



<b>CUSTOMER DOCUMENTATION</b>	<b>February 18th 2007</b>	<b>FIRMWARE</b>	<b>MXL Release history</b>
<b>Firmware Release history: MXL Strada –Pista – PRO – PRO 05 – MXL Master for Slaves</b>			

**February 18<sup>th</sup> 2007**

**Firmup\_MXLDAVIDGPS\_070218.exe (\*)**

<b>Logger</b>	<b>Version</b>	<b>Changes – Additions</b>
MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.81	First official release with GPS support and management First official release with run-based data download

MXL QM	29.01	First official release
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<b>Slaves</b>	<b>Version</b>	<b>Changes – Additions</b>
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DaVid Slave Expansion	22.02	
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LCU-ONE (Lambda Controller)	25.07	
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**(\*) This firmware version requires Race Studio 2 version 2.21.21 or higher**

**January 25<sup>th</sup> 2007**

**Firmup\_MXLDAVID\_070125.exe**

<b>Logger</b>	<b>Version</b>	<b>Changes – Additions</b>
MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.64	<ul style="list-style-type: none"><li>Fixed bug: Suzuki Plug and Play kit measure filters</li></ul>

<b>Slaves</b>	<b>Version</b>	<b>Changes – Additions</b>
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DaVid Slave Expansion	22.02	
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LCU-ONE (Lambda Controller)	25.04	
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**January 22<sup>nd</sup> 2007**

**Firmup\_MXLDAVID\_070122.exe**

<b>Logger</b>	<b>Version</b>	<b>Changes – Additions</b>
MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.63	<ul style="list-style-type: none"><li>Fixed bug: external shift light management</li></ul>

<b>Slaves</b>	<b>Version</b>	<b>Changes – Additions</b>
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DaVid Slave Expansion	22.02	
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LCU-ONE (Lambda Controller)	25.04	
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**January 12<sup>th</sup> 2007**

**Firmup\_MXLDAVID\_070112.exe**

<b>Logger</b>	<b>Version</b>	<b>Changes – Additions</b>
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MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.62	<ul style="list-style-type: none"><li>• Fixed bug: analog channels acquisition frequency</li><li>• Fixed bug: input for revolution sensor on speeds (1-4) can now accept a max value of 30.000 rpm with a max of 1-4 pulse/rot.</li></ul>
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<b>Slaves</b>	<b>Version</b>	<b>Changes – Additions</b>
DaVid Slave Expansion	22.02	
LCU-ONE (Lambda Controller)	25.04	

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**August 31<sup>st</sup> 2006** **Firmup\_MXLDAVID\_060831.exe**

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<b>Logger</b>	<b>Version</b>	<b>Changes – Additions</b>
MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.61	<ul style="list-style-type: none"><li>• Fixed bug: RPM does not work properly with DaVid Slave</li></ul>
<b>Slaves</b>	<b>Version</b>	<b>Changes – Additions</b>
DaVid Slave Expansion	22.02	
LCU-ONE (Lambda Controller)	25.04	<ul style="list-style-type: none"><li>• First release as Slave application.</li></ul>

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**July 21<sup>st</sup> 2006** **Firmup\_MXLDAVID\_060721.exe**

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<b>Logger</b>	<b>Version</b>	<b>Changes – Additions</b>
MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.60	<ul style="list-style-type: none"><li>• Fixed g-force direction in DaVid display</li><li>• Fixed negative values with automatic decimals for DaVid Slave</li><li>• Reorganized the memory of the measures in a circular buffer</li><li>• Improved DaVid Lambda recognition</li><li>• Fixed bug causing loss of ECU channels after error gear cal.</li></ul>
<b>Slaves</b>	<b>Version</b>	<b>Changes – Additions</b>
DaVid Slave Expansion	22.02	
LCU-ONE (Lambda Controller)	25.04	<ul style="list-style-type: none"><li>• First release as Slave application.</li></ul>

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**June 16<sup>th</sup> 2006** **Firmup\_MXLDAVID\_060616.exe**

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<b>Logger</b>	<b>Version</b>	<b>Changes – Additions</b>
MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.58	<ul style="list-style-type: none"><li>• Fixed bug that can cause missing ECU-channels in .DRK file</li></ul>
<b>Slaves</b>	<b>Version</b>	<b>Changes – Additions</b>
DaVid Slave Expansion	22.02	
LCU-ONE (Lambda Controller)	25.04	<ul style="list-style-type: none"><li>• First release as Slave application.</li></ul>

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**June 13th<sup>h</sup> 2006****Firmup\_MXLDAVID\_060613.exe**

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<b>Logger</b>	<b>Version</b>	<b>Changes – Additions</b>
MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.57	<ul style="list-style-type: none"><li>Added Slaves management (DaVid, Lambda, GPS) on AIM CAN net.</li></ul>
<b>Slaves</b>	<b>Version</b>	<b>Changes – Additions</b>
DaVid Slave Expansion	22.02	
LCU-ONE (Lambda Controller)	25.04	<ul style="list-style-type: none"><li>First release as Slave application.</li></ul>

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**May 26th<sup>h</sup> 2006****Firmup\_MXLDAVID\_060526.exe**

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<b>Logger</b>	<b>Version</b>	<b>Changes – Additions</b>
MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.55	<ul style="list-style-type: none"><li>Fixed bug causing problems on the filters.</li></ul>
<b>Slaves</b>	<b>Version</b>	<b>Changes – Additions</b>
DaVid Slave Expansion	22.02	

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**April 11th<sup>h</sup> 2006****Firmup\_MXLDAVID\_060405.exe**

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<b>Logger</b>	<b>Version</b>	<b>Changes – Additions</b>
MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.54	<ul style="list-style-type: none"><li>Changed direction of visualization on display of DaVid Salve accelerometers.</li></ul>
<b>Slaves</b>	<b>Version</b>	<b>Changes – Additions</b>
DaVid Slave Expansion	22.02	

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**March 30<sup>th</sup> 2006****Firmup\_MXLDAVID\_060330.exe**

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<b>Logger</b>	<b>Version</b>	<b>Changes – Additions</b>
MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.53	<ul style="list-style-type: none"><li>Added management of 4.00 and 6.000 RPM scale.</li></ul>
<b>Slaves</b>	<b>Version</b>	<b>Changes – Additions</b>
DaVid Slave Expansion	22.02	

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**March 20<sup>th</sup> 2006****Firmup\_MXLDAVID\_060320.exe**

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<b>Logger</b>	<b>Version</b>	<b>Changes – Additions</b>
MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.52	<ul style="list-style-type: none"><li>Fixed visualization on display of gear coming from ECU.</li><li>Added management of ECU Yamaha Codes 314 and 316.</li></ul>
<b>Slaves</b>	<b>Version</b>	<b>Changes – Additions</b>

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DaVid Slave Expansion 22.02

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**November 15<sup>th</sup> 2005** **Firmup\_MXLDAVID\_051115.exe**

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**Logger** **Version** **Changes – Additions**

MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.47	<ul style="list-style-type: none"><li>• Fixed conflict between “Gear compute” and CAN handler.</li><li>• Fixed bug concerning speed configuration for MXL PRO 05 systems. It is now possible to configure the four speed following Race Studio 2 management; to say speed 1 and speed 2 together (both ABS speed sensor or both Normal) and Speed 3 and speed 4 separately.</li></ul>
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**Slaves** **Version** **Changes – Additions**

DaVid Slave Expansion	22.02
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**November 11<sup>th</sup> 2005** **Firmup\_MXLDAVID\_051111.exe**

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**Logger** **Version** **Changes – Additions**

MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.46	<ul style="list-style-type: none"><li>• Fixed bug concerning gear calculation: after a first NON positive trial gear re-compute does not work unless all stored data are cleared. It is now possible to repeat the trial without being obliged to make data download. At the end of the calculation the display shows on the static string if calculation is ended (OK) or not (NON OK).</li><li>• Corrected compute of temperature values in °F.</li><li>• At restart ECU CAN does no more disturb the net.</li><li>• Neutral gear works also if Neutral potentiometer output is negative.</li><li>• Race Studio 2 can send a custom welcome message at re-start.</li></ul>
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**Slaves** **Version** **Changes – Additions**

DaVid Slave Expansion	22.02
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**August 23<sup>rd</sup> 2005** **Firmup\_MXLDAVID\_050823.exe**

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**Logger** **Version** **Changes – Additions**

MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.45	<ul style="list-style-type: none"><li>• Fixed bug: recorded data recall screen did not exit back properly to the normal screen. Data acquisition did not re-start automatically.</li></ul>
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**Slaves** **Version** **Changes – Additions**

DaVid Slave Expansion	22.02
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**July 11<sup>th</sup> 2005** **Firmup\_MXLDAVID\_050711.exe**

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**Logger** **Version** **Changes – Additions**

MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.44	<ul style="list-style-type: none"><li>• Added support for Video Configuration reading for DaVid Slave included in Race Studio 2.20.13</li><li>• Fixed bug: shift lights and alarm leds did not work properly in demo mode.</li></ul>
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**Slaves** **Version** **Changes – Additions**

DaVid Slave Expansion	22.02	<ul style="list-style-type: none"><li>• Added support for Video Configuration reading for DaVid Slave included in Race Studio 2.20.13</li><li>• Modified management of “Video Numeric Objects”</li></ul>
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- Modified Free Time management in lap graphic object: Last lap time is shown for 5 seconds.

June 21<sup>st</sup> 2005

**Firmup\_MXL\_050621.exe**

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Logger	Version	Changes – Additions
MXL Strada – Pista – PRO – PRO 05 – Master for DaVid Slave Expansion version	14.43	<ul style="list-style-type: none"><li>• Improved gear compute:<ol style="list-style-type: none"><li>1. compute needed time is 1/10 than before.</li><li>2. Corrected compute in some particular cases like when recording lap and recognition of a gear less than declared (like, for instance when starting engaging second gear for compute lap).</li></ol></li><li>• Added 1/5 RPM multiply factor: this feature will be available from Race Studio 2.20.13 (coming next week)</li><li>• Added Forecast Lap time management:<ol style="list-style-type: none"><li>1. First page on display is called “RTSPL” that stays for Real Time Split and shows each 100 m gap between current lap and best lap time.</li><li>2. Second page on display is called “FORE” that stays for forecast and is forecast lap time.</li><li>3. Forecast and Real Time Split computed using previous lap as reference have been removed.</li><li>4. If “Odometer instead of Lap time” checkbox is enabled Real Time Split and Forecast are not shown.</li></ol></li></ul>

May 24<sup>th</sup> 2005

**Firmup\_MXL\_050524.exe**

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Logger	Version	Changes – Additions
Strada – Pista – PRO – PRO 05	14.33	<ul style="list-style-type: none"><li>• Corrected calculated gear number Speed/RPM from ECU.</li><li>• Improved “None” ECU Driver management to save compatibility with very first version.</li></ul>

May 5<sup>th</sup> 2005

**Firmup\_MXL\_050505.exe**

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Logger	Version	Changes – Additions
Strada – Pista – PRO – PRO 05	14.32	<ul style="list-style-type: none"><li>• Improved cold juncture management.</li><li>• Starting from this version onward it is no more necessary analog channels calibration.</li><li>• Added Lap Time Forecast.</li><li>• Exceeding of Analog Channels end of scale is no more indicated with “_ _ _” or with “FS”, but with its real value.</li></ul>

April 7<sup>th</sup> 2005

**Firmup\_MXL\_050407.exe**

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Logger	PCB(*)	Version	Changes – Additions
Strada – Pista - PRO	MXL 10	14.23	<ul style="list-style-type: none"><li>• No changes since last firmware version.</li></ul>
PRO 05	MXL 15	14.25	<ul style="list-style-type: none"><li>• Fixed gear visualization.</li></ul>

(\*) Printed Circuit Board

March 25<sup>th</sup> 2005

**Firmup4\_MXL\_050325.exe**

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Logger	Version	Changes – Additions
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Strada – Pista - PRO	14.23	<ul style="list-style-type: none"><li>• Added Prophetic Lap time function.</li><li>• Battery is visible on one of the analog channels.</li><li>• Channel on alarm warning message disappears after 5 seconds.</li></ul>
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**February 17<sup>th</sup> 2005**      **Firmup4\_MXL\_050217.exe**

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Logger	Version	Changes - Additions
Strada – Pista - PRO	14.22	<ul style="list-style-type: none"><li>• Fixed bug: a filter were applied also when none was provided for.</li></ul>

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**December 17<sup>th</sup> 2004**      **Firmup4\_MXL\_041217.exe**

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Logger	Version	Changes - Additions
Strada – Pista - PRO	14.21	<ul style="list-style-type: none"><li>• In addition to firmware updating, FirmUp behaves as follows depending on the kind of installed USB driver:<ol style="list-style-type: none"><li>1. Version 5.22 (up to Race Studio 2.17.18): updates firmware (and possibly booter too), but makes no changes to the driver.</li><li>2. Version 5.22 [VID = 0471] – Version 10.01 [VID = 0471] (From Race Studio 2.20.01 onward): updates to driver 10.01 (if not already installed and for Windows XP Service Pack 2 only), then updates firmware (and/or booter) to communicate with USB using VID 11 CC</li></ol></li><li>• Starting form now it can work properly with VID = 11cc.</li></ul>

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**December 6<sup>th</sup> 2004**      **Firmup4\_MXL\_041206.exe**

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Logger	Version	Changes - Additions
Strada – Pista - PRO	14.20	<ul style="list-style-type: none"><li>• Fixed bug: improved gain calibration.</li></ul>

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**November 16<sup>th</sup> 2004**      **Firmup4\_MXL\_041104.exe**

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Logger	Version	Changes - Additions
Strada – Pista - PRO	14.18	<ul style="list-style-type: none"><li>• No firmware changes since last release.</li><li>• Support for new USB drivers (10.01) made official; still supports old USB drivers (up to Race Studio 2.17.xx).</li></ul>

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**November 4<sup>th</sup> 2004**      **Firmup\_MXL\_041104.exe**

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Logger	Version	Changes - Additions
Strada – Pista - PRO	14.18	<ul style="list-style-type: none"><li>• Fixed bug: in some cases the odometer was imprecise.</li><li>• First lap could be erroneously be considered as BEST LAP.</li></ul>

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**August 24<sup>th</sup> 2004**      **Firmup\_MXL\_040824.exe**

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Logger	Version	Changes - Additions
Strada – Pista - PRO	14.17	<ul style="list-style-type: none"><li>• Fixed bug: in some cases the thermocouples didn't work.</li></ul>

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**August 4<sup>th</sup> 2004**      **Firmup\_MXL\_040804.exe**

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Logger	Version	Changes - Additions
Strada – Pista - PRO	14.16	<ul style="list-style-type: none"><li>• Fixed minor bugs concerning “checksum” and data recording.</li></ul>
<b>July 13<sup>th</sup> 2004</b>	<b>Firmup_MXL_040713.exe</b>	
<b>Logger</b>	<b>Version</b>	<b>Changes - Additions</b>
Strada – Pista - PRO	14.15	<ul style="list-style-type: none"><li>• Added support for MXL Strada.</li><li>• When shows odometer instead of lap time is possible to see partial odometer too.</li><li>• Bug Fixed: pt100 on channel 1 was not converted to °F.</li></ul>
<b>July 2<sup>nd</sup> 2004</b>	<b>Firmup_MXL_040702.exe</b>	
<b>Logger</b>	<b>Version</b>	<b>Changes - Additions</b>
Strada – Pista - PRO	14.14	<ul style="list-style-type: none"><li>• Added ODOMETER visualization instead of Lap time.</li><li>• Added new RPM scales: 14,000 and 18,000 RPM.</li><li>• Fixed bug concerning filters to sample up to 500 Hz.</li><li>• Fixed minor visualization bugs.</li></ul>
<b>May 6<sup>th</sup> 2004</b>	<b>Firmup_MXL_040506.exe</b>	
<b>Logger</b>	<b>Version</b>	<b>Changes - Additions</b>
Strada – Pista - PRO	14.13	<ul style="list-style-type: none"><li>• Added support for “GEAR channel with NEUTRAL signal”.</li><li>• Fixed bug: CH_1 Alarm did not work if RPM alarm was disabled.</li><li>• Fixed bug: when the gauge triggered a lap, lap time was displayed but the gauge did not step back to the previously displayed measurements. Now lap time is displayed for 10 seconds.</li></ul>
<b>May 3<sup>rd</sup> 2004</b>	<b>Firmup_MXL_040503.exe</b>	
<b>Logger</b>	<b>Version</b>	<b>Changes - Additions</b>
Strada – Pista - PRO	14.12	<ul style="list-style-type: none"><li>• Fixed bug: RPM bargraph was locked at 20,000 RPM.</li><li>• Fixed minor bugs concerning gear channel sampled from “on-board” gear sensor (very rare).</li></ul>
<b>April 29<sup>th</sup> 2004</b>	<b>Firmup_MXL_040429.exe</b>	
<b>Logger</b>	<b>Version</b>	<b>Changes - Additions</b>
Strada – Pista - PRO	14.11	<ul style="list-style-type: none"><li>• Improved ECU interface.</li><li>• Added feature: managing of LAP / SPLIT beacon transmitters.</li><li>• The RPM alarm led is always switched on when you reach an RPM value greater than the threshold value.</li><li>• During download, the display shows “DOWNLOADING DATA”.</li><li>• Fixed minor visualization bug in DEMO mode.</li><li>• Fixed bug: the static string overwrote the alarm warning inside the text bar.</li></ul>
<b>April 19<sup>th</sup> 2004</b>	<b>Firmup_MXL_040419.exe</b>	
<b>Logger</b>	<b>Version</b>	<b>Changes - Additions</b>

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Strada – Pista - PRO	14.10	<ul style="list-style-type: none"><li>• Fixed memory management bug: sometimes data were not stored inside the gauge's memory.</li><li>• Added feature: when an alarm led switches on, the channel name is displayed inside the gauge's text bar.</li><li>• Added feature: the gauge is able to display also potentiometers and lambda sond.</li><li>• Fixed split times management.</li></ul>
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**March 26<sup>th</sup> 2004**      **Firmup\_MXL\_040326.exe**

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Logger	Version	Changes - Additions
Strada – Pista - PRO	14.08	<ul style="list-style-type: none"><li>• Added maximum RPM alarm.</li><li>• Added management up to 8 custom sensors.</li></ul>

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**March 22<sup>nd</sup>. 2004**      **Firmup\_MXL\_040322.exe**

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Logger	Version	Changes - Additions
Strada – Pista - PRO	14.07	<ul style="list-style-type: none"><li>• Improved gear calculation algorithm.</li></ul>

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**March 19<sup>th</sup>. 2004**      **Firmup\_MXL\_040319.exe**

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Logger	Version	Changes - Additions
Strada – Pista - PRO	14.06	<ul style="list-style-type: none"><li>• Speed value is shown in the upper right corner of the display.</li><li>• Fixed minor visualization bugs.</li></ul>

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**March 18<sup>th</sup>. 2004**      **Firmup\_MXL\_040318.exe**

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Logger	Version	Changes - Additions
Strada – Pista - PRO	14.05	<ul style="list-style-type: none"><li>• Fixed bug concerning speed calculation.</li></ul>

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**March 17<sup>th</sup>. 2004**      **Firmup\_MXL\_040317.exe**

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Logger	Version	Changes - Additions
Strada – Pista - PRO	14.04	<ul style="list-style-type: none"><li>• First official version. All previous versions have to be considered as “prototypes”.</li></ul>