

# XTreme

## Firmware revisions

Document - English 1.12

## Introduction

This document keeps track of firmware revisions for the MGL Avionics Stratomaster XTreme instrument range.

The XTreme's firmware can be upgraded in the field to the latest version via the SD card. This will keep your XTreme up to date with bug fixes, new features etc. The name of the file must be called XTREME.FW and it must reside in the root directory. When the XTreme powers up it will first look at the SD card to see whether the file exists, if it does then it will prompt the user to upgrade the firmware. Use the soft keys at the bottom to select whether to upgrade to the new firmware or to exit the firmware upgrade feature. If the file does not exist, then the firmware upgrade function is bypassed and the XTremes main program is executed. Please check <http://www.mglavionics.co.za/XTreme.html> regularly for the latest firmware releases.



The revision number is displayed on the instrument's startup screen as follows.



**Note:**

Please load default settings after a firmware upgrade. This is necessary in case the updated firmware contains new menu items / Unit settings etc. Please write down your current unit settings before loading the default settings. Press and hold the left and right most soft keys simultaneously on power up to load default factory settings. The following screen will be displayed:

**LOADING DEFAULT  
SETTINGS**

| <b>XTreme - EFIS</b> |  |
|----------------------|--|
| <b>Revision</b>      | <b>Description</b>   |
| <b>1.01</b>          | <p><b>Version 1.01 26/05/2010 (Franz Lamers)</b></p> <p>Initial release</p>  |
| <b>1.02</b>          | <p><b>Version 1.02 29/05/2010 (Franz Lamers) (MUST LOAD DEFAULT SETTINGS)</b></p> <p>Enhancement: Added DA in front of density altitude for easier identification.<br/>           Enhancement: Removed max windspeed from max/min screen<br/>           Bug: Fixed local/zulu time in XTreme simulator<br/>           Bug: Fixed RPM quick key increment for 1000 rpm increments<br/>           Enhancement: removed the magnetic variation menu item from the GPS menu. The magnetic variation menu still remains in the compass menu<br/>           Bug: Fixed GPS COG for magnetic/true indication<br/>           Bug: Fixed altitude encoder baud rate stuck on 9600<br/>           Enhancement: Added magnetic/true indication for gps cog<br/>           Enhancement: Added "CALC" to fuel level if it is a calculated fuel tank<br/>           Enhancement: Changed rotor max rpm values from 99999 to 9999<br/>           Enhancement: Removed rotor/rpm sides variable<br/>           Enhancement: Added Rotor max/min display variables<br/>           Enhancement: Added rotor rpm to the EMS page<br/>           Enhancement: Added in the GPS flight path</p> |
| <b>1.03</b>          | <p><b>Version 1.03 04/06/2010 (Franz Lamers) (MUST LOAD DEFAULT SETTINGS)</b></p> <p>Enhancement: Changed display minimum for RPM/Rotor to 0<br/>           Enhancement: Added support for the MGL current monitor<br/>           Enhancement: Removed all flashing of any variable that hits the yellow status<br/>           Bug: Fixed the 0.1 increment/decrement of the MAP setup variables using "Hg"<br/>           Bug: Fixed Fuel tank 1/2 setup where Gallons quick increment key was out by a factor of 10<br/>           Bug: Fixed simulator com error message<br/>           Enhancement: Rounded off asi dial increments to the nearest 10<br/>           Enhancement: Saved MAP calibration value in to the calibration memory so the user does not have to reenter it when default settings are loaded</p>  |
| <b>1.04</b>          | <p><b>Version 1.04 09/06/2010 (Franz Lamers) (MUST LOAD DEFAULT SETTINGS)</b></p> <p>Bug: Fixed the saving of the heading bug on/off and altitude bug on/off<br/>           Enhancement: Changed RPM/Rotor low alarm/caution to be able to go down to 0<br/>           Enhancement: Alarm message boxes are automatically resized to best fit text<br/>           Enhancement: Change the OAT temperature units to its own setting - it is not set via global temperature units<br/>           Bug: Fixed RPM/Rotor pulses/rev key increment<br/>           Enhancement: Added charge/discharge current channels to min/max page</p>   |

## XTreme - EFIS

|             |  |
|-------------|--|
| <b>1.05</b> | <p><b>Version 1.05 25/06/2010 (Franz Lamers) (MUST LOAD DEFAULT SETTINGS)</b></p> <p>Enhancement: Made changes to the menu system to make it easy to navigate (EXIT MENU/BACK/ARROWS/MULTIPLIER tabs)</p> <p>Enhancement: Made Insert SD Card message box smaller</p> <p>Enhancement: The GPS baud rate message is hidden if the user selects the internal GPS</p> <p>Enhancement: Removed the EGT/CHT high alarm value from the EMS pages</p> <p>Enhancement: Replaced the auto VFR info pages toggle buttons to manual only</p> <p>Enhancement: Removed wind speed/direction from displaying if no 2D/3D fix</p> <p>Enhancement: File system has been upgraded with a fast seek</p> <p>Enhancement: Centered the "DONE" message</p> <p>Enhancement: Moved the EFIS flight timer menu option to the timer setup menu</p> <p>Enhancement: Reorganised the ADC Values menu</p> <p>Enhancement: Renamed the PFD Setup menu to EFIS Setup</p> <p>Enhancement: Moved Volts setup/OAT setup to the EFIS setup menu</p> <p>Bug: Fixed the data recoding file no creation selection</p> <p>Enhancement: Fixed up the 3rd increment text in the ASI indicator</p> <p>Enhancement: Added a full screen VFR page</p> <p>Enhancement: Shifted some items around on the VFR page to accommodate the compass and windspeed/direction</p> <p>Enhancement: The ASI needle now goes over the ASI dial text</p> <p>Enhancement: Added in a special Rotax 912/914 mode to use the built in CHTs</p> <p>Enhancement: Added GPS fix/heading/ground speed to the PC simulator</p> <p>Bug: Fixed the info pages when scrolling past 7 info pages</p> <p>Enhancement: Changed the look of the info/checklist selection</p> <p>Enhancement: Replaced the MISC icon</p> <p>Bug: Fixed Fuel totals incrementing if no RDAC connected</p> <p>Bug: Fixed Acquiring spelling mistake on the GPS page</p> <p>Enhancement: Added red cross marks to the compass indication if no compass is connected</p> <p>Enhancement: Added full ascii table to checklists for multiple language support</p> <p>Enhancement: Removed the tick boxes from the checklist page</p> |
| <b>1.06</b> | <p><b>Version 1.06 19/08/2010 (Franz Lamers)</b></p> <p>Bug: Fixed asi span max bug which was limited to 250 km/h. Changed to 450km/h</p>  |
| <b>1.07</b> | <p><b>Version 1.07 20/11/2010 (Franz Lamers)</b></p> <p>Bug: Fixed maintenance timer running to quick</p>  |

## XTreme - EFIS

### Version 1.08 07/08/2010 (Franz Lamers) (MUST LOAD DEFAULT SETTINGS)

1.08

Enhancement: Added in navigation (waypoints and routes (Routes not functional at present))

Enhancement: Added in Aircraft registration on the main VFRpage

Enhancement: Changed the CHT increments to 1 degree instead of 10

Enhancement: Extended the "INIT DATA REC FILE" message to 1 second minimum

Enhancement: Improved menu text visibility

Enhancement: Swapped the on/off around in the Altitude bug,Heading bug and timer menu

Enhancement: Swapped the up/down and start/stop in the timer menu

Enhancement: Info pages and checklists must be in their own directory on the SD card (INFOPAGE,CHECKLST)

Enhancement: Reduced abbreviations for TMR/FT/LCL to T/F/L to make more space for the CDI and to declutter the main EFIS page

Enhancement: Upgraded the file system

Enhancement: Made the GPS fix EFIS text item smaller

Bug: Fixed DA meters conversion on EFIS screens

Enhancement: Added splash screen display to XTreme simulator

Enhancement: Added GPS fix mode to range variable on the EMS screen if GPS ground speed is used

Enhancement: Added checklist and infopage viewing to the simulator

Enhancement: Changed the compass heading triangle to indicate GPS ground track

Enhancement: Added mini HSI display on the MFD and VFR pages

Enhancement: Added VSI scale 500ft/min, 1000ft/min, 2000ft/min, 4000ft/min

Enhancement: Reduced VSI m/s reading to one decimal place

Enhancement: Removed fuel message when no fuel related indicators are shown

Enhancement: Sub menus now rotate around

Enhancement: Removed "REALIGN AHRS" and "LEVEL PITCH" from the EFIS/MFD Sub menus when no AHRS attached

Enhancement: Added a EFIS/HSI display screen mode

Enhancement: Added save/recall settings feature from SD card

Enhancement: Added filter for volts display

Enhancement: Removed UP/DN from the VSI dial

Enhancement: Upgraded the GPS flight path

Enhancement: Added option to use GPS track for compass reading if the user is not using the compass hardware

Bug: Fixed Timer running to slowly

Enhancement: Improved Pressure units accuracy

Bug: Fixed ASI calibration value if different units are selected

Enhancement: Rotax 912 mode now uses the temperature sender type in the AUX3, AUX4 (AUX3,AUX4 function must be set to temperature)

Enhancement: Increased user linearisers to 16 points

Enhancement: Swapped On/Exit keys around for heading and altitude bug

Enhancement: Added support for vertical power VP-X

Bug: Fixed EGT/CHT main display when EGT channels=0

Enhancement: Added support for CO Guardian

Enhancement: Changed "VOLT" text to "BAT" on th ems page

Enhancement: Added roll around support for the main menu

| <b>XTreme - EFIS</b> |   |
|----------------------|---|
| <b>1.09</b>          | <p><b>Version 1.09 26/02/2011 (Franz Lamers)</b></p> <p>Enhancement: EMS and EFIS scroll wrap around<br/>                     Enhancement: Changed EMS temp lower limit to -40C (-40F)<br/>                     Bug: Fixed EGT/CHT scanning when VFR/EMS page is displayed<br/>                     Enhancement: Added edit multiplier to temperature/pressure and current channels<br/>                     Bug: Fixed pressure user lineariser edit multiplier display</p>  |
| <b>1.1</b>           | <p><b>Version 1.10 14/03/2011 (Franz Lamers)</b></p> <p>Bug: Fixed slow navidata search function<br/>                     Enhancement: Added navidata display types<br/>                     Bug: Fuel mode was not initialised after a recall settings</p>   |
| <b>1.11</b>          | <p><b>Version 1.11 27/03/2011 (Franz Lamers)</b></p> <p>Enhancement: Added SP4/SP7 velocity message<br/>                     Enhancement: Added Vertical Power VP-X support (beta release)<br/>                     Enhancement: Moved the navidata file to the root directory for compatibility with other MGL EFIS products</p> <p>Known bugs:<br/>                     -Users reported flight log problems</p> <p>Still to be done:<br/>                     -Routes needs to be completed<br/>                     -VPX devices must only be shown if enabled<br/>                     -VPX alarm messages must be implemented</p>  |
| <b>1.12</b>          | <p><b>Version 1.12 02/05/2011 (Franz Lamers)</b></p> <p>Enhancement: Added sign to GF for SP7<br/>                     Enhancement/Bug: Fixed/Added x1,x10,x100 multiplier to EGT/CHT setups<br/>                     Enhancement: Added VPX alarm messages<br/>                     Enhancement: Removed Elec Sys display from the display setup menu. It is automatically enabled when the electrical system is selected.<br/>                     Bug/Enhancement: Moved the fuel data and QNH setting to non-volatile memory<br/>                     Enhancement: Improved flight log code<br/>                     Enhancement: File system upgrade<br/>                     Enhancement: Improved timer accuracy (Hobbs,Maintenance,Airframe and fuel calculation)<br/>                     Enhancement: Changed flight timer from flashing to just the semi colon to flash to indicate an active flight</p> <p>Still to be done:<br/>                     -Routes needs to be completed<br/>                     -VPX devices must only be shown if enabled</p> |

## XTreme - EFIS

|             |  |
|-------------|--|
| <b>1.13</b> | <p><b>Version 1.13 24/05/2011 (Franz Lamers)</b></p> <p>Bug: Fixed psi to bar conversion when using the UMA 7psi (T1EU07) sender<br/>         Enhancement: Made the fuel totals text bigger<br/>         Bug: Fixed saving of manual fuel input<br/>         Enhancement: Changed CO Guardian to CO Monitor<br/>         Enhancement: Optimised the ADC menu</p> <p>Still to be done:<br/>         -Routes needs to be completed<br/>         -VPX devices must only be shown if enabled</p> |
| <b>1.14</b> | <p><b>Version 1.14 14/06/2011 (Franz Lamers)</b></p> <p>Bug: Fixed ETA time indication<br/>         Enhancement: Rewrote analog display channel code to be able to display single NTC CHT channel and 3 analog channels<br/>         Enhancement: Reorganised the menu order for oil temperature/pressure and current menus<br/>         Enhancement: Added VDO 120 degree C temperature sender</p>  |
| <b>1.15</b> | <p><b>Version 1.15 28/08/2011 (Franz Lamers)</b></p> <p>Enhancement: Added CSV file format export to the flight log<br/>         Enhancement: Changed the flight log to RAM to avoid flash write cycles<br/>         Bug: Fixed the data recording<br/>         Bug: Fixed dual fuel level single flow &amp; dual fuel dual flow alarm over writing text below</p>   |
| <b>1.16</b> | <p><b>Version 1.16 19/09/2011 (Franz Lamers)</b></p> <p>Bug: Fixed automatic flight log saving</p>   |
| <b>1.17</b> | <p><b>Version 1.17 22/09/2011 (Franz Lamers)</b></p> <p>Enhancement: Disabled dual calculated tanks<br/>         Enhancement: Added menu option to select which tank adds to range calculations<br/>         Enhancement: Changed the dual calc/physical tank to independent separated tanks<br/>         Enhancement: Rounded off calculated fuel level</p>   |
| <b>1.18</b> | <p><b>Version 1.18 01/10/2011 (Franz Lamers)</b></p> <p>Bug: Fixed datalogging error if the Analog Aux 3 was not set to temperature</p>  |

## XTreme - EFIS

|             |   |
|-------------|---|
| <b>1.19</b> | <p><b>Version 1.19 27/12/2011 (Franz Lamers)</b></p> <p>(Vertical power recommendations):<br/>         Bug: If a device is on then only the "OFF" softkey is shown, if the device is off then only the "ON" softkey is shown<br/>         Bug: Only enabled devices are now shown<br/>         Enhancement: Removed the flaps, pitch and roll trim menus<br/>         Enhancement: Changed the on/off softkey labels to left/right, up/down for the roll trim, flaps and pitch trim</p> <p>Bug: Fixed the new route function saving<br/>         Enhancement: Added the delete route function<br/>         Enhancement: Added the edit route name function<br/>         Enhancement: Added back/exit softkeys to the RTC setting menu option<br/>         Enhancement: Added back/exit softkeys to the airframe inspection timer setting<br/>         Enhancement: Added back/exit softkeys to the maintenance timer menu option<br/>         Enhancement: Added back/exit softkeys to the hobbs time menu option<br/>         Enhancement: Added back/exit softkeys to the change hobbs code menu option<br/>         Enhancement: Added back/exit softkeys to the aircraft registration menu option</p> |
| <b>1.2</b>  | <p><b>Version 1.20 02/01/2012 (Franz Lamers)</b></p> <p>Enhancement: Added save softkey to the new route &amp; edit route name functions<br/>         Enhancement: Added route selection to main display softkey<br/>         Enhancement: Added the view route function<br/>         Enhancement: Added the delete waypoint from route function<br/>         Enhancement: Added the add/insert waypoint to route function<br/>         Enhancement: Fixed the atan2 error when using the XTreme-EFIS PC simulator<br/>         Bug: Fixed the serial protocol to interface to the CNV-ALT2<br/>         Bug: Added a Altitude encoder test function to the Altitude menu<br/>         Enhancement: Alarms are now activated when in the menu system<br/>         Enhancement: External alarm and checkbox added to the simulator<br/>         Enhancement: Route functionality is now complete</p>   |

| <b>XTreme - EMS</b> |   |
|---------------------|---|
| <b>Revision</b>     | <b>Description</b>  |
| <b>1.00</b>         | <p><b>Version 1.00 11/05/2011 (Franz Lamers)</b></p> <p>Initial release</p>   |
| <b>1.01</b>         | <p><b>Version 1.01 16/08/2011 (Franz Lamers)</b></p> <p>Bug: Added carriage return to the end of the data for the flight log<br/>                     Enhancement: Renamed the flight log to XTFLIGHT.CSV<br/>                     Bug: Fixed dual fuel level single flow alarm over writing text below<br/>                     Bug: Fixed the GPS speed defaulting to cruise speed if the GPS signal is lost<br/>                     Bug: Fixed the data recording<br/>                     Enhancement: Changed the flight log to RAM to avoid flash write cycles<br/>                     Enhancement: Added GPS display page enable/disable</p> |
| <b>1.02</b>         | <p><b>Version 1.02 20/08/2011 (Franz Lamers)</b></p> <p>Enhancement: Added Current, Rotor RPM, 912 CHT to the datalogging output message<br/>                     Bug: Fixed fuel flow data in datalogging output message<br/>                     Bug: Fixed GPS GS max value overwriting CO max value</p>   |
| <b>1.03</b>         | <p><b>Version 1.03 29/09/2011 (Franz Lamers)</b></p> <p>Enhancement: Disabled dual calculated tanks<br/>                     Enhancement: Added menu option to select which tank adds to range calculations<br/>                     Enhancement: Changed the dual calc/physical tank to independent separated tanks<br/>                     Enhancement: Rounded off calculated fuel level<br/>                     Bug: Fixed datalogging error if the Analog Aux 3 was not set to temperature</p>   |

## **Instruments in the *XTreme* series**

**XTreme-EFIS**      Electronic Flight Information System  
**XTreme-EMS**      Universal Engine Monitor