Blink Marine Keypads
Firmware Update Guide

REQUIREMENTS:

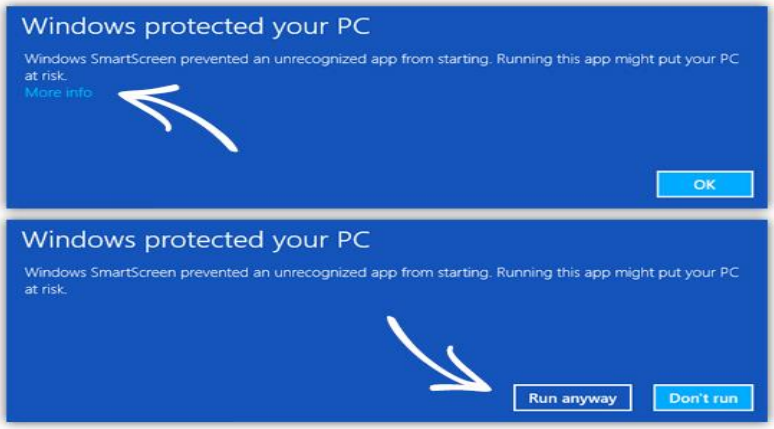
1. PC based on WINDOWS operating system (WINDOWS 10 recommended[1])
2. +12V DC power supply
3. KVASER or PEAK CAN-USB adapter
4. CAN bus monitor tool:
   CanKing for **KVASER** interface: **https://www.kvaser.com/canking/**
   PCAN-View for **PEAK** interface: **https://www.peak-system.com/PCAN-View.242.0.html?&L=1**

DOWNLOAD and SETUP:

1. Open the following link:
   https://www.dropbox.com/sh/cos588kywk0k2vu/AABGhi654fUpf7LGPy-g19gwa?dl=0
   It will show a folder containing these files:
   - Blink_Marine – Programming_Interface.exe;
   - Kvaser_drivers_installer.exe
   - PEAK_drivers_installer.exe

2. Download the drivers installer compliant with the CAN-USB interface used and save it in a folder.
3. Run the drivers installer and follow the setup procedure.

4. Download and launch the *Blink_Marine_Programming_Interface.exe*
   Some web browsers might consider the download not safe; in this case ignore the message and complete the download.
   It is a self-extracting archive that will save the files into a folder of your choice.
   WINDOWS might prevent the procedure by showing the following message:



   Click on the buttons signalled by the arrows.

5. In that folder you will find the *Blink_Marine_Programming_Interface* tool ready for use.

[1] With older WINDOWS versions the firmware update procedure might not work!

FIRMWARE UPDATE:

1. Connect the KVASER or PEAK USB-CAN interface to the PC.
2. Connect the keypad to the interface and plug in the +12V DC power supply as shown in the wiring scheme at page 4.
   Make sure no other devices are connected to the wiring and a 120Ω terminating resistor is present on the bus.
3. Open the CAN bus monitor tool (CanKing for **KVASER** interface, PCAN-VIEW for **PEAK** interface) and set the working baud rate (the default values are 125kbit/s or 250kbit/s, for CANopen or CAN J1939 protocol respectively).
   If the keypad is working with CANopen protocol, at the startup it transmits the following message:

Identifier	DLC	Message
700h + current CAN ID (default 715h)	1	00h

else the protocol used is J1939: in this case pressing any key a message like the ones shown in the table below will be displayed:

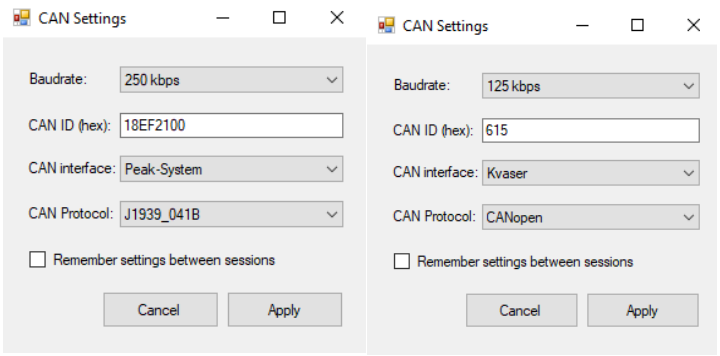
Direction	Identifier	Format	Message	Data
From Keypad	18EFFFXXh (default 18EFFF21h)	Ext	04 1B 01 XX 01 21 FF FF (BLINK header 04 1B)	Key XX pressed
From Keypad	18EFFFXXh (default 18EFFF21h)	Ext	D3 98 01 XX 01 21 FF FF (DSS header D3 98)	Key XX pressed

4. Close the application and run *Blink_Marine_Programming_Interface.exe* by double-clicking on the icon: .

5. Click on *''Settings'', ''CAN settings…''* and set the following parameters according to the information deduced from the CAN bus monitor tool[2]:
   - **CAN interface**: KVASER or PEAK-system.
   - **CAN Protocol**: CANopen, J1939_041B (for BLINK header), J1939_D398 (for DSS header).
   - **CAN ID (hex)**: 600h + current CAN ID (default 615h) for CANopen protocol; 18EFXX00h for CAN J1939 protocol where XXh is the source address of the keypad (default 18EF2100h).
   - **Baudrate**: the selected value must match the one set on the keypad.

   Click on *''Apply''* to make these settings effective.

   Examples:



[2] If these parameters are already known, the point number 3 of this section can be skipped.

6. Connect the application to the CAN bus clicking on the button *''Connect to CAN''*.
   If an error occurs, the CAN-USB interface might be busy due a CAN terminal application.

7. Press *''Load program file…''* to select the .**hex** file of the new firmware and *''Load configuration file…''* to select the .**eep** file.

8. Click on the button *''Launch Bootloader''*. If the light bulb next to the pressed button does not become green, repeat the procedure (unplug and plug the keypad to the wiring).
   CAUTION: during the bootloading phase (green light bulb) do not disconnect the cables and do not close the application until the end of the firmware update.

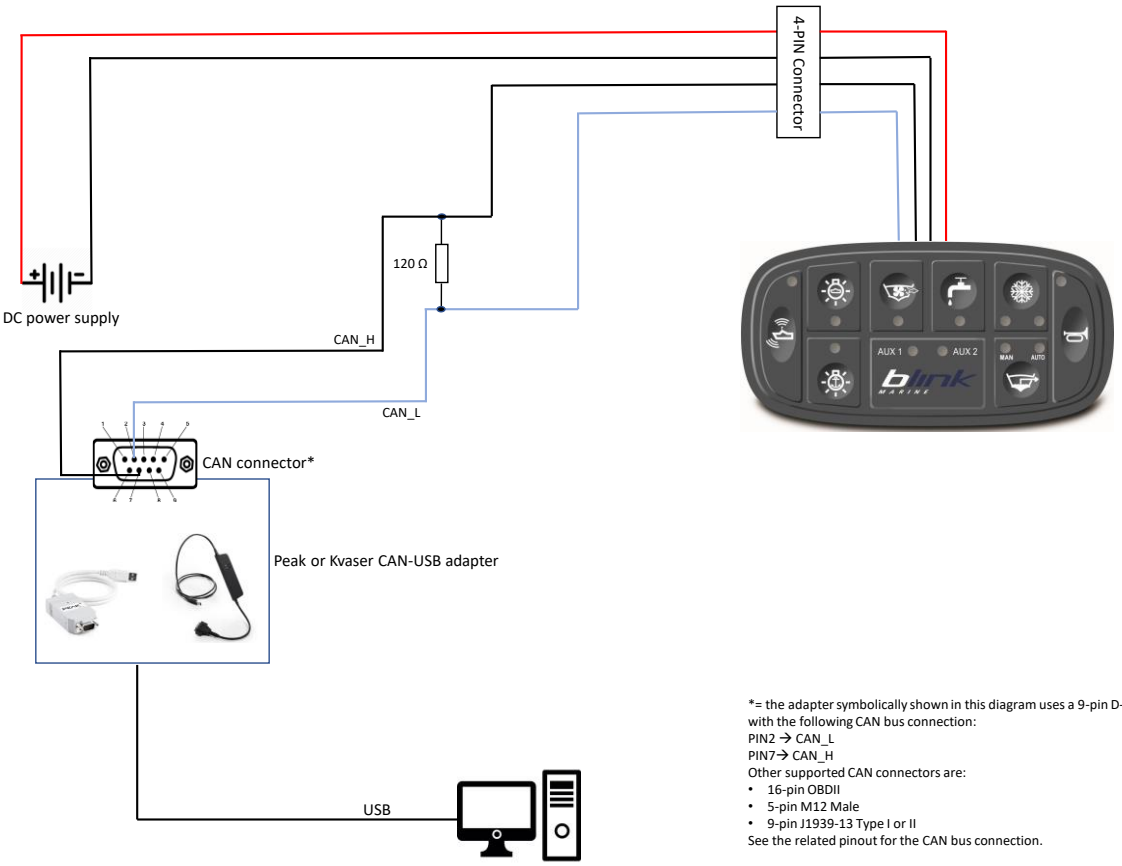
9. Click *''Download program file''* and wait for processing.
   CAUTION: if an error occurs, repeat this step, do not disconnect the cables and do not close the application until the end of the firmware update.

10. Click *''Download configuration file''* and wait for processing.
    CAUTION: if an error occurs, repeat this step, do not disconnect the cables and do not close the application until the end of the firmware update.

11. Click *''Launch Application''* to complete the update procedure and reboot the keypad.

12. Click *''Disconnect from CAN''* to disconnect the application from the CAN bus.

Wiring Scheme



*= the adapter symbolically shown in this diagram uses a 9-pin D-SUB connector with the following CAN bus connection:
PIN2 → CAN_L
PIN7→ CAN_H
Other supported CAN connectors are:

- 16-pin OBDII
- 5-pin M12 Male
- 9-pin J1939-13 Type I or II

See the related pinout for the CAN bus connection.