## FroboLay\_Scout2 Hardware

FroboLay\_Scout2 specialboard.

[| FrobomindController](http://www.frobomind.org/index.php/FMCtrl:FroboMind_Controller)

FroboLay\_Scout2 Firmware

Firmware:

## FroboMind: FroboLay\_Scout2:Protocol

RowCA protocol   
The protocol is based on NMEA 0183 [1] over a serial port.   
Serial communication  
Baudrate: 57600  
Frame length: 11 bits (N81)  
Max bytes per second: 57600/11 = 5236   
Max NMEA strings per second: 57600/11/50 = 104 (assuming a total length of 50 chars)

## FroboLay\_Scout2 Status (PFLHI) transmitted by the RowCA firmware

$PFRHI,hw\_version, firmware\_version\_Major\_Version, firmware\_version\_Minor\_Version,reset\_cause\*CS<cr><lf>  
hw\_version: The FroboLay\_Scout2 hardware version   
1. RoboCard

2. FroboMind Controller

##### firmware\_version\_Major\_Version: The FroboLay\_Scout2 major firmware version

1. FroboLay\_Scout2  
2. N/A

##### firmware\_version\_Minor\_Version: The Row Cleaner minor firmware version

1. 2015-04-13  
reset\_cause: The reason why the RowCA hardware was reset:   
0. Power on reset 1. Reset 2. Brown-out reset 4. Watchdog reset (15ms timeout) 5. JTAG reset   
  
This message is transmitted only once after boot.

## FroboLay\_Scout2 Status (PFRST) transmitted by FroboLay\_Scout2 FW

$PFRST,state,voltage,spray\_signal\*CS<cr><lf>  
  
state: Normal states   
• STATE\_OK (1)   
Warning states   
• STATE\_NMEA\_WARN(2) At least one nmea packet disregarded due to invalid format/CS since last PFBST message.

##### Error states

• STATE\_WATCHDOG (3) No valid nmea packet received for the past 0.2s. (auto reset)   
• STATE\_LOW\_BAT (5) Battery voltage critically low (auto reset).   
  
voltage: Battery voltage (10 bit ADC out from voltage divider to allow external calibration)   
spray\_signal, represent the state of the spray action set at sent time.  
0 = off, 1= spray, 2= enforced off.

## FroboLay\_Scout2 Parameters (PFRSP) accepted by FroboLay\_Scout2 FW

$PFLSP,voltage\_min\*CS<cr><lf>  
voltage\_min: Battery minimum voltage threshold (10 bit value corresponding to ADC out from voltage divider)

## FroboLay\_Scout2 Communication Parameters (PFRCP) accepted by FroboLay\_Scout2 FW

$PFRCP,pfbst\_interval, pfbct\_wd\_timeout\*CS<cr><lf>  
pfbst\_interval: Rate of the Frobit Status (PFBST) 1-1000 \* [ms] (default 100)   
pfbct\_wd\_timeout: NMEA watchdog timeout (monitoring PFBCT)   
0: disable   
1-1000 \* [ms]

## FroboLay\_Scout2 (PFRSL) accepted by FroboLay\_Scout2 FW

$PFRSL,spray\_signal\*CS<cr><lf>  
  
spray\_signal: 0 = off, 1= spray, 2= enforced off.