FLARM Firmware Release Notes

Published 31 October 2023

Updates and Interoperability

Every FLARM device must be updated with the latest firmware version at least every 12 months to avoid firmware expiration. This will also ensure interoperability with all other FLARM devices. Make sure to enter the update schedule into applicable maintenance documentation.

If you haven't updated your device within the last 12 months, do so before your next flight. Also check the document "FTD-073 Instructions for Continued Airworthiness (ICA)" on https://flarm.com/support/manuals-documents/ or the corresponding ICA from the manufacturer of your device.

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Version 7.22

Published 31 October 2023

Platforms	All PowerFLARM, Atom and Classic FLARM-based devices
Build	6076cde9d
Expiration	Not operational after 28 February 2025

Changes since 7.21

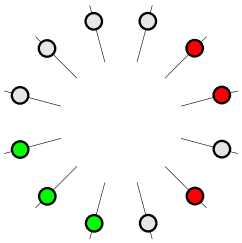
Enhancements

- PowerFLARM: Reduce false alerts from undirected Mode S targets from very strong ownship signals.

Fixes

- Classic: Fix SD card configuration issues.

Note: On Classic FLARM, the firmware version is indicated as shown in the graphic below:



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Version 7.21

Published 12 May 2023

Platforms	All PowerFLARM-, Atom and Classic FLARM-based devices
Build	050d97247
Expiration	Not operational after 31 October 2024

Changes since 7.20

Enhancements

- PowerFLARM and Atom: Semantics of `$PFLAC,R,LIC` updated, see FTD-014 for more details.

Fixes

- PowerFLARM and Atom: Received aircraft positions not decoded correctly on the southern hemisphere after March 2024.
- PowerFLARM OEM: Fixed issue with FLARM sporadically inoperative on lxnav LX90xx/LX80xx when HAWK active.

Known Issues

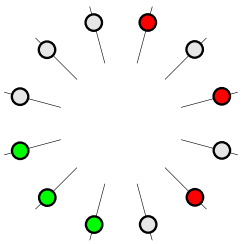
On Classic FLARM, configuration via FLARMCFG.TXT file on an SD card yields an error.

It is recommended to:

a) apply configurations either through FLARMtool or with an older firmware version installed on the device, and

b) remove FLARMCFG.TXT from the SD card used to read out flight records.

Note: On Classic FLARM, the firmware version is indicated as shown in the graphic below:



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Version 7.20

Published 3 March 2023

Platforms	All PowerFLARM--based devices
Build	4532e174a
Expiration	Not operational after 30 June 2024

Changes since 7.09

Fixes

- PowerFLARM: Maintenance release

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Version 7.09

Published 14 November 2022

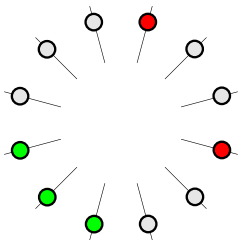
Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	0066993ec
Expiration	Not operational after 29 February 2024

Changes since 7.08

Fixes

- PowerFLARM OEM: Fixed issue with lxnav LX90xx/LX80xx not working when HAWK active.

Note: On Classic FLARM, the firmware version is indicated as shown in the graphic below:



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Version 7.08

Published *1 September* 2022

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	716185bc9
Expiration	Not operational after 31 January 2024

Changes since 7.07

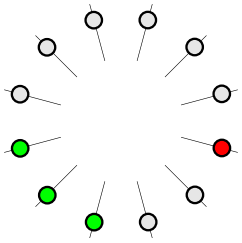
Enhancements:

- PowerFLARM Portable: Add Dataport Version selection in User Interface.
- PowerFLARM: Obstacle alarms are suppressed when on ground.

Fixes

- PowerFLARM: Flight records were not cleaned up in temporal order, i.e. oldest record being deleted first. This could lead to missing IGC records.
- PowerFLARM: Reject all invalid configurations in `$PFLAC,S,NMEAOUT`.

Note: On Classic FLARM, the firmware version is indicated as shown in the graphic below:



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Version 7.07

Published *11 May* 2022

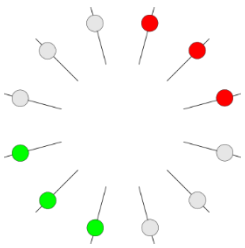
Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	8f58f4f5e
Expiration	Not operational after 30 November 2023

Changes since 7.06

Fixes

- PowerFLARM and Classic FLARM: Maintenance release

Note: On Classic FLARM, the firmware version is indicated as shown in the graphic below:



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Version 7.06

Published *26 January* 2022

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	b6811a5b6
Expiration	Not operational after 30 September 2023

Changes since 7.05

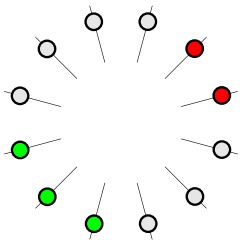
Enhancements

- PowerFLARM Portable: Add 115’200 bps and 230’400 bps settings in the User Interface.

Fixes

- PowerFLARM Core and Portable: In rare instances, a 0x2A ("XPDR receiver") error did occur when the device had been left running for a long time.

Note: On Classic FLARM, the firmware version is indicated as shown in the graphic below:



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Version 7.05

Published *6 October* 2021

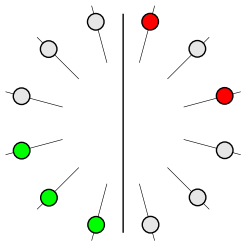
Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	421df442f (PowerFLARM), cdb124c (Classic FLARM)
Expiration	Not operational after 30 April 2023

Changes since 7.04

Enhancements

- PowerFLARM OEM: Add support for ADS-R and TIS-B rebroadcast services (USA only; requires 1090 module).
- PowerFLARM: Avoid jumps in altitude for TIS-B targets by prioritizing barometric altitude.

Note: On Classic FLARM, the firmware version is indicated as shown in the graphic below:



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Version 7.04

Published 10 May 2021

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	f746001a7
Expiration	Not operational after 1 February 2023

Changes since 7.03

Enhancements

- PowerFLARM Fusion and PowerFLARM OEM: New data port traffic and alarm simulator for testing the installation of FLARM displays, EFBs, and flight computers.
- PowerFLARM Fusion: Support for Garmin TIS protocol on both data ports.
- PowerFLARM: Dynamic Random ID for improved privacy and anti-leeching in gliding competitions.
- Classic FLARM: Head-on (±15°) traffic and collision warnings Level 1 are indicated with two active forward LEDs to avoid an incorrect pilot decision due to crosswind influence (see visualization below).
- PowerFLARM: Garmin TIS protocol no longer overrides the baud rate automatically; needs to be set to 9600 manually.

Fixes

- PowerFLARM Fusion: No aircraft were output on GDL 90, Bluetooth, TCP, and the traffic monitor if D-sub baud rate was set to less than 19200.
- PowerFLARM Fusion: Occasional warnings could be generated from the own transponder.
- PowerFLARM Fusion: Audio out (pin 1 on D-sub connector) was not functional.
- PowerFLARM Fusion: RX LED was not active when ADS-B or Mode-S traffic was received (but no FLARM traffic).
- PowerFLARM Core and Portable with 1090 receiver: Error 2A “XPDR receiver” was issued for a valid ICAO address with leading zeros (e.g. South Africa).
- PowerFLARM with 1090 receiver: The correct aircraft type is now output for all ADS-B aircraft.
- PowerFLARM: IDs in `$PFLAU` data port sentence with leadings 0s are now consistently 6 characters long.

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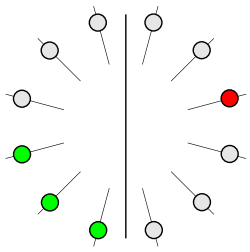
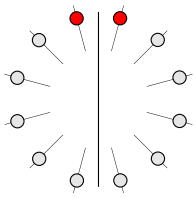
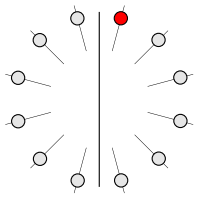
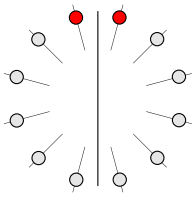
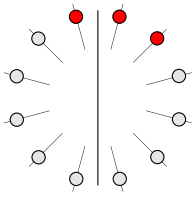
- PowerFLARM: The reply to `$PFLAC,R,TASK` now includes a terminating line; see FTD-014.
- PowerFLARM Portable: 'ADSR' license was not shown on the license screen.

Note: On Classic FLARM, the firmware version is indicated as shown in the graphic below:



Note: Head-on (±15°) traffic and collision warnings on Classic FLARM F6–F9 are indicated as shown in the graphic below (the traffic in this example comes from +5° relative bearing).

	New	Old
Alarm Level 1		
Alarm Level 2 (no change)		
Alarm Level 3 (no change)		

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Version 7.03

Published 8 January 2021

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	2a5caea1f
Expiration	Not operational after 30 September 2022

Changes since 7.02

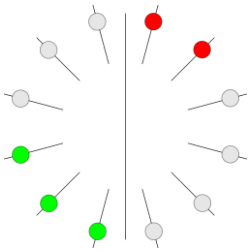
Enhancements

- PowerFLARM: Add support for ADS-R and TIS-B rebroadcast services (USA only; requires 1090 module). Licenses for Core and Portable can be purchased in the web shop; for PowerFLARM Fusion it is included.
- Details: https://flarm.com/products/product-add-ons/ads-r-tis-b/

Fixes

- PowerFLARM with 1090 module, USA only: In some rare cases, a non-directional alarm may erroneously be issued. Applies to firmware version 7.00 until 7.02 only.

Note: On Classic FLARM, the firmware version is indicated as shown in the graphic below:



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Version 7.02

Published 5 November 2020

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	75c2063a3 (PowerFLARM), 24f7392ee (Classic FLARM)
Expiration	Not operational after 30 June 2022

Changes since 7.01

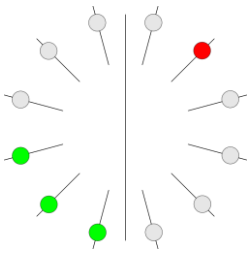
Enhancements

- Introduced support for PowerFLARM Fusion devices.

Fixes

- PowerFLARM: Configuration files were processed even when not ending with ".txt".
- PowerFLARM: "$PFLAC,S,ID,<value>" setting was accepted even when the given value was not a valid ICAO address, leading to a configuration error on next startup.
- PowerFLARM: In case of a full flight recorder (40 individual flights), the oldest flight could not be read out.
- PowerFLARM: When attempting to update an external Butterfly display with a long filename, the device never enters normal operation.

Note: On Classic FLARM, the firmware version is indicated as shown in the graphic below:



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Version 7.01

Published 23 July 2020

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	c39cac33a (PowerFLARM), edb27509e (Classic FLARM)
Expiration	Not operational after 28 February 2022

Changes since 7.00

Enhancements

- PowerFLARM: Improved robustness of CARP radio signal recording and reporting, e.g. to better visualize the receive (RX) range.
- PowerFLARM: IGC flight recording settings (Pilot name, etc.) are now empty by default instead of the word "unknown".
- PowerFLARM: The `XPDR` (transponder type) configuration item can only be set to Mode-S if a valid 24-bit ICAO aircraft address (`ID` configuration item) has been configured. Trying to configure the transponder type as Mode-S will generate an error if the ID configuration item has not already been set to a valid ICAO address. If configuring using a configuration file, ensure that the `ID` item comes before the `XPDR` item (which is the case when using the online configuration tool).
- PowerFLARM: Addition of date/time and CARP data to debug log files for improved support.

Fixes

- PowerFLARM: Own Mode-C signal is now suppressed correctly. This only applies if Mode-C processing is enabled (`MODEC=1`).
- PowerFLARM: Missing `$PFLAC` configuration values now return an error instead of silently assigning 0 as the value.
- Classic FLARM: Added missing north and east speed calculations to `$PFLAG` sentence (only relevant for developers).
- Classic FLARM: Fixed invalid NMEA checksum for `$PFLAP,A` responses (only relevant for developers).

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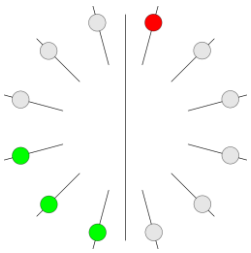
Note: On Classic FLARM, the firmware version is indicated as shown in the graphic below:



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Version 7.00

Published 19 March 2020

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	0124db65d (PowerFLARM), 92e6098a6 (Classic FLARM)
Expiration	Not operational after 31 October 2021

Changes since 6.82

Enhancements

- PowerFLARM: Suppress warnings in tow plane from ADS-B-only glider
- PowerFLARM: Support for GPT and exFAT on USB flash drives and SD cards
- PowerFLARM: Added data port baud rates: 115,200 and 230,400 (see FTD-014)
- FLARM Atom: Received signal strength (RSSI) added to $PFLAA for FLARM signals
- PowerFLARM: Update of ADS-B/Mode-S receiver firmware
- PowerFLARM: Experimental TIS-B/ADS-R support (needs license, US only)

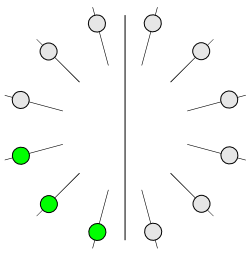
Fixes

- PowerFLARM: IGC task declaration was not valid under some conditions (no GPS, no reset between declaration and flight)
- PowerFLARM: IGC files now have the correct creation/modification date set on readout

Know Issues

- PowerFLARM Core/Portable: Own Mode-C signal is not suppressed correctly. This may lead to the own aircraft being shown on the display as an undirected target. Only applies if Mode-C processing is enabled (MODEC=1 in configuration file).

Note: On Classic FLARM, the firmware version is indicated as shown in the graphic below:



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Version 6.83

Published 19 March 2020

Platforms	PowerFLARM Core and PowerFLARM Portable
Build	5f33b5d52
Expiration	Not operational after 31 October 2021

Changes since 6.82

Fixes

- PowerFLARM Core/Portable: Allow downgrade from Version 7.00. See section on *Known Issues* for Version 7.00 if this is needed.

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Version 6.82

Published 19 December 2019

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	5160cc420 / 2a33be7d1
Expiration	Not operational after 31 May 2021

Changes since 6.81

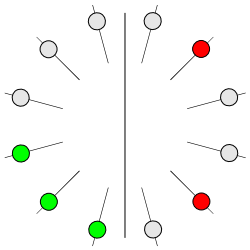
Enhancements

- PowerFLARM: Added textual version information at startup on the data port

Fixes

- PowerFLARM: Fixed incorrect error code in reply to $PFLAE,R
- PowerFLARM: Continuous Range Analysis data was missing in IGC File output when device was not properly shut down
- Atom: Fixed rare issue with startup at cold temperatures
- PowerFLARM OEM: Incorrect non-directional target output on data port

Note: On Classic FLARM, the firmware version is indicated as shown in the graphic below:



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Version 6.81

Published 27 August 2019

Platforms	PowerFLARM Core
Build	211d276bd
Expiration	Not operational after 31 January 2021

Changes since 6.80

Fixes

- PowerFLARM Core: Fixed a bug where the LED would not change from amber to green after startup, even with 3D GPS position and when no errors were present

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Version 6.80

Published 30 July 2019

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	b1c88a304 (PowerFLARM), 07ec1aba2 (Classic FLARM)
Expiration	Not operational after 31 January 2021

Changes since 6.67

Enhancements

- PowerFLARM: Data port support for Version 9 (see FTD-012):
  - $PFLAA: Added fields for signal source (FLARM/ADS-B/TIS-B/etc.) and signal strength.
  - $PFLAE: Added query to list (transient) errors after device initialization
- PowerFLARM: Introducing continuous RF range statistics $PFLAN (see FTD-012)
- PowerFLARM: New flexible software customization scheme added

Fixes

- PowerFLARM: Fixed a bug with wrong replies to a $PFLAI command
- Classic FLARM: Maintenance release

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Version 6.67

Published 04 March 2019

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	a072808ac
Expiration	Not operational after 31 October 2020

Changes since 6.63

Enhancements

- PowerFLARM: Suppress warnings from tow aircraft equipped with ADS-B Out, but not FLARM
- All: Info Alarms/traffic advisories in saturated situations are moderated such that they can no longer be mistaken as full traffic alarms

For OEMs/Integrators

- PowerFLARM OEM: Fixed external navigation injection ($PFLAG) not working in January

Fixes

- PowerFLARM: Filesystem issue that prevented firmware updates in rare occasions
- PowerFLARM: Alert Zone Generators: AZNFROM and AZNUNTIL settings are no longer persisted

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Version 6.63

Published 31 October 2018

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	07d10ec6e
Expiration	Not operational after 31 May 2020

Changes since 6.62

Fixes

- PowerFLARM: Unreliable ENL sound reception.

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Version 6.62

Published 16 October 2018

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	abb00d962
Expiration	Not operational after 31 May 2020

Changes since 6.60

Enhancements

- All devices: Compliance with new IGC specification for flight recorders from 2016/04
- PowerFLARM: Improved flight recording for UAVs, helicopters and balloons

Fixes

- PowerFLARM: Could not retrieve IGC flight record when an empty task was declared

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Version 6.60

Published 11 July 2018

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	acc16f4eb
Expiration	Not operational after 31 January 2020

Changes since 6.42

Enhancements

- PowerFLARM: Improved data fusion of mixed FLARM/ADS-B targets
- PowerFLARM: $PFLAA output of ADS-B targets sorted by distance
- PowerFLARM: Invalid commands sent over the data port do not trigger diagnostic output. Mitigates issues with data port stalling in some setups, e.g. SN10
- PowerFLARM: Throttle output of excessive diagnostic messages on serial ports
- PowerFLARM: THRE configuration is no longer overridden by ACFT, see FTD-014
- PowerFLARM Portable: Blank display duration during startup shortened
- All devices: Targets with no-track enabled are output on data port if very close, even when own aircraft is stationary/hovering, see FTD-012

For OEMs/Integrators

- PowerFLARM: Added “Force Flight State” command, see FTD-014
- PowerFLARM: Added status message $PFLAJ, see FTD-012
- Application Module: Support for 1090 Receiver Module
- Application Module: Support for device model configuration for e.g. IGC file output

Fixes

- PowerFLARM: Capabilities are properly output in the device log
- LXV, LXV_FM and LXV_FM_IGC devices: Fixed unrealistic targets
- PowerFLARM: Fixed firmware update when using macOS. This fix will be active once the device is running firmware version 6.60 or higher
- All devices: Correct alarm type (“no alarm”) in $PFLAU when towing or being towed

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Known issues

- Because of the method previously used by PowerFLARM-based devices to validate firmware files, only one firmware file (.fw) may be present on the USB stick or SD card. If more than one firmware file is present, the update might not work, with no error message given. The only symptom will be that the device will continuously restart, as long as the USB stick or SD card is in the device. Therefore, make sure that only the latest firmware file is present on the USB stick or SD card when updating to version 6.60. For future updates, this issue has been solved (see under "Fixes" above").
- When downloading/saving the firmware file on a Mac computer, because of the non-standard way in which macOS saves file metadata, a second hidden .fw file will be saved and consecutively copied to the USB stick or SD card. This may cause the problem described above. There are two different ways to mitigate the problem:
  1. If you are familiar with the Terminal, you can delete the improper file by using the dot_clean command, as described on the following page: goo.gl/CG9BGh
  2. If you are not familiar with the Terminal, use a PC to copy the firmware file to the USB stick or SD card

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Version 6.42

Published 06 November 2017

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	1f59603
Expiration	Not operational after 31 October 2019

Changes since 6.41

Fixes

- PowerFLARM: Fixed an issue with suppressing ADS-B targets with a lower altitude, based on the ADSBVRANGE configuration setting
- PowerFLARM Portable: Fixed an issue where the screen would rarely remain white after start-up
- Classic FLARM: Maintenance release

Known issues

- Because of the method used by PowerFLARM-based devices to validate firmware files, only one firmware file (.fw) may be present on the USB stick or SD card. If more than one firmware file is present, the update might not work, with no error message given. The only symptom will be that the device will continuously restart, as long as the USB stick or SD card is in the device. Therefore, make sure that only the latest firmware file is present on the USB stick or SD card.
- When downloading/saving the firmware file on a Mac computer, because of the non-standard way in which macOS saves file metadata, a second hidden .fw file will be saved and consecutively copied to the USB stick or SD card. This may cause the problem described above. There are two different ways to mitigate the problem:
  1. If you are familiar with the Terminal, you can delete the improper file by using the dot_clean command, as described on the following page: goo.gl/CG9BGh
  2. If you are not familiar with the Terminal, use a PC to copy the firmware file to the USB stick or SD card

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Version 6.41 (Classic FLARM)

Published 08 September 2017

Platforms	Classic FLARM-based devices
Build	36bffda6
Expiration	Not operational after 31 January 2019

Changes since 6.40

Fixes

- Classic FLARM: Fixed an issue where a not configured device uses a wrong FLARM ID

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Version 6.40

Published 23 August 2017

Platforms	All PowerFLARM- and Classic FLARM-based devices
Build	00cecdb
Expiration	Not operational after 31 January 2019

Changes since 6.09

Enhancements

- PowerFLARM: New intuitive obstacle warning behavior
- PowerFLARM: Fully symmetric antenna diversity, dynamic receive and transmit on both antennas (except USA and Canada)
- PowerFLARM: Firmware update possible via data port (relevant for developers only)
- PowerFLARM: License and obstacle database update possible via data port (relevant for developers only)
- Introduced new setting to query firmware expiration date: `$PFLAC,R,SWEXP`
- PowerFLARM: Obstacle ID (unique for specific database version) available in `PFLAU` (requires data port version 8 or higher)
- Introduced supplementary privacy option (all devices except F4)
- Introduced no track setting information in `PFLAA` in data port version 8 and higher
- PowerFLARM: Introduced ground station license (GND)

Fixes

- Classic FLARM: Disallow unit to continue after GPS configuration failure
- Classic FLARM: Software expiration warning behavior

Known Issues

- Classic FLARM: If ID was configured incorrectly in the past, ID changes to 0xFFFFFF. Reconfiguring ID to any valid type and ID or restoring to defaults solves the issue.

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Version 6.09 (PowerFLARM)

Published 20 April 2017

Platforms	PowerFLARM devices (PowerFLARM Core, PowerFLARM Portable)
Build	f07a879
Expiration	Not operational after 30 Sep 2018

Note: PowerFLARM devices with the obstacle database Alps 2017 installed or/and with error code 0x91 (Flight Recorder Error) must update to this version to be able to record data (IGC logger functionality) after the memory is full.

Changes since 6.08

Fixes

- PowerFLARM: Fixed a flight recording issue (error 0x91) when Alps 2017 obstacle database is installed

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Version 6.09 (Classic FLARM)

Published 10 March 2017

Platforms	Classic FLARM devices including OEM FLARM devices
Build	d4ec337
Expiration	Not operational after 30 Sep 2018

Changes since 6.08

Fixes

- Classic FLARM: $GPGGA NMEA sentence now available on data port

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Version 6.08

Published 28 February 2017

Platforms	All FLARM and PowerFLARM devices including OEM FLARM devices
Build	0a62df4
Expiration	Not operational after 30 Sep 2018

Changes since 6.07

Enhancements

- Changes in Alert Zone (AZN) alarm behavior:
- On entering the zone: Alarm is repeated 3 times every 12 seconds. Alarm duration is 4 seconds
- After the first 3 alarms, while still in zone: Alarm is repeated every 60 seconds
- PowerFLARM: New serial command to test audio out ($test,audio)
- PowerFLARM Core: Maximum allowed supply voltage increased to 32V
- Changes to the 'No track' configuration setting while flying are recorded to the IGC file
- Faster automatic detection of GPS leap second after startup

Fixes

- PowerFLARM: RANGE configuration setting handles unlimited range correctly
- PowerFLARM Portable: Airplane type 'Unknown' can no longer be selected on display

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Version 6.07

Published 09 September 2016

Platforms	All FLARM and PowerFLARM devices including OEM FLARM devices
Build	5a5905f
Expiration	Not operational after 31 Mar 2018

Changes since 6.06

Enhancements

- Increased the maximum distance to other aircraft that is transmitted to FLARM Compatible displays from 32 km to unlimited.

Fixes

- Minor fixes.

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Version 6.06

Published 06 April 2016

Platforms	All FLARM and PowerFLARM devices including OEM FLARM devices
Build	8244, 8249
Expiration	Not operational after 30 Sep 2017

Changes since 6.05

Enhancements

- IGC license activated for all PowerFLARM Core devices purchased on or after 1 February 2016
- Minor enhancements

Fixes

- Added error message for incorrect ID configuration (error code 43)
- PowerFLARM Portable: Display brightness can no longer be set to a value lower than 10%
- Minor fixes

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Version 6.05

Published 4 December 2015

Platforms All FLARM and PowerFLARM devices including OEM FLARM devices
Build 7862
Expiration Not operational after 31 Mar 2017

Changes since 6.02 / 6.01

Enhancements

- User configurable ICAO aircraft address excludes some invalid values.
- More robust handling of duplicate IDs caused by user configuration.
- Added track in $PFLAA when stealth mode is active.
- Improved glider tow detection for less nuisance alarms.
- Record more diagnostics information in IGC files.
- PowerFLARM: ADS-B warnings can now be disabled by configuration.
- Classic FLARM including OEM FLARM devices: Changed default horizontal range to maximum value of 25’000 m.

Fixes

- GPS leap second updated.
- Classic FLARM including OEM FLARM devices: Fixed radio ID if SD card was inserted during flight while ID configuration set to automatic.
- Classic FLARM including OEM FLARM devices: Fixed nuisance warnings when erasing obstacle database from the memory.
- PowerFLARM: Reintroduced audio out beep at startup.
- Fixed incorrect date in IGC file in some rare cases.
- PowerFLARM: Fixed IGC file naming regardless of license type: use ‘G’ for IGC-approved devices and ‘X’ for other devices.
- Fixed CM2 header in IGC file.

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Version 6.02

Published 1 April 2015

Platforms All FLARM and PowerFLARM devices including OEM FLARM devices
Build 7592
Expiration Not operational after 31 Mar 2017

Changes since 6.01

Fixes

- The AZN licenses can be now installed.
- Problem with setting correct aircraft type using PowerFLARM Portable display was solved.

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Version 6.01

Published 18 March 2015

Platforms All FLARM and PowerFLARM devices including OEM FLARM devices
Build 7571
Expiration Not operational after 31 Mar 2017

Changes since 6.00

Fixes

- Device ID for radio communication was computed incorrectly on some devices if configured to automatic. Only LX06, LX06_FR and LX_IGC08 devices are affected.

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Version 6.00

Published 13 March 2015

Platforms All FLARM and PowerFLARM devices including OEM FLARM devices
Build 7560
Expiration Not operational after 31 March 2017

Applicability

All FLARM, PowerFLARM and FLARM-compatible devices must upgrade.

Changes since 3.41 / 5.14

Enhancements

- Increased position accuracy in radio protocol for increased performance and less nuisance alarms.
- Increased maximum range in radio protocol to >300km. New PowerFLARM devices have significantly higher transmit power and receiver sensitivity, requiring support for increased maximum range.
- Added opt-out option for ground tracking ("no track"). If set, receiving ground stations do not process or store position data of aircraft. Due to increased popularity of using FLARM for flight tracking and to respect privacy concerns.
- Stealth mode improved to provide increased situational awareness and prevent unfair advantages during competitions. Modifications based on IGC and other recommendations
- New behavior:

	Target is more than 2km / 300m vertical away	Target is closer than 2km / 300m vertical	Target is nearby / collision alarm detected
Target ID	Not available	Anonymous ID	Anonymous ID
Relative position	Not available	Available	Available
Relative altitude	Not available	Available with noise	Available
Climb rate	Not available	Not available	Available
Track	Not available	Not available	Available
Speed	Not available	Not available	Available

- Introducing alert zones marked by ground stations to notify pilots of active parachute dropzones, RC / RPAS / UAS flying areas or similar.

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- RF frequency band adjusted for South America. All (North-) American units can operate in South America.
- Improved Glider tow detection for less nuisance alarms.
- Record more diagnostics information in IGC files
- Configured Data Port protocol version is now stored permanently in the device
- PowerFLARM: Mode-C/S warnings can now be silenced using $PFLAC,S,PCASBEEP,0
- PowerFLARM: Audio OUT volume can now be adjusted using $PFLAC,S,AUDIOVOLUME, <percent>
- PowerFLARM: Config file will now be read from CF<C|P><SSSSS>.TXT in addition to FLARMCFG.TXT. This is useful to quickly deploy a large base of units
- PowerFLARM: Startup log will now be written to file PF<C|P><SSSSS>.TXT
- PowerFLARM: GPS signal strength will now be recorded in IGC files
- PowerFLARM: Updated grandfather feature licenses
- PowerFLARM: Reduced nuisance warnings for gliders with ADS-B Out
- PowerFLARM: Alarms will now be issued even when outside the configured FLARM range
- PowerFLARM: Improved alarm suppression when on ground
- PowerFLARM Portable: Audio is disabled when operating on batteries

Fixes

- PowerFLARM: Fixed reset loop while removing obstacle database from memory.
- Classic FLARM: IGC F-record fixed
- Fixed some Data Port sentences
- Fixed TRX devices restarting in flight
- Geography for Israel frequency use corrected
- PowerFLARM: Fixed IGC validation issue in 3.41

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