (2021-04-12)

- Fix for random crashes on TA page due to lack of free heap.
- Sync DB re-enabled

2.0.422/7111 (2021-03-24)

- Fix for TCP communication not working (problem with Mode TCP/or UDP setting) + LXBC,AHRS default interval increased to 1s
- Added polar LAK-12
- Fixes for network setup (SSID appearing both under connected and available, hiding connected title if not connected, disconnect submenu on connected SSID click)
- 2nd rotary jumps for 5 in keyboard widget (before didn't have function)
- Reenabling DB sync (1st > 2nd seat)
- Update CAN procedure moved before initial setup
- Update CAN now in CAN info menu
- Sync Airspeed 1st -> 2nd seat
- Fix for flap position text (if 4 bytes long) shown in NavBox
- Changed default task zones initial values (now start is 5k line, point is keyhole with 500m and 5km radius, finish is 3km circle)
- Vne warning depends on TAS instead of IAS
- Fix for SC mode Airspeed and Circling not working if Joy connected
- Fix for joy not working correctly in menu after question popup shown
- Load task from internal SD instead from external
- Hide Network menu and Cloud Info on 2nd seat
- Accessing Cloud Info from Cloud setup
- "AHRS with GPS" changed to "AHRS" in CAN unit info
- Fixes for updating over CAN + showing which unit is being updated in popup
- Ignore Copilot on import pilot
- Say Airport ICAO code, elevation and 2nd RWY on APT selected
- Joy handle long press
- Fix for Cloud DB sync filename length issue
- Airspace preview airplane icon according to settings
- Message shown on MOP error received on CAN



- Minor fix for canceling warnings on init page
- Disabling Cage AHRS in Service setup if AHRS (v3 or later) not connected
- Added popup messages during sync from Cloud
- Disabling Cloud Sync DB, Flight upload, SW update etc during flight
- Fixed slovenian translations for Cloud menu
- Greying out Username and status in Cloud Info
- Storing WiFi passwords by BSSID and SSID (to overcome issues of forgetting mobile hotspots due to mobiles changing BSSID every time hotspot is turned on)
- Fix for parsing flarm NMEA sentences version 8 and 9
- Fix for showing progress when syncing DB over CAN
- Added sync DB now to Sync setup (disabling when in flight)
- Fix for default zones on 10k
- Sync Brightness from 10k main unit to indicator
- Minor fix for Question dialog position

1.6.389/7038 (2021-02-26)

- Minor changes on AHRS, G force and TA pages due to RAM optimizations after implementing Flarm features on iris EFIS.
- Showing n/a instead of empty texts for obstacle DB and exp. date.
- Added one short beep on printscreen grab.
- ACZ instead of GFX in IGC file.

1.6.377/7015 (2021-02-19)

- New LX logo

1.6.372/7001 (2021-02-16)

- Fix for WiFi module stop working after connecting Era to Zeus

1.6.308/6845 (2020-12-10)

- Fix for DeleteAllBin password feature - ignoring letter case
- Implemented preserving private key on internal SD format

1.6.257/6760 (2020-10-23)

- Reenabling Vne and Stall warnings.
- Possible fix for StatusHeader on 10k (all icons shown over each other on the left side - as reported by Luka R.).
- Different icons for each aircraft type on Flarm radar page.
- Flarm info line with bigger numbers.
- Showing non-directional targets.
- Fix for wrong flrm object positions if distance unit was NM.
- Improved reading flarm data from custom file (more responsible flarm list menu).
- Fixed "Surface" font size in waypoint details dialog.

1.6.229/6697 (2020-10-02)

- Fix for deselecting ATP/TP/AS.

- Workaround for problem with settings corruption on update from older versions.
- Fix for FlarmID and other Flarm info not being shown on 2nd seat devices.
- Fix for SC speed not be able to change.
- Fix for settings initialization (Some glider settings were not initialized).
- Say altitude in climb and/or descent implemented.
- Say T AVG changed to AVG in thermal.
- Fix for Warnings > Altitude settings (step dependant on unit used).

1.6.191/6622 (2020-09-01)

- SENS broadcast sentences (LXBC) not being send out on BT
- Fix for setting QNH via LXDT,SET,MCBAL which was causing device crash
- Fix for broadcasting LXDT,ANS,SENS instead of LXBS,SENS via Bluetooth.
- Graphic fixes for Eos 80
- SSL certificates implemented on Odin. Certificate files are included in LXU from this version on.

1.6.171/6550 (2020-08-05)

- Minor fix for showing warnings on init page
- Fix for wifi status icon not shown on white theme
- Showing build number on init page and in CAN device info
- Hiding Software update in service menu on 10k vario indicator
- Hiding User/system spacers in setup on 10k vario indicator
- Email length expanded from 30 to 60 characters
- Removed Mail settings (will be only settable in Cloud)
- Added SENS broadcast to LX NMEA 2.0 protocol (OAT, voltages, inputs, SC)
- Showing Callsign instead of code in Flarm object list
- Added IGC file size parameter to LXDT,GET,FLIGHT_INFO

1.6.160/6522 (2020-07-22)

- Added LXDT sentences for setting SC/Var mode and broadcasting it on change + SC/Var mode added to LXDT,ANS,SENS sentence
- Fixed sync TP/APT to 2nd seat if received over user port (LXDT)

1.6.155/6519 (2020-07-17)

- Fix for setting flap positions (percentage always 0)
- Fix for frequency being sent to radio by NRST page
- Improvements of User port protocol (sentence for setting navigation destinations, sentence for getting and setting broadcast intervals)
- Added "Reboot now?" question when changing theme in Graphic setup.

1.6.151/6508 (2020-07-14)

- Displaying "Select from the list" instead of empty field for Select TP/APT/AS item in Transfer menu

1.6.142/6504 (2020-07-06)



- Added Watchdog reset to waypoint sort loop on NRST page (possible fix for NRST page crashes)
- Delete task on 2nd seat if deleted on 1st and vice versa if Sync on change is enabled.
- Change for changing MC, bal, bugs on 2nd seat not being sent to user port via LXDT.
- Change for not sending MC, bal, bugs during editing.
- Change for APT freq. voice not being played if new APT received from 2nd seat (sync)....
- Total and remaining distance show "—" instead of 0.0 (when route not selected)

1.6.136/6495 (2020-07-02)

- Fix for voice output stuttering if initial page finished before "Set QNH" audio has been played to the end
- Fix for BT and WiFi status icons not being shown correctly on secondary units (including digital vario indicator)
- Circling radius Nav box title renamed from "RAD" to "CIRC RAD"
- Odin version in device info production page
- Additional RAM space optimizations
- Cirrus renamed to Cirrus in glider list
- Added Flarm ID to Flarm info in Setup -> Service menu
- Showing "—" instead of false values for distance, FG, bearing and req. eff. in navboxes when no TP/APT/TSK/NRST is selected.
- Change for Brightness setting. Before it was being synchronized between 1st and 2nd seat device. Now each has individual setting.
- Fix for changing the MC values by the user port via \$LXDT,SET,MC_BAL which changed MC for the primary device only. Now it is sent to 2nd seat also.

1.6.119/6478 (2020-06-15)

- Optimizing Setup menu for saving RAM space
- AHRS page renamed from PFD back to AHRS in Pages setup
- Added language Italian

1.6.112/6457 (2020-06-10)

- Protocol extended with additional navigation and sensor data as requested by LK8000 and XC Soar developers

1.6.110/6453 (2020-06-08)

- Added password for formatting internal SD
- Fix for updating CAN units does not start if maps are disabled in settings.

1.6.102/6446 (2020-06-02)

- Fix for WiFi BT Server name (SSID) default value longer than max size in settings (issue reported by Marco)
- Fix for crashes on airspace preview

1.6.100/6441 (2020-06-02)

- Fix for "Delete all files" password not deselecting DB files.



- Fix for wrong SW version in CAN unit info
- Changed conditions for secondary device (including 10k digital vario indicators) shutdown - now it shuts down only if not in flight and without power supply.
- Added Setting to disable maps
- Added languages: German, Danish, Norwegian, Dutch

1.6.90/6423 (2020-05-27)

- Fix for aircraft icon not syncing to 2nd seat

1.6.86/6410 (2020-05-25)

- Fix for kg/min unit and minor fixes on other unit characters
- Common text file for Eos 80, Era, 10k, TM and Horizon

1.6.70/6381 (2020-05-12)

- Minor fixes: "airbreakes" -> "airbrakes"; Indicators setup reordered,

1.6.49/6367 (2020-05-07)

- Added unit mbar
- Fix for Sort by ICAO
- Minipage statistics fix for Max IAS (before it was current value)
- Added "+" and "," signs to basic keyboard (needed for flap settings)
- Fix for Battery low warning
- Fix for update more than one device over CAN
- Default task zones menu fixed (titles and item visibility)

1.4.29/6345 (2020-04-28)

- Long update file names enabled.
- AHRS page stripe widgets color fixed on white theme.
- Added "This list is empty" text to Airspace and Logbook page if list is empty.
- Added Flight Manager class for detection of flight phases and landings + corresponding NavBoxes.

Automated builds (from 2019-06-17 to 2020-04-06)

- Added cage AHRS in Setup -> Service menu
- Warnings -> Altitude renamed to Max. Altitude
- Sending shutdown command (MCS) on main unit shutdown
- Implemented flap position settings
- Improved Timezone select menu
- Added DST
- Low battery warning added
- ICAO code shown on APT/TP details page
- Added navboxes thermal avg, max in gain
- Added popup message when SSID name is changed that WiFi should be restarted for change to take effect
- Fixed map background color according to selected theme



- Default map colors set to more visible on both white and black theme
- Added remove pilot feature
- Black border added to arrows on Flarm page.
- Added option to turn off altitude warning.
- AIR Avionics ACD support.
- Added filter for most important values when saving to model.
- Added polar Technoflug Piccolo.
- Added notifications for red cross on AHRS, Flarm and navigational pages.
- Added setting for sending frequency on APT select.
- TRIG radio support.
- Multiple TP AS file selection supported.
- Selected TP/APT/AS/FlarmNET files setting moved from User to System.
- SC Switch setting moved from Vario/SC to Glider menu.
- Glider Reg Nr, Comp Id, Class settings moved from User to System.
- Improved and simplified Network setup.
- Pilot Copilot synchronization between 1st and 2nd seat (fixes problems with wrong Total mass, STF etc.)
- Task finish altitude implemented.
- New polar added Diamant 16.5
- WiFi symbol in status header coloured green if connected to WiFi.
- Added some additional characters to WiFi password keyboard.
- Ignoring AS warnings for 5 min after take-off.
- AS warning close button is settable in Setup > Warnings -> AS close button.
- Logger start speed is settable in Setup > Logger -> Start speed.
- Support for accepting and syncing mail with Zeus.
- Adding progress, info and warning messages for different states occurring during sending IGC file to email.
- Minor graphical fixes (menu icons).
- Fix for Flarm Net file deselecting on device restart
- Improved graphics.
- Improved airspace warning settings.
- Added new polars.
- Improved distance calculation for task.
- Active TP, APT and task synchronization between 1st and 2nd seat.
- Added Tail drawing on map.
- Added support for new temperature sensors.
- Sending mail implemented.
- We can now send igc file to mail address.
- We can now connect to device with flarm data and receive that data.
- Improvements for bluetooth menu.
- Minor code improvements.
- General bt/wifi improvements.
- Active TP, APT, Task and DB files (TP, APT and AS) synchronization between 1st and 2nd seat.
- Fix on AGL NavBox (showing "—" if elevation not available).



- Statistics page multi color graph and re-positioning elements.
- Display glider position on AS preview page.
- LX NMEA 2.0 protocol: added outputs for McBal, AHRS.
- Task export implemented
- Added glider icon setting
- Setup menu optimization (releases some heap and fixes random crashes)
- LX NMEA 2.0 supported on BT
- Radio commands and data output supported in LX NMEA 2.0 protocol.
- G-Micro sentences forwarding to user port/bluetooth
- Added password for GPS last fix set to currently selected TP location
- Implemented protocol for setting whole declaration from android devices (Set TP, Zones, Glider, Pilot).
- Added NMEA sentences for settings task parameters (AAT time, finish alt), Mc, bal, bugs etc.
- Say avg. vario in thermal (once every turn)
- Added navbox circling radius
- Added navbox effective thermal avg
- Implemented sending task declaration to Flarm device on edit task in menu, received over BT or user port and import from SD

Version 1.0.10 (2019-03-08)

- Updated fonts.
- Navbox select shortcut added in setup menu.
- Navbox icon colour same as text colour.

Version 1.0.04 (2019-01-25)

- Added progress bar for map loading.
- Unified look of red cross for invalid data.
- General code improvements.
- Steering refresh rate improved.
- Added confirmation when deleting task.
- Added white on black colour palette.
- Restarting task if start conditions are met again while on first leg.
- Added battery and OAT indication.
- Selectable navbox menu added.

Version 0.5 (2018-11-14)

- Color palette changed for visibility (from turquoise to green).
- Improvements to airspace warnings.
- General code improvements.
- AHRS page improved.
- General GUI improvement.
- Flarm info added to GPS info page.
- Flarm error popups added.

Version 0.3 (2018-10-01)



- Ability to turn off APT and TP names added.
- Improved airport icons.
- Airspace manager added.
- General GUI improvements.
- Wifi and Bluetooth dialogs added.
- Improved icons.

Version 0.2 (2018-09-07)

- General GUI improvements.
- Improved quick setup.
- Added start and finish task turnpoints.
- Added quick next/previous buttons in edit zone.
- Task preview added.
- Active task indication.
- Distances added to navigation pages.
- Competition manager added.
- Waypoint details page added.
- Added themes.
- Logbook details page updated.
- Filtering and sorting airports and turnpoints added.
- Improved text position on maps.

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