



Long Road Racing

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LongRoadRacing.com

Global MX-5 Cup Car Technical Service Bulletin #2-28-17A

ADDITIONAL INFORMATION

Summary: AiM has updated Race Studio 3 (RS3) to version 3.14 and can be down loaded [here](#) or directly from your current installation of RS3 (top right, click on the blue cloud). It is recommended that you update your laptop to 3.14.00 and MXL2 firmware to 01.24.14 with these new versions of soft & firmware. Once you do, a new AiM MXL2 dash configuration will be required. Please click [here](#) (Global MX-5 Cup Race Car - AiM Configurations) to down load the corresponding config files for your AiM dash so that it will properly communicate with the GEMS ECU.

Detailed information: In Reference to Global MX-5 Cup Car Technical Service Bulletins #2-28-17A ECU Firmware and Calibration File Update and #2-28-17C Pit lane speed limiter, AiM has updated RaceStudio3 with the driver for the updated GEMS ECU, firmware version 01L30. Update AiM's RaceStudio3 to version 3.14.00 to access the new driver, MX5_ND_GEMS. Please note that this is titled the same as the old driver except with underscores in the title, so it's important to be certain that RaceStudio3 is updated to access the new driver.

Six standard AiM configurations have been created for use depending on which options you are running on your vehicle. Options available on the vehicles are:

1. Pit Lane Speed.
2. (New Temps) Transmission Temperature, Oil Temperature and Oil Pressure sensors.

Standard AiM configuration combinations attached are as follows:

- V7.0, Basic configuration no Pit Speed and no New Temps.
- V7.1, Pit Speed with no New Temps.
- V7.2, New Temps with no Pit Lane Speed.
- V7.3, Pit Speed with New Temps
- V7.4, Dyno with New Temps (No ABS Alarm, No Pit Speed CAN Output, not for track use)
- V7.5, Dyno with No New Temps (No ABS Alarm, No Pit Speed CAN Output, not for track use)

Please note that if you are running a vehicle with the pit speed limiter the AiM configuration will need to be updated before running the car on a chassis dyno to a configuration that does not have the pit speed CAN outputs. Running on the dyno generates ABS errors and this causes confusion

with the CAN outputs and can trigger pit speed. By using a dash configuration with no pit speed CAN output you eliminate this possibility.

It is also important to only run a configuration with the Pit Speed CAN outputs on track if you have the Pit Speed Selector Harness installed in your vehicle. This eliminates the possibility of pit speed being triggered on accident.

All alarms in these configurations are set to display a temporary text message to indicate the alarm, however the associated light will stay displayed as long as the alarm condition is present. All alarms will clear themselves when the alarm condition is no longer present except for the O2 Unplugged error, this error must be cleared by pressing a button after the O2 sensor is plugged back in and connected properly.

Lastly, you must have your ECU updated to the new 01L30 firmware before updating your AiM configurations to the new driver. The new driver will not properly report ABS errors with the now outdated 01L15 firmware.

You can identify which firmware your ECU has on it by a sticker shown on the top edge of the ECU as shown below.



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REQUIRED: 2017 Global MX-5 Update: ECU Firmware and Calibration File Update

2017 ECU Updates

1. Firmware update to version 01L30. (Required)
2. Calibration file update to Version 6.4 (Required)
3. AiM Configuration Update to use correct ECU driver for GEMS 01L30 ECU. (Required)

Cost for this update:

- For chassis 0 – 117 is \$400.00 plus shipping and handling
- 103, 104 & 118 and above, the cost was included in your original purchase price


New Features:

1. Error Reporting:

- a. On the previous ECU version 01L15 there was a combined Engine Error Warning that could have been an error associated to any one of, or combination of the following 9 issues.
 - i. Throttle Body
 - ii. AIT Sensor
 - iii. ECU calibration checksum
 - iv. Lambda Value
 - v. Lambda Heater
 - vi. MAP Sensor
 - vii. Throttle Pedal
 - viii. ABS System Error (ABS ERROR alarm display takes priority over Engine Error)
 - ix. Loss of CAN signal from ABS
- b. The new ECU Firmware version 01L30 reports all errors separately. Now the AiM Configuration can include separate error alarms for the following:
 - i. Error_Lambda1: O2 Sensor Error
 - ii. Error_MAP: MAP Sensor Error (Drivers Side Rear Engine)
 - iii. Error_Pedal: Throttle Pedal Error
 - iv. Error_EE_Checksum: ECU Calibration File Error
 - v. Error_O2: O2 Sensor Error
 - vi. Error_ABS: Wheel Speed Sensor, Ungrounded Yaw Sensor, ABS System Error, ABS CAN Signal Error.
 - vii. Error_THROTTLE_B: Throttle Body Error
 - viii. Error_AIT: Air Intake Temperature Sensor Error. (Commonly seen when car is heat soaked and temp is over 170 deg F.
 - ix. Error_LAMBDA_HEAT: Error where Lambda Sensor Heater is not getting power.
- c. The AiM MXL2 configuration will need to be updated to use the new GEMS 01L30 ECU driver to ensure all new error functions are being logged. A standard base configuration with updated basic alarms is available from Long Road Racing and Mazda Motorsports.

Installation:

ECU Firmware and Calibration File:

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1. ECU's can only be updated through arrangement with Long Road Racing.
 - a. ECU's may be updated at Official Global MX-5 Cup track events by Long Road Racing. Payment of \$400 will be expected at the time that services are provided. Please notify Long Road Racing prior to the event for planning purposes.
 - OR -
 - b. ECU's may be shipped to Long Road Racing to be updated. Typical turn-around-time is 24 hours.
 - i. If returned to you via 2nd day UPS the total cost is \$440
 - ii. If returned to you via next day UPS the total cost is \$475

If you have any questions about this Technical Bulletin, please contact Glenn Long at:
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