

LX Flarm units

Firmware update procedures

1 General

All Flarm units need periodically firmware update. The updates are normally carried out by users after using of **PC or SD card**. A special case will happen at the **end of February 2008**, as all Flarm units will need a compulsory firmware update; otherwise the units will not be able to operate any more. This document has been prepared to make the update campaign as much as stress less and easy. Necessary procedures and also HW requirement are described in details.

Note!

Firmware upgrade to flight recorder with **limited IGC approval** can be done exclusively through authorized personal. For more details contact your local distributor. This firmware upgrade isn't free, contrariwise to the regular update which is free.

2 How to prepare PC

A PC or laptop with **one free com port** is definitively necessary. After using of laptops without any physically com port a suitable USB to 232 adapter cable should be used. It is recommended to check the function of such a configuration before Flarm update procedure will start. Run some other application which requires com port, to check the com port.

2.1 Installation of Flarm tools

Original Flarm tool, available on www.flarm.com should be used for all updates; there is no **LX tool** available at all.

After you will enter Flarm page go on with **Support** and **Update**. Install Flarm tool 1.29 after click on **Installation**.

The screenshot shows the Flarm website's 'Updates' page. The page content includes:

- Version 3.xx is operational until the end of February 2008 and must be replaced afterwards.
- August 12, 2007: **Firmware Version 3.11**
- For updates via PC and serial cable, please remove the SD card and delete all update files (.fw) from it!
- Detailed description of changes:
 - Change from 3.10:**
 - Bug removed when switching between "NEAREST" and "WARNING" modes for all FI ADMM compatible devices.
 - Changes from 3.09 BETA:**
 - "Click" signal only with new target in "NEAREST" mode (not with old target).
 - Increase of range in "NEAREST" mode from 2 to 3 km.
 - all "small bugs" from 3.09 BETA fixed (brms jumps in IGC files, pressure sensor readouts, ...)
 - no G-recorder (IGC file validation) for Flarm04 (devices shipped in 2004)
 - Changes from 3.08:**
 - Flarm receiver selftest
 - Configuration through SD card
 - "Click" signal when target in "NEAREST" mode changes
 - Statistical data about transmission range and system performance stored in IGC file
 - Reduced obstacle waittime from 30 sec to 20 sec. Warning levels are now the same for all alarms
 - Various minor bugs fixed, especially in flight recording
- May 23, 2007: **Firmware Version 3.09 BETA** available
- This beta release is for original Flarm ONLY
- Changes from 3.08:**
 - Flarm receiver selftest
 - Configuration through SD card
 - "Click" signal when target in "NEAREST" mode changes
 - Statistical data about transmission range and system performance stored in IGC file
 - Reduced obstacle waittime from 30 sec to 20 sec. Warning levels are now the same for all alarms
 - Various minor bugs fixed, especially in flight recording
- April 17th, 2007: **Firmware Version 3.08** available
- Changes from 3.07:

On the right side, there is a 'Download' section with links for:

- Firmware v3.11 (August 12, 07)
- By serial cable: Flarmtool v1.2 with Firmware v3.11
- Initial installation (11.5 MB)
- Update Installation (1.3 MB)
- By SD card: All devices (from v3.05): flarm_311.fw (0.7 MB), Instructions SD cards
- Obstacle database: The same file for both FlarmTool and SD cards: obs20071119_obs (0.8MB, Nov 19, 2007)

A callout box labeled 'Installation' points to the 'Update Installation' link.

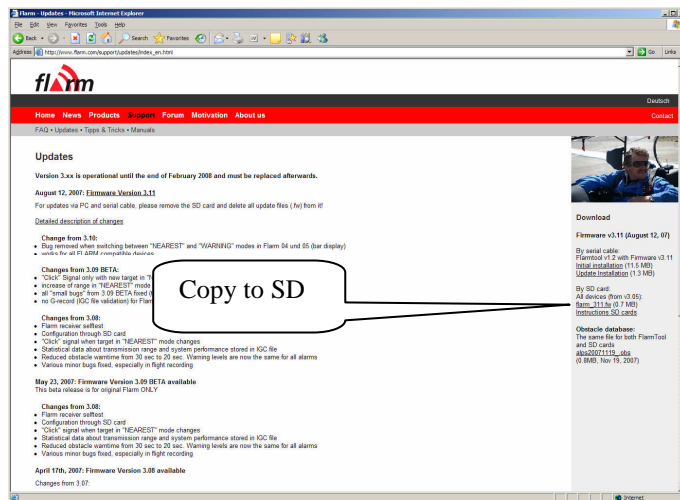
3 Update procedures

3.1 LX Red Box with SD Card (Sn. 2000 ⇔)

These units needn't be updated by PC. SD card which includes new firmware version should simple be **inserted** and the update procedure will run fully automatic, immediately after the card will be inserted into the Flarm unit.

3.1.1 Procedure

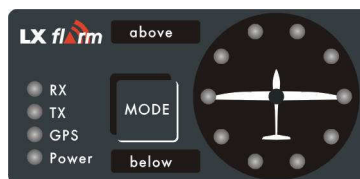
- Copy adequate file (flarm_400.fw) having extension **.fw** to SD card, use Flarm tools



- Insert SD card into Flarm Red box
- The procedure will take a **few minutes**

Note!

Power lamp of Flarm external display will flash (or will become red by dual color displays) during the procedure. As the procedure will finish a normal status of Power lamp will characterize this fact.



3.2 Red Box without SD card (Sn. 1000-2000)

This version of Red Box units' request a data transfer PC-Red Box after using of Flarm tool and appropriate cable set.

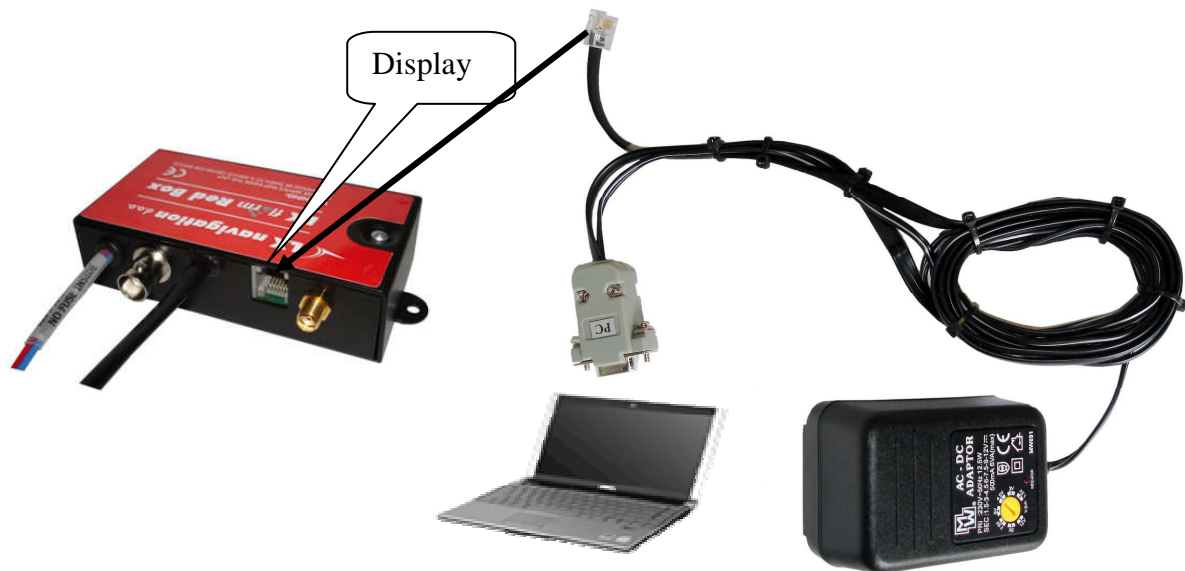
3.2.1 Cable sets

3.2.1.1 Using of Colibri power and data adapter (Ord. nr. COL AC-PC)

Every Colibri and LX 20/2000 is equipped with this kind of cable set, so there are many thousands available by Colibri and LX 20 users. The adapter can be ordered by LX Navigation after using of our **e-shop**.

Important!
Using of above mentioned cable set will also power Red Box from AC network. This configuration is therefore extremely comfortable for indoor operation.

This cable set may be also used for update of Red Box **units built into** the glider. In that case remains AC plug **unplugged**.

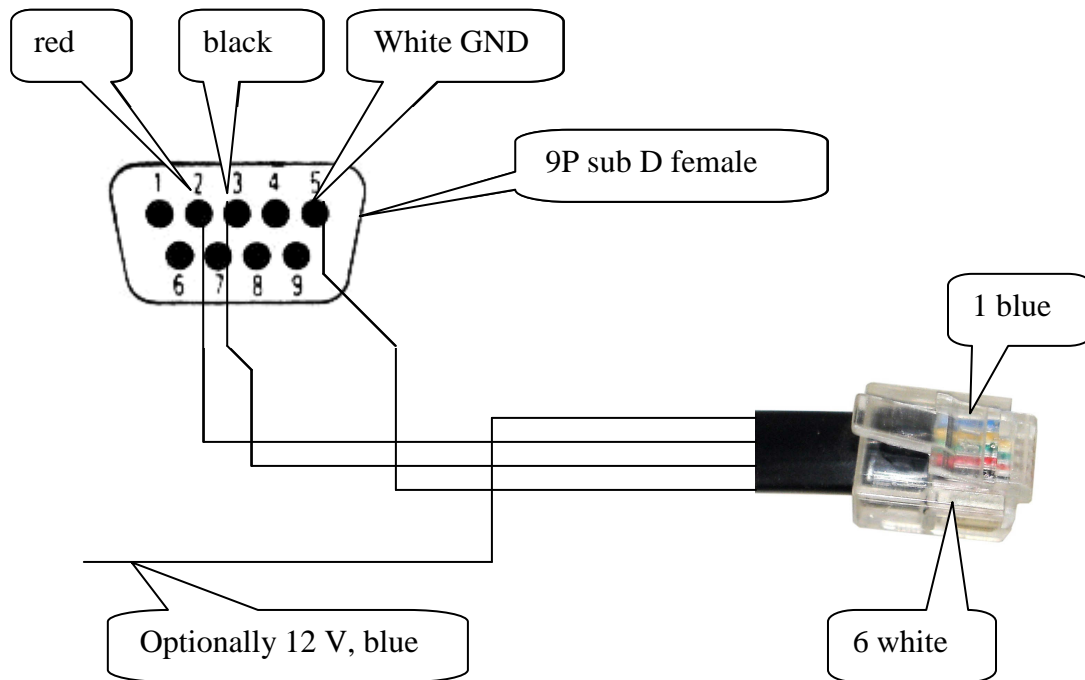


Schematics of Red Box, PC and Colibri adapter connection

Important!
Plug 6P telephone type connector into **Display** marked connector of Red Box.

3.2.1.2 LX Flarm update cable (Ord. nr. LX7-F-UD-cable)

This cable ensures data exchange **Red Box - PC** during the update procedure. This cable doesn't include power lines and therefore don't power Red Box. This configuration is suitable for field operation where Red Box receives power from the glider battery.



Detailed schematics of LX Flarm update cable

Note!
Optional 12 V and GND may be extended, wires 1 (blue) and 6 for indoor operation.

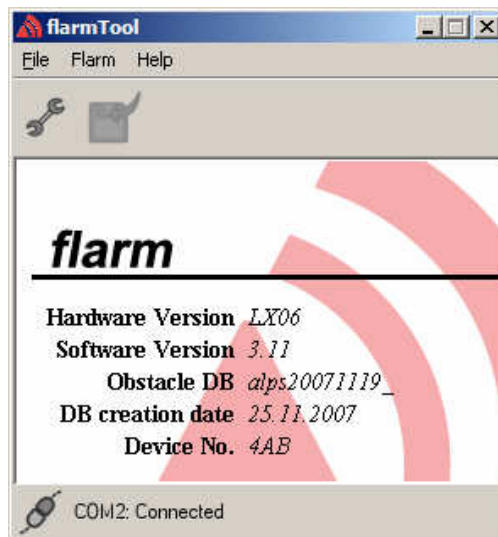
3.2.2 Procedure Nr.1 (recommended)

- **Run** Flarm tool (a free com port will be selected automatically)



Flarm tool ready on com 2

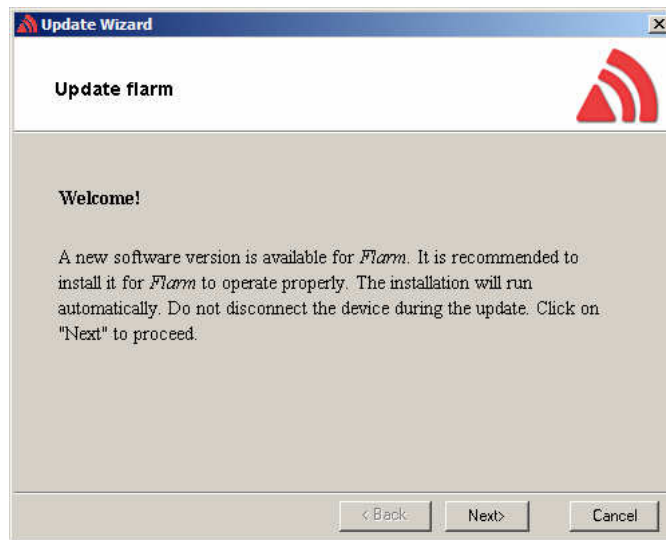
- Connect cable to **PC** (9P)
- **Remove** Flarm external display (not necessary by Mini Box)
- Plug 6P telephone connector into **Ext. Disp.** Plug of the Red Box, USB type by Colibri
- Power Flarm **ON** (not necessary after using of Colibri adapter),
- Wait until connection will be **established** (it will take up to 30 seconds)



Connect status established
(HW,FW, data base and device number visible)

Note!
If Flarm will **not connect**, close Flarm Tool and try again.

- The update procedure will start **automatically**, after successful connection
- Follow wizard on PC and wait until **Finish**

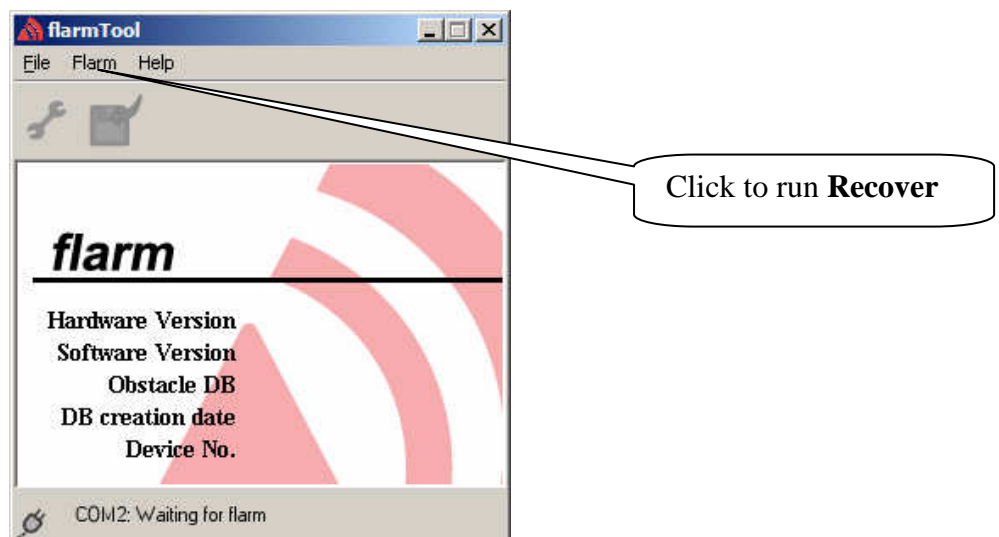


- Switch the unit **OFF**
- Connect Flarm external display and provide **functional test**

By no success use procedure Nr. 2

3.2.3 Procedure Nr.2

This procedure should be used after the first procedure **has failed**. To do this it is necessary to start so called **RECOVER** item. It is available after click on FLARM.



- Follow wizard on Flarm tool until **finish**.

3.3 Flarm Mini Box

3.3.1 Flarm Mini Box with SD card (Sn. 2000 ⇨)

See procedure under 3.1.

3.3.2 Flarm Mini Box without SD card (Sn. 1000 – 2000)

The update can be carried out exclusively after connection to PC. Recommended cable set is Colibri power and data adapter (see 3.2.1.1). Extended LX Flarm update cable can be also used.



3.3.3 The procedure

See 3.2.2.

After no success, contact producer (support@lxnavigation.si).

3.4 Colibri Flarm

All necessary cables are delivery included (Colibri adapter, Colibri Flarm update cable). Update is possible **exclusively** after data transfer Colibri Flarm - PC. **No way to update** via Colibri SD card. Colibri Flarm update cable (USB to 9P Sub D) should be used for data transfer and Colibri adapter will **only power** the unit.



Colibri Flarm, Flarm update configuration

3.4.1 Procedure Nr.1

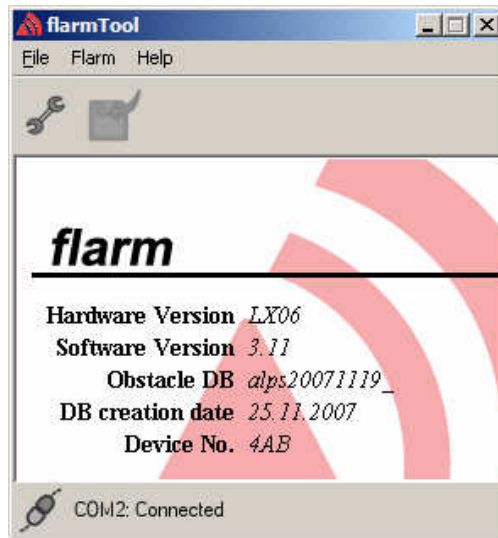
- **Run** Flarm tool (a free com port will be selected automatically)



Flarm tool ready on com 2

- **Remove** Flarm external display
- Plug Colibri update cable into PC (9P) and Flarm (USB type)

- Power Colibri ON
- Wait until connection will be **established** (it will take up to 30 seconds)

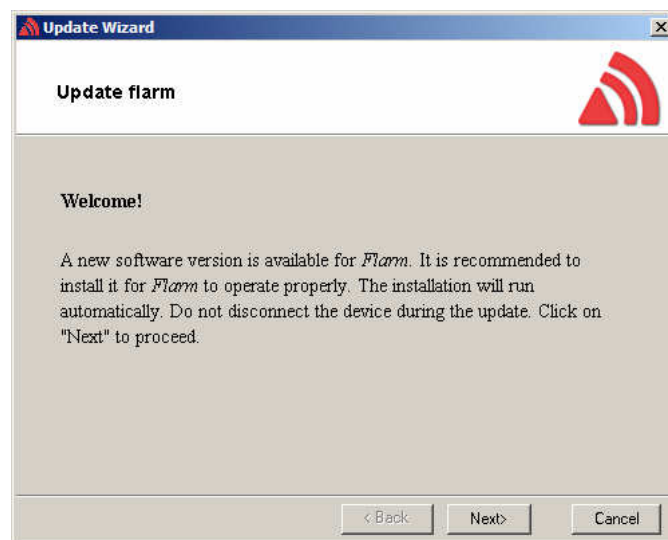


Connect status established
(HW,FW, data base and device number visible)

Note!

If Flarm will **not connect**, close Flarm Tool and try again.

- The update procedure will start **automatically**, after successful connection
- Follow wizard on PC and wait until **Finish**

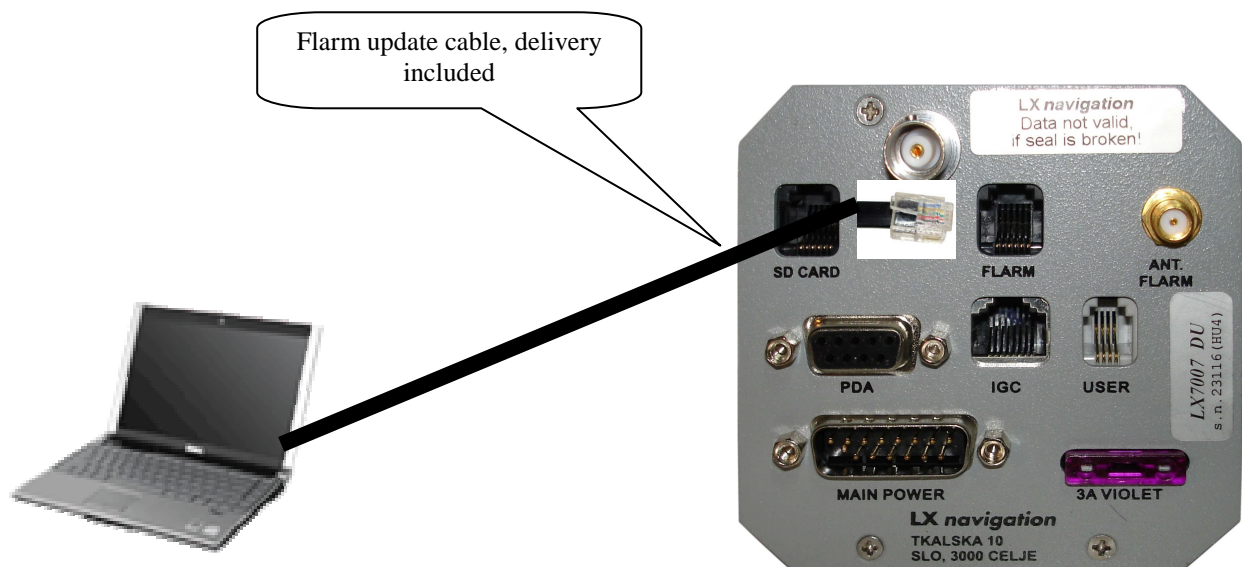


- Switch Colibri **OFF**
- Connect Flarm external display and provide **functional test**

After no success contact producer (support@lxnavigation.si)

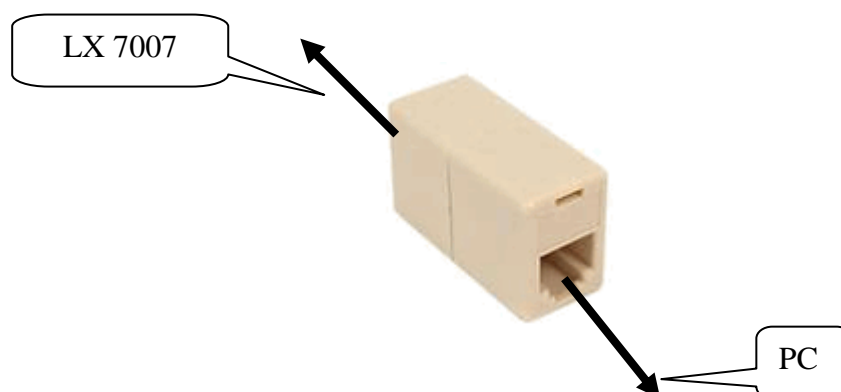
3.5 LX 7007

Flarm is a separate board integrated into LX 7007 housing. The only way to provide firmware update is to connect Flarm board with PC. A suitable **cable** designated as Flarm Update cable (Ord. nr. LX7-F-UD-cable) is delivered with **every** unit.



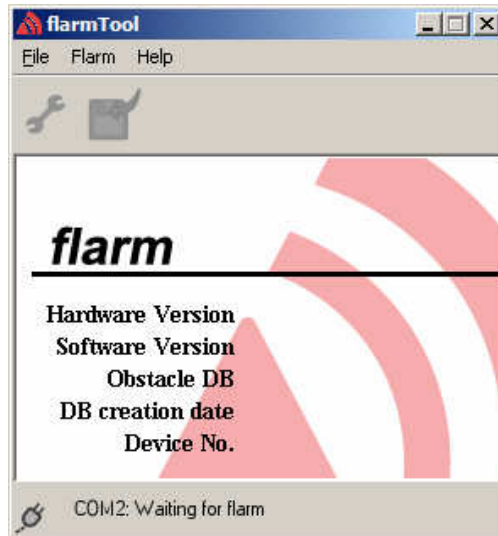
It is necessary to **disconnect** Flarm external display and to plug 6P telephone type connector of the Flarm update cable into FLARM marked socket of LX 7007.

If FLARM marked connector isn't easy to reach, use a RJ11 female to female interface which is available in nearly every telephone shop. This will make possible to connect the update cable close to the Flarm External display and this position is normally easy to reach.



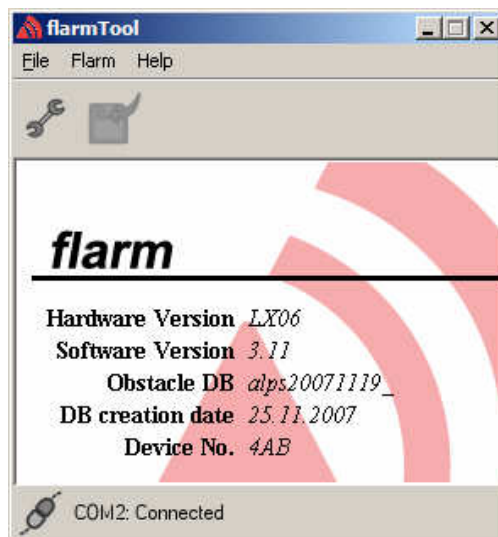
3.5.1 Procedure Nr.1

- Switch **LX 7007 ON** and wait until booting will finish
- **Run** Flarm tool (a free com port will be selected automatically)



Flarm tool ready on com 2

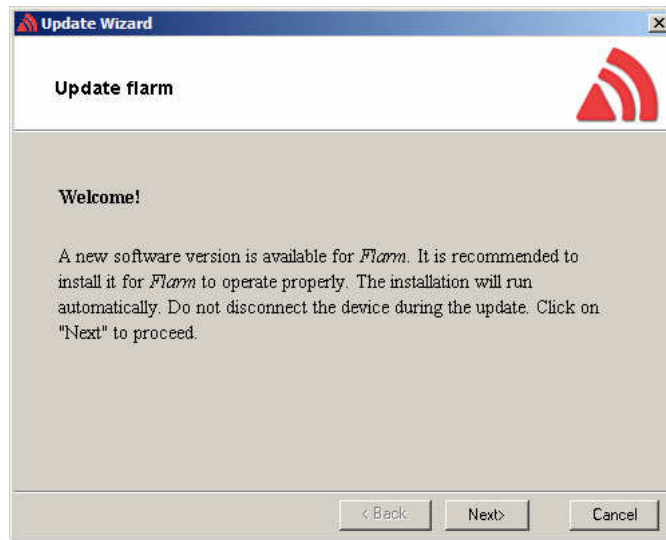
- **Remove** Flarm external display
- **Connect** Flarm update cable to **PC** (9P) and **LX 7007** (6P)
- **Wait** until connection will be **established** (it will take up to 30 seconds)



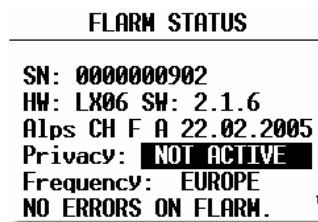
Connect status established
(HW,FW, data base and device number visible)

Note!
If Flarm will **not connect**, **close** Flarm Tool and try again.

- The update procedure will start **automatically** immediately after connection
- Follow wizard on PC and wait until **Finish**



- **Close** Flarm Tool
- Switch LX 7007 **OFF and after ON**
- **Reconnect** Flarm external display and provide **functional test**
- **Check** Flarm settings in LX 7007



- Important is **Frequency**, adjust, if wrong.

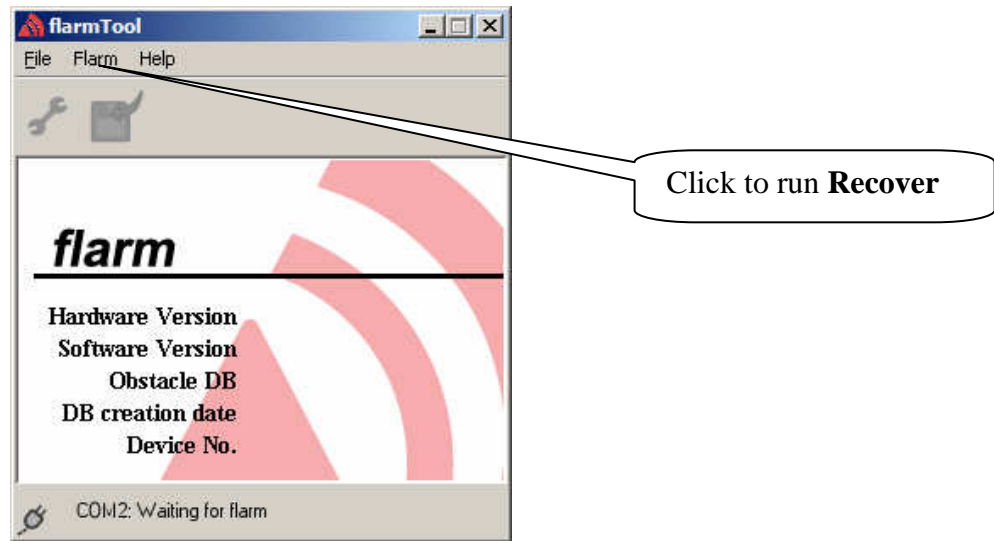
By no success use procedure Nr. 2

3.5.2 Procedure Nr.2

- Input **password 41000** on LX 7007 System Setup\Pasword
- A message window will open



- **Run** Flarm tool
- Click on **Flarm** and after on **Recover**



- Follow **Wizard**
- The update will **run automatically**
- After a PC **message** “ The device has successfully been updated” , click on **Finish**
- Press **Enter** on LX 7007
- Switch LX 7007 **off and after ON**
- **Reconnect** Flarm external display and provide **functional test**
- **Check** Flarm settings

```

FLARM STATUS
-----
SN: 000000902
HW: LX06 SW: 2.1.6
Alps CH F A 22.02.2005
Privacy: NOT ACTIVE
Frequency: EUROPE
NO ERRORS ON FLARM.

```

- Important is **Frequency**, adjust, if wrong.