FLYMASTER F1
Commands

Introduction
Using a terminal emulator, like hyper-terminal, it is possible to configure several parameters on the F1 modules.

Communicating with the F1
The communication with the F1 module is achieved through an RS232 port or Bluetooth serial port. The following parameters should be used:

Baud rate	57600
Bits	8
Parity	None
Stop bits	1
Flow control	None

When running normally the F1 will be sending standard NMEA navigation sentences to the serial port.

All messages are “NMEA type” and are thus terminated with a checksum. The checksum is a two-character hexadecimal number, located at the end of each NMEA sentence, representing the "two's complement" of the sentence:

$GPGSA,A,1,,,,,,,,,,,,,99.99,99.99,99.99*30

In other words, each byte value between the dollar sign ($) and asterisk (*) is XOR'ed.

Switching navigation mode on and off
During normal operation F1 will continuously send data to the port, this is navigation and altimeter data which is used by the navigation application (NAV+ etc).To stop F1 from sending navigation data, send the following command:
$PFMDNL,*1D

On receiving this command the F1 stop sending NMEA navigation sentences.

To return to navigation mode, i.e. tell F1 to start sending navigation data again send:
$PFMNAV,*02

Power down F1 module
To switch the F1 module off send the following command:
$PFMOFF,*14

Just before a power off occurs, F1 will send the following message:
$FMMSG,POWERDOWN,*1f
An application may use this message to close off the comm port prior to the actual shutdown.

Read F1 configuration data
To read the current configuration settings from the F1 send the following command:
$PFMCFG,*19

To this command the F1 will respond with its current configuration. Here is the default configuration:
$FMCFG,PILOT:John Doe,*5c
$FMCFG,DAMPER:8,*44
$FMCFG,SINKTH:-25,*5a
$FMCFG,CLIMBTH:1,*17
$FMCFG,BASEFQ:700,*46
$FMCFG,INCFQ:10,*21
$FMCFG,CADEN:17,*38
$FMCFG,BZZ:3,*02

Setting the pilot name
To set the pilot name send the following command:
$PFMPLT,Greg House,*6C

Setting Altitude alarm

On firmware version 1.21 or higher a new feature is available which sets of a warning alarm if the pilot exceeds a preset altitude. A useful feature when flying in airspace with altitude restrictions, also some competion organizers have started impose penalties for pilots exceeding altitude limits. This is the value is represented in meters.

The following command will sent the alarm to trigger at 2900 meters:
$PFMALT,2900,*09

Setting Automatic silence

From version 1.21 or higher, the F1 may be configured to keep the Variometer audio quiet until after takeoff. Using the GPS F1 checks that a speed threshold has been reached and switches on the audio. Obviously a GPS fix must have been obtained, so be sure to switch on the F1 well before takeoff to allow for a fix.

The following command will sent the speed threshold for F1 to start acoustics at 5km/h:
$PFMSIL,5,*38

Setting Variometer acoustics

Set the sink threshold
This is the value is represented in 0.1 meters per second, and is the vertical speed below which the F1 starts to acoustically warn the user about sink.

The following command would set the sink warning to -3 m/s:
$PFMSTH,-30,*16

Set climb threshold
This value represented in 0.1 meters per second, and is the vertical speed above which F1 will start emitting climb beeps.

The following command will set the F1 to start beeping when the climb speed exceed 0.1 m/s:
$PFMCTH,1,*19

Set climb base frequency
The audio frequency in hertz, of the first climbing beep. The following command to set the frequency to 700hz.
$PFMBFQ,700,*15

Set frequency increments
Hertz value added to the base frequency for each 0.1 m/s of extra climb rate.
$PFMIFQ,10,*28

Set cadence formula

Currently F1 supports 2 types of cadence (time between beeps when climbing), a less aggressive (0 =slower) or a more aggressive (1=faster) cadence rate. You can also set “dynamic frequencies”, i.e. the possibility of frequencies to vary during the beep. To set these values send the following command:

$PFMCAD,1,1,*1D

Where the first “1” tells F1 to use the more aggressive cadence, and the second “1” tells it to use dynamic frequencies.

Setting the zero buzzer
F1 has a “zero climb/sink” warning sound, this tells the user that he is in buoyant air, but not yet lift. The value in 0.1 m/s at which this warning is emitted bellow the climb threshold.

If the climb threshold is set to 0.1 m/s then the following command will set the buzzer threshold to trigger at 0.2 m/s:

$PFMBZZ,3,*06

To disable the buzzer set the value to 0, i.e. $PFMBZZ,0,*05.

Variometer sensitivity

The F1 can be set to be more or less sensitive, this is achieved using the “damper” value. A lower value will make the vario beep more erratically, whilst a higher value will cause it to respond slower to altitude variations. The factory default for this value is 8, which is the best compromise. To set this parameter use the following command:

$PFMDMP, 8,*1A

Setting the Pilot Name

The following command may be used to set pilot name, this will be output when generating IGC flight logs:

*$PFMPLT,name,compnumber,gliderbrand,glidermodel,*cs*

name =pilot name
compnumber = competition number
gliderbrand= glider brand
glidermodel= glider model
cs= standard nmea checksum

Example:

$PFMPLT,John Doe,17,Axis,Mercury,*10