

# XTreme

## Firmware Revisions

Document - English 2.00

## 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 XT2EFIS.FW (EFIS file) and XT2EMS.FW (EMS file) 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**

**Below is the correct procedure to follow to successfully upgrade your Xtreme system**

- 1) Save your settings to a SD card by selecting the "*SAVE SETTINGS TO SD CARD*" function in the Miscellaneous section.
- 2) Power off the unit.
- 3) Insert the SD card with the new firmware upgrade file and power up the unit.
- 4) The unit should prompt you to upgrade the firmware.
- 5) Upgrade the firmware.
- 6) Once the firmware has upgraded it will then execute the new firmware.
- 7) Press and hold the left and right most soft keys when the firmware version is displayed. The words "LOADING DEFAULT SETTINGS" should appear.
- 8) Recall your settings from the SD card by selecting the "*RECALL SETTINGS FROM SD CARD*" function in the Miscellaneous section.
- 9) Verify that all your settings and the firmware version number is correct.
- 10) Done!

<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.            Enhancement: Removed max windspeed from max/min screen            Bug: Fixed local/zulu time in XTreme simulator            Bug: Fixed RPM quick key increment for 1000 rpm increments            Enhancement: removed the magnetic variation menu item from the GPS menu. The magnetic variation menu still remains in the compass menu            Bug: Fixed GPS COG for magnetic/true indication            Bug: Fixed altitude encoder baud rate stuck on 9600            Enhancement: Added magnetic/true indication for gps cog            Enhancement: Added "CALC" to fuel level if it is a calculated fuel tank            Enhancement: Changed rotor max rpm values from 99999 to 9999            Enhancement: Removed rotor/rpm sides variable            Enhancement: Added Rotor max/min display variables            Enhancement: Added rotor rpm to the EMS page            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            Enhancement: Added support for the MGL current monitor            Enhancement: Removed all flashing of any variable that hits the yellow status            Bug: Fixed the 0.1 increment/decrement of the MAP setup variables using "Hg"            Bug: Fixed Fuel tank 1/2 setup where Gallons quick increment key was out by a factor of 10            Bug: Fixed simulator com error message            Enhancement: Rounded off asi dial increments to the nearest 10            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            Enhancement: Changed RPM/Rotor low alarm/caution to be able to go down to 0            Enhancement: Alarm message boxes are automatically resized to best fit text            Enhancement: Change the OAT temperature units to its own setting - it is not set via global temperature units            Bug: Fixed RPM/Rotor pulses/rev key increment            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

## XTreme - EFIS

<b>1.09</b>	<p><b>Version 1.09 26/02/2011 (Franz Lamers)</b></p> <p>Enhancement: EMS and EFIS scroll wrap around          Enhancement: Changed EMS temp lower limit to -40C (-40F)          Bug: Fixed EGT/CHT scanning when VFR/EMS page is displayed          Enhancement: Added edit multiplier to temperature/pressure and current channels          Bug: Fixed pressure user lineariser edit multiplier display</p>
<b>1.10</b>	<p><b>Version 1.10 14/03/2011 (Franz Lamers)</b></p> <p>Bug: Fixed slow navidata search function          Enhancement: Added navidata display types          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          Enhancement: Added Vertical Power VP-X support (beta release)          Enhancement: Moved the navidata file to the root directory for compatibility with other MGL EFIS products</p> <p>Known bugs:          -Users reported flight log problems</p> <p>Still to be done:          -Routes needs to be completed          -VPX devices must only be shown if enabled          -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          Enhancement/Bug: Fixed/Added x1,x10,x100 multiplier to EGT/CHT setups          Enhancement: Added VPX alarm messages          Enhancement: Removed Elec Sys display from the display setup menu. It is automatically enabled when the electrical system is selected.          Bug/Enhancement: Moved the fuel data and QNH setting to non-volatile memory          Enhancement: Improved flight log code          Enhancement: File system upgrade          Enhancement: Improved timer accuracy (Hobbs,Maintenance,Airframe and fuel calculation)          Enhancement: Changed flight timer from flashing to just the semi colon to flash to indicate an active flight</p> <p>Still to be done:          -Routes needs to be completed          -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          Enhancement: Made the fuel totals text bigger          Bug: Fixed saving of manual fuel input          Enhancement: Changed CO Guardian to CO Monitor          Enhancement: Optimised the ADC menu</p> <p>Still to be done:          -Routes needs to be completed          -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          Enhancement: Rewrote analog display channel code to be able to display single NTC CHT channel and 3 analog channels          Enhancement: Reorganised the menu order for oil temperature/pressure and current menus          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          Enhancement: Changed the flight log to RAM to avoid flash write cycles          Bug: Fixed the data recording          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          Enhancement: Added menu option to select which tank adds to range calculations          Enhancement: Changed the dual calc/physical tank to independent separated tanks          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):            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            Bug: Only enabled devices are now shown            Enhancement: Removed the flaps, pitch and roll trim menus            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            Enhancement: Added the delete route function            Enhancement: Added the edit route name function            Enhancement: Added back/exit softkeys to the RTC setting menu option            Enhancement: Added back/exit softkeys to the airframe inspection timer setting            Enhancement: Added back/exit softkeys to the maintenance timer menu option            Enhancement: Added back/exit softkeys to the hobbs time menu option            Enhancement: Added back/exit softkeys to the change hobbs code menu option            Enhancement: Added back/exit softkeys to the aircraft registration menu option</p>
<b>1.20</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            Enhancement: Added route selection to main display softkey            Enhancement: Added the view route function            Enhancement: Added the delete waypoint from route function            Enhancement: Added the add/insert waypoint to route function            Enhancement: Fixed the atan2 error when using the XTreme-EFIS PC simulator            Bug: Fixed the serial protocol to interface to the CNV-ALT2            Bug: Added a Altitude encoder test function to the Altitude menu            Enhancement: Alarms are now activated when in the menu system            Enhancement: External alarm and checkbox added to the simulator            Enhancement: Route functionality is now complete</p>
<b>1.21</b>	<p><b>Version 1.21 02/02/2012 (Franz Lamers)</b></p> <p>Bug: Fixed waypoint type selection when creating a new waypoint</p>
<b>1.22</b>	<p><b>Version 1.22 19/02/2012 (Franz Lamers)</b></p> <p>Bug: Fixed datalogging for oil temp/pressure if Fahrenheit/psi units is selected            Enhancement: Added a cancel goto on the goto waypoint page if a active waypoint is in progress</p>
<b>1.23</b>	<p><b>Version 1.23 09/03/2012 (Franz Lamers)</b></p> <p>Bug: Fixed differential calculated fuel level when using dual flow senders and a single calculated tank            Enhancement: Changed the menu option for GPS Flight Path to Attitude source and added a "none" field for a gray background EFIS screen</p>



<b>XTreme - EFIS</b>	
<b>1.24</b>	<p><b>Version 1.24 26/04/2012 (Franz Lamers)</b></p> <p>Enhancement: Added support for the MGL RDAC-XF, The Xtreme can now handle 2xRPM inputs and 2xFuel flow inputs.</p>
<b>1.25</b>	<p><b>Version 1.25 16/08/2012 (Franz Lamers)</b></p> <p>Requires to load default settings.                      Enhancement: Added support for the Sandia transponder                      Enhancement: Added support for the MGL RDAC-XF old style optical connector extended messages                      Enhancement: Added a menu option to select between normal and extended RDAC messages, ignore if using the CAN interface                      Enhancement: Added any direction of ADC values to user pressure and temperature linearisers                      Enhancement: Changed the UTC offset to +-13:00                      Enhancement: Added a device failure cross for the CO Monitor                      Enhancement: Automatic recall of the info/checklist page on startup                      Bug: Fixed the OAT display if the OAT low alarm is less the the OAT display minimum value                      Bug: Fixed the fuel calculated tank calculation error</p> <p>NOTE: IF USING THE RDAC_XF PLEASE SET DIP SWITCHES TO A=ON and B=ON if using the old RDAC connection. RDAC PROTOCOL MUST THEN BE SET TO EXTENDED FOR CAN SET THEM TO A=OFF AND B=OFF</p>
<b>1.26</b>	<p><b>Version 1.26 29/10/2012 (Franz Lamers)</b></p> <p>Enhancement: Added CAN protocol support for the MGL SP6 and SP7                      Bug: Fixed a bug created in ver 1.25 with the pressure lineariser                      Bug: Fixed a bug with AUX1/3 and 2/4 max/min display                      Enhancement: Added page numbers to the main menu                      Enhancement: Moved up warning messages as to not block the airspeed and altitude and made them smaller                      Enhancement: Changed the "RANGE EXCEEDED" message to "ATTITUDE EXCEEDED"                      Enhancement: Changed the sensitivity of the slip indicator</p>
<b>1.27</b>	<p><b>Version 1.27 29/11/2012 (Franz Lamers) (MUST LOAD DEFAULT SETTINGS AFTER UPGRADE)</b></p> <p>Enhancement: Support added for the 912iS CAN engine                      Bug: Fixed the horizontal bar if the low alarm or low caution is below the display minimum value                      Bug: Fixed some datalogging variables                      Bug: Fixed ANALOG AUX 1/3 and 2/4 headings to accommodate the RDAC-XF                      Enhancement: Added page numbers to the EMS menu                      Enhancement: Added the RDAC-XF fuel pressure and current channels</p>
<b>1.28</b>	<p><b>Version 1.28 28/03/2013 (Franz Lamers)</b></p> <p>Enhancement: Made the backlight control finer and allowed it to dim even further                      Bug: Fixed the TC readings when the OAT goes below 0 degrees Celsius                      Bug: Fixed the Vs and Vne on/off menu items been swapped around</p>

## XTreme - EFIS

<b>1.29</b>	<p><b>Version 1.29 10/06/2013 (Franz Lamers)</b></p> <p>Bug: Fixed the fuel pressure not showing when both fuel flows and fuel levels are disabled          Bug: Fixed the sunrise/sunset time when certain UTC offsets are used          Bug: Fixed a problem with the fuel setup menu scrolling when exiting the fuel pressure setup menu          Enhancement: Changed RPM to RPM 1 and ROTOR to RPM 2 and added labels to identify the RPM inputs          Enhancement: Changed ROTOR RPM input to RPM 2 and increased values to 99999          Enhancement: Added RPM labels to the main RPM displays          Enhancement: Center justified the RPM values and cleaned up the RPM1/2 display          Enhancement: Center justified the MAP value in the arc display          Bug: Fixed fuel flow when using a single flow, dual levels and the mode is set to diff/sum and not dual          Bug: Fixed the fuel calculation problem when a single flow, 1 calculated tank and 1 physical tank is used          Enhancement: Cleaned up certain ems setup menu options          Enhancement: Added 0.1 litre resolution to the fuel tanks          Enhancement: Cleaned up the fuel total display          Enhancement: Added a filter to the compass heading display          Enhancement: Added NMEA GPGGA and GPRMC serial output messages          Bug: Fixed a menu scroll issue in the MAP setup menu option          Enhancement: Increased the size of the RPM1&amp;RPM2 values in the MFD          Enhancement: Cleaned up the MFD RPM1/RPM2/MAP fields          Bug: Fixed the MAP min/max value saving          Enhancement: Compressed the code size a bit</p>
<b>1.30</b>	<p><b>Version 1.30 04/07/2013 (Franz Lamers)</b></p> <p>Enhancement: Added in the 2 axis autopilot menus and preflight checks (Servo checks are enabled)          Enhancement: Added in support for the new auto calibrating SP6 compass          Enhancement: Redone the current calibration menu option and calculations          Bug: Fixed the G-Force not going negative when using the SP7 with the CAN protocol          Enhancement: Added a "current" setting to the altitude bug and heading bug selection          Enhancement: Updated the magnetic variation tables          Enhancement: Added the slip indicator if a SP6 has been connected and no attitude sensor is present</p>
<b>1.31</b>	<p><b>Version 1.31 18/10/2013 (Franz Lamers)</b></p> <p>Enhancement: Completed the autopilot          Enhancement: Changes to user setting of the heading and altitude bugs          Enhancement: Various changed to the CAN bus code          Enhancement: Various changes to the navigation and HSI code          Enhancement: The internal clock is now synchronised to the GPS once a valid time has been received          Enhancement: Various enhancements and bug fixes</p>

<b>XTreme - EFIS</b>	
<b>1.33</b>	<p><b>Version 1.33 26/10/2014 (Franz Lamers)</b></p> <p>Bug: Fixed bug created in version 1.31 with compass airtalk deviation mode                      Bug: Added GPGGA message to the NMEA output</p>
<b>2.00</b>	<p><b>Version 2.00 31/08/2014 (Franz Lamers)</b></p> <p>New Xtreme EFIS hardware</p>
<b>2.01</b>	<p><b>Version 2.01 07/11/2014 (Franz Lamers)</b></p> <p>Bug: Fixed GPGGA NMEA output message</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            Enhancement: Renamed the flight log to XTFLIGHT.CSV            Bug: Fixed dual fuel level single flow alarm over writing text below            Bug: Fixed the GPS speed defaulting to cruise speed if the GPS signal is lost            Bug: Fixed the data recording            Enhancement: Changed the flight log to RAM to avoid flash write cycles            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            Bug: Fixed fuel flow data in datalogging output message            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            Enhancement: Added menu option to select which tank adds to range calculations            Enhancement: Changed the dual calc/physical tank to independent separated tanks            Enhancement: Rounded off calculated fuel level            Bug: Fixed datalogging error if the Analog Aux 3 was not set to temperature</p>
<b>1.04</b>	<p><b>Version 1.04 07/06/2012 (Franz Lamers)</b></p> <p>Enhancement: Added support for the MGL RDAC-XF, The Xtreme can now handle 2xRPM inputs and 2xFuel flow inputs.</p>

## XTreme - EMS

<b>1.05</b>	<p><b>Version 1.05 10/07/2012 (Franz Lamers)</b></p> <p>Requires to load default settings.                  Enhancement: Added support for the MGL RDAC-XF old style optical connector extended messages                  Bug: Fixed the voltage readout when using the MGL RDAC-XF                  Enhancement: Added a menu option to select between normal and extended RDAC messages, ignore if using the CAN interface                  Enhancement: Added any direction of ADC values to user pressure and temperature linearisers                  Enhancement: Changed the UTC offset to +-13:00</p> <p>NOTE: IF USING THE RDAC_XF PLEASE SET DIP SWITCHES TO A=ON and B=ON if using the old RDAC connection. RDAC PROTOCOL MUST THEN BE SET TO EXTENDED FOR CAN SET THEM TO A=OFF AND B=OFF</p>
<b>1.06</b>	<p><b>Version 1.06 20/09/2012 (Franz Lamers)</b></p> <p>Enhancement: Added back/exit softkeys to the RTC setting menu option                  Enhancement: Added back/exit softkeys to the maintenance timer menu option                  Enhancement: Added back/exit softkeys to the hobbs time menu option                  Enhancement: Added back/exit softkeys to the change hobbs code menu option                  Enhancement: Added back/exit softkeys to the aircraft registration menu option                  Bug: Fixed the OAT display if the OAT low alarm is less the the OAT display minimum value                  Bug: Fixed the fuel calculated tank calculation error                  Bug: Fixed ANALOG AUX 1/3 and 2/4 headings to accomodate the RDAC-XF                  Bug: Fixed calibration factor for volts                  Enhancement: Added the RDAC-XF fuel pressure and current channels to the XTreme-EMS                  Enhancement: Automatic recall of the info/checklist page on startup                  Enhancement: Added a device failure cross for the CO Monitor                  Bug: Fixed a bug with AUX1/3 and 2/4 max/min display                  Bug: Fixed a bug created in ver 1.05 with the pressure lineariser</p>
<b>1.07</b>	<p><b>Version 1.07 07/11/2012 (Franz Lamers)</b></p> <p>Bug: Fixed the horizontal bar if the low alarm or low caution is below the display minimum value                  Bug: Fixed some datalogging variables</p>
<b>1.08</b>	<p><b>Version 1.08 14/11/2012 (Franz Lamers)</b></p> <p>Enhancement: Support added for the 912iS CAN engine                  Bug: Fixed the rotor alarm from activating the current alarm</p>
<b>1.09</b>	<p><b>Version 1.09 16/11/2012 (Franz Lamers)</b></p> <p>Enhancement: Added the 912iS Coolant Temperature. Changed the ANALOG AUX1/3 menu option to Coolant Temp if a 912iS engine is detected</p>

<b>XTreme - EMS</b>	
<b>1.10</b>	<p><b>Version 1.10 28/03/2013 (Franz Lamers)</b></p> <p>Bug: Fixed the TC readings when the OAT goes below 0 degrees Celsius</p>
<b>1.11</b>	<p><b>Version 1.11 06/06/2013 (Franz Lamers)</b></p> <p><b>LOAD DEFAULT SETTINGS ESSENTIAL</b></p> <p>Bug: Fixed the fuel pressure not showing when both fuel flows and fuel levels are disabled</p> <p>Bug: Fixed the sunrise/sunset time when certain UTC offsets are used</p> <p>Bug: Fixed a problem with the fuel setup menu scrolling when exiting the fuel pressure setup menu</p> <p>Enhancement: Changed RPM to RPM 1 and ROTOR to RPM 2 and added labels to identify the RPM inputs</p> <p>Enhancement: Changed ROTOR RPM input to RPM 2 and increased values to 99999</p> <p>Enhancement: Added RPM labels to the main RPM displays</p> <p>Enhancement: Center justified the RPM values and cleaned up the RPM1/2 display</p> <p>Enhancement: Center justified the MAP value in the arc display</p> <p>Bug: Fixed fuel flow when using a single flow, dual levels and the mode is set to diff/sum and not dual</p> <p>Bug: Fixed the fuel calculation problem when a single flow, 1 calculated tank and 1 physical tank is used</p> <p>Enhancement: Cleaned up certain ems setup menu options</p> <p>Enhancement: Added 0.1 litre resolution to the fuel tanks</p> <p>Enhancement: Cleaned up the fuel total display</p>
<b>1.12</b>	<p><b>Version 1.12 01/08/2014 (Franz Lamers)</b></p> <p>Bug: Fixed map menu item scrolling off screen</p> <p>Bug: Fixed RPM2 low alarm</p> <p>Enhancement: Changed rpm percentage to change in 1 resolution</p> <p>Enhancement: Change MED-&gt;MEDIUM for fuel filter</p>
<b>2.00</b>	<p><b>Version 2.00 27/07/2014 (Franz Lamers)</b></p> <p>New XTreme EMS hardware</p> <p>Bug: Fixed map menu item scrolling off screen</p> <p>Bug: Fixed rotor low alarm</p>
<b>2.01</b>	<p><b>Version 2.01 28/08/2014 (Franz Lamers)</b></p> <p>Enhancement: Support added for the MGL RDAC-VD (See documentation for hardware modifications). CO Monitor must be off for the RDAC-VD to work.</p>

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

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