AiM User Guide

AiM Simulator Technology

Release 1.00

Introduction

It is now possible to manage the telemetry data produced by the most popular simulators.
Up to now, the compatibility is guaranteed for the following simulators:

	**iRacing**	www.iracing.com
	**Assetto Corsa Competizione**	www.assettocorsa.net/competizione
	**rFactor2**	www.rfactor.net (available very soon)

It is possible to:

- stream the data produced by the simulators to your AiM dash during the test
  or/and
- import all the data for analysis (our Race Studio 2 Analysis software and, when ready, Race Studio3 Analysis software) getting them from the files produced by the simulator itself.

There are few steps it is necessary to execute for using our 'Simulator Technology'.

1
What to do to get the data stream OnLine.

This feature allows you to have the data shown on your AiM device. The devices that may receive the data stream are:

MXS 1.2, MXS 1.2 Strada, MXP, MXP Strada, MXG 1.2, MXG 1.2 Strada.

Please, refer to our web page www.aim-sportline.com Documentation – Products section to check the related documentations (for example https://www.aim-sportline.com/download/doc/eng/mxs1.2-mxp-mxg1.2/MXG1.2+MXP+MXS1.2_user_guide_100_eng.pdf)

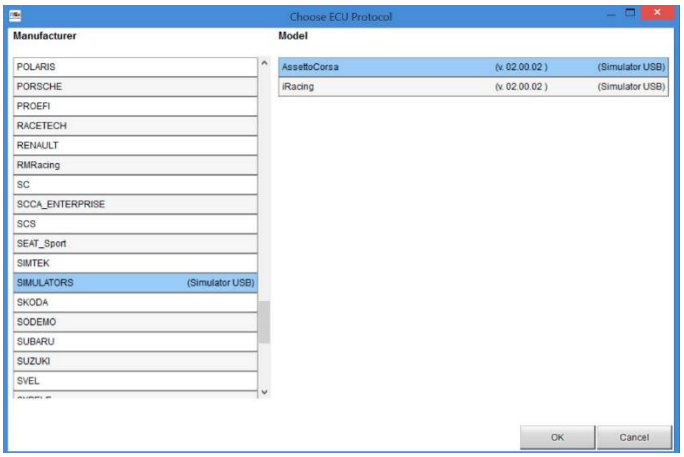
Please, check the firmware version in your dash: it has to be 2.32.72 or more recent

1.1
Configure your dash

The data produced by your simulator are transmitted to your dash through USB connection by our software "**AiM Simulator Manager**", described here down.
The data are managed by the dash like they come from a true ECU, so, first of all, you need to configure it selecting the specific "ECU" driver.

You simply select SIMULATOR, as manufacturer, and select the desired model:

- **iRacing**
- **AssettoCorsa**
- **Rfactor** (coming soon)



Then, following the instructions in the proper manual of your device you must configure the display pages.

Please, use **only** the channels in this specific "ECU" driver or the following subset of the internal AIM channels (**Lap Channels**, **Odometer** and **Internal**).
You cannot use the **GPS** internal channels, as there is no simulated GPS information.

Please note:
AIM device is not supposed to record the streamed data (the data are already recorded during the test inside your PC) so **you may enable the transmission only of the channels displayed on the display;**

Be careful not to change the names of the channels of the ECU protocol, otherwise the stream will not work.

Transmit the configuration to your device and this first step is completed.

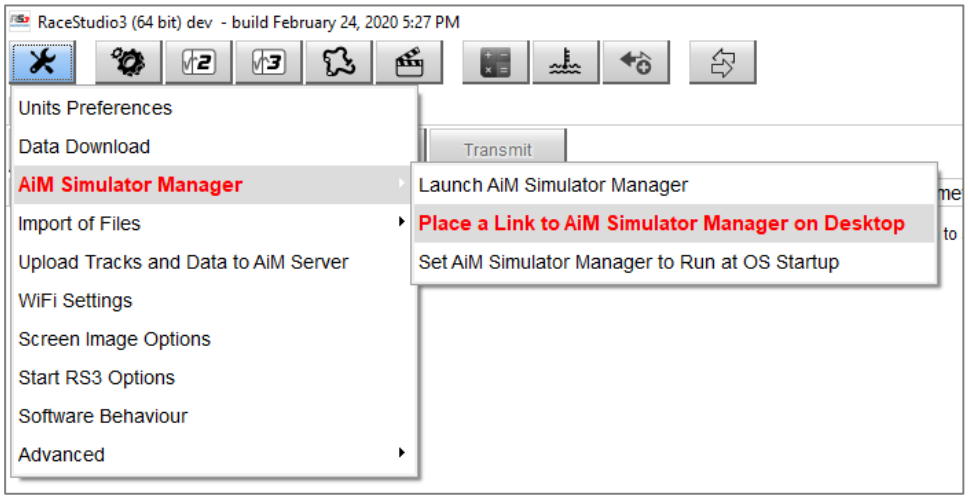
1.2
Enable the data transmission to the dash

The capability to stream these data to our devices, and to save them for data analysis (*), is managed by Race Studio 3 but by a small application, named "**AiM Simulator Manager**". It needs to be running while the simulator is running (hence the need for it to be as small as possible).

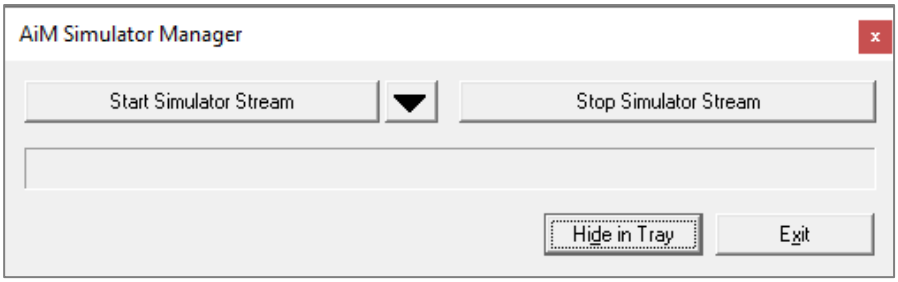
(*) simulators like **iRacing** normally save data in your system documents folder, while, for what we know **Assetto Corsa Competizione** and **rFactor2** don't, so this **AiM Simulator Manager** does it for you, and save the data in your "RaceStudio3/user/data folder".

The AiM Simulator Manager Application is installed together with Race Studio 3. You need only to decide whether you want an icon on your desktop and launch it manually or if you want it to be automatically started at OS startup. You can do everything inside RaceStudio3.

For either of these choices, please open the settings menu, look for the "AiM Simulator Manager" menu, then click on "Place a Link to AiM Simulator Manager on Desktop" or "Set AiM Simulator Manager to Run at OS Startup", as shown in the next screenshot.



The same operation is needed to remove the desktop icon and to remove the link from the startup menu.
After having enabled the telemetry in the simulator (verify in simulator instructions if it is needed), when the simulator is running, run this application and click the proper "Start" button the first time to choose which simulator you're using (following image). This will start the stream to the AiM device connected via USB.



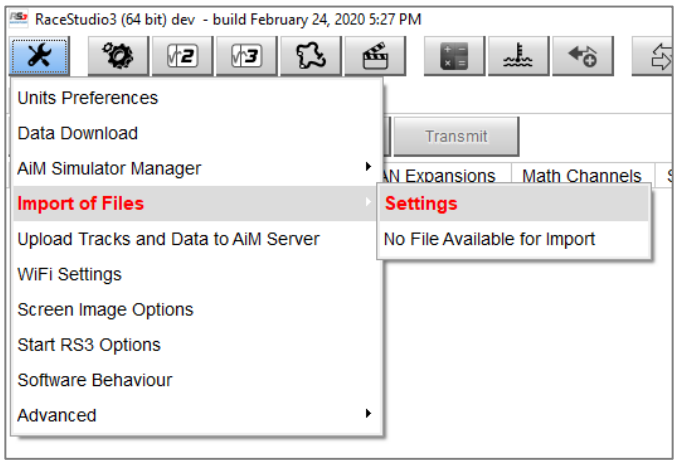
At this point, you will see that your dash receives the data properly.

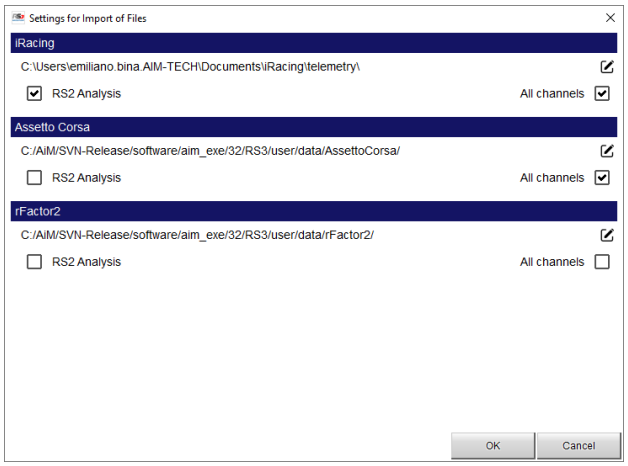
The "Stop" button will let you terminate the stream. The stream will anyway terminate when the simulator stops. The "Stop" button is meant only for the purpose of changing the configuration of the AiM device while the simulator is going on transmitting the data (at the box, in the middle of a race, for example!).

2
What to do to import the data of your test and analyze them.

2.1
Setting the Import of Files

The AiM RaceStudio3 constantly monitor the folder(s) in which you save the data produced by your simulators, in order to automatically inform you about how many simulation test files you have to import.
Please open the Settings menu, click on “Import of Files”, and choose “Settings” (following left picture).
You will be prompted the window shown below (following right picture).





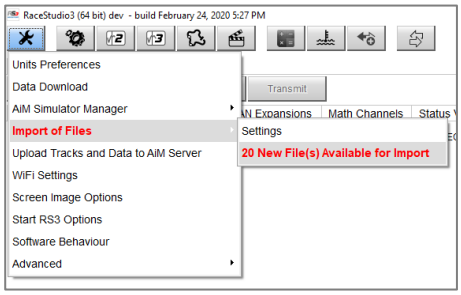
Flagging the RS2/RS3 checkboxes you will ask Race Studio to monitor the folder in which the simulator saves the telemetry files.

As you see, you may set some parameters:

- **Race Studio Analysis 2 and/or Race Studio Analysis 3** files conversions. Up to now, only Race Studio Analysis 2 is available, but the new coming, much more powerful Race Studio Analysis 3 will be available very soon.
- **"Basic channels" or "All the channels"**: some simulators produce a lot of channels, so, our advice, unless you are not a very expert driver, is to start with basic channels, more than enough for evaluating your behavior on the tracks and the tuning of your car.
  Race Studio 3 features default data folders where to save your data, but in case you like to change them you can click on the icon at the full right of the folder path line and choose another folder.

2.2
Converting files for Race Studio Analysis 2

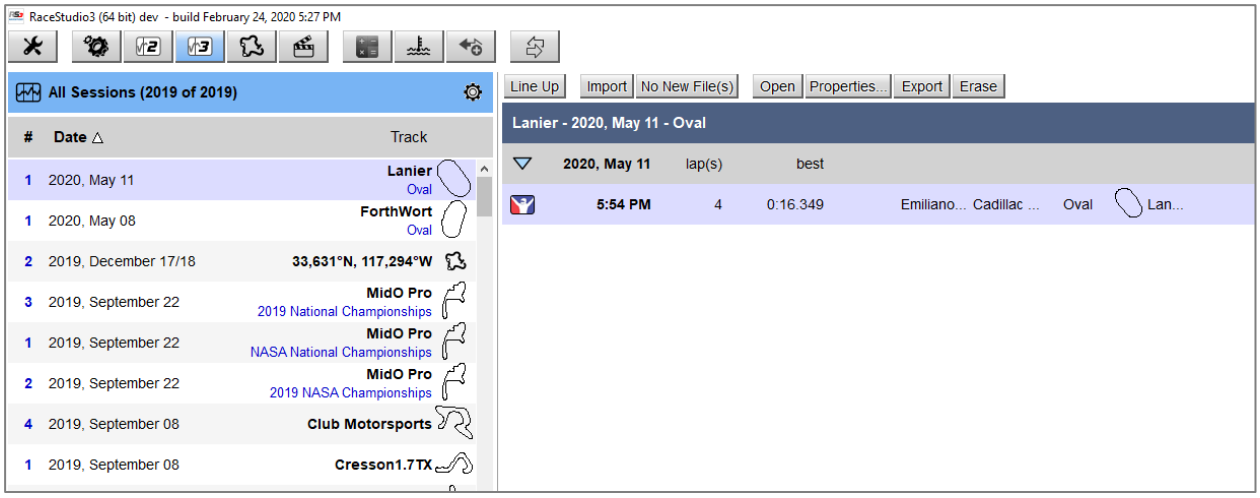
To start conversion to Race Studio Analysis 2 proprietary .**drk** file format, click the menu "Import of Files" and select submenu that states how many files are available for import (following image).



2.3
Converting files for Race Studio Analysis 3

Race Studio Analysis 3 is not yet officially available, but as soon it will be ready. Up to now, it is available in alpha version only for a very limited number of technicians that are testing and evaluating it, so, let us anticipate what to do for importing the data in it.

In the sessions database there will be a button icon visible when there's data ready to be imported. The same icon will take you to the import settings window we have shown right above here.



Appendix 1
Data Streams

Here down the available channels produced by the different simulators. The names of the channels are the official ones: please, refer to the documentation of the simulator for any clarification you need about them.

Appendix 1.1
AssettoCorsa Competizione

Basic channels:

RPM	VerticalAcc	PerfMeter	BestTime
Throttle	InlineAcc	Clutch	DistTraveled
Brake	PitchRate	BrakeBias	IsInPit
Fuel	YawRate RollRate	Status	CurrentSector
SteerAngle	pitLimiterOn	SessionType	LastSectorTime
Speed	ABS	CompletedLaps	PenaltyTime
Gear	TractionControl	Position CurrentTime	Flag
LateralAcc	Heading	LastTime	IsInPitLane

Advanced channels:

coord_x	LRAngSpeed	LRBrakeT	TrackTemp
coord_y	RRAngSpeed	RRBrakeT	ForceFeedback
coord_z	LFTireWear	LFTireSurfTi	EngineBrake
carPosition	RFTireWear	RFTireSurfTi	ERSrecLevel
world_vel_x	LRTireWear	LRTireSurfTi	ERSpowLevel
world_vel_y	RRTireWear	RRTireSurfTi	ERSheatCharg
world_vel_z	LFDirtLevel	LFTireSurfTm	ERSisCharg
world_vel_x	RFDirtLevel	RFTireSurfTm	kersCharge
world_vel_y	LRDirtLevel	LRTireSurfTm	kersInput
world_vel_z	RRDirtLevel	RRTireSurfTm	KERS_kJ_lap
LFSlip	LFTireCoreT	LFTireSurfTo	DRS
RFSlip	RFTireCoreT	RFTireSurfTo	DRSavailable

LRSlip
RRSlip
LFLoad
RFLoad
LRLoad
RRLoad
LFPressure
RFPressure
LRPressure
RRPressure
LFAngSpeed
RFAngSpeed
LRTireCoreT
RRTireCoreT
LFCamber
RFCamber
LRCamber
RRCamber
LFSusp
RFSusp
LRSusp
RRSusp
LFBrakeT
RFBrakeT
LRTireSurfTo
RRTireSurfTo
Pitch
Roll
cgHeight
autoShifterOn
RideHeightF
RifeHeightR
TurboBoost
Ballast
AirDensity
AirTemp
DRSenabled
AIcontrolled
P2Pactivations
P2Pstatus
CurrentMaxRPM
SurfaceGrip
MandatoryPitDone
WindSpeed
WindDirection

Appendix 1.2
iRacing

Basic channels:

RPM
Gear
ManifoldPress
OilLevel
OilPress
OilTemp
FuelLevel
FuelLevelPct
FuelPress
Voltage
WaterLevel
WaterTemp
Speed
LatAccel
LongAccel
VertAccel
YawRate
RollRate
PitchRate
VelocityX
VelocityY
VelocityZ
LFBrakeLinePress
LFspeed
VLRspeed
RFBrakeLinePress
RFspeed
RRBrakeLinePress
RRspeed
YawNorth
Brake
Clutch
Throttle
SteeringWheelAngle
DriverMarker
Lap
SessionNum
LapDist
LapDistPct
AirTemp
CpuUsageBG
IsOnTrack
IsOnTrackCar
OnPitRoad
PlayerCarClassPosition
PlayerCarPosition

Advanced channels:

EngineWarnings
FuelUsePerHour
LRtempCL
LRtempCM
RRwearM
RRwearR
RRshockVel
RRtempCL

ShiftGrindRPM
ShiftGrindIndicatorPct
Yaw
Roll
Pitch
CFrideHeight
CFshockDefl
CFshockVel
CFSRrideHeight
CRrideHeight
CRshockDefl
CRshockVel
LFcoldPressure
LFpressure
LFrideHeight
LFshockDefl
LFshockVel
LFtempCL
LFtempCM
LFtempCR
LFtempL
LFtempM
LFtempR
LFwearL
LFwearM
LFwearR
LRcoldPressure
LRpressure
LRrideHeight
LRshockDefl
LRshockVel
LRtempCR
LRtempL
LRtempM
LRtempR
LRwearL
LRwearM
LRwearR
RFcoldPressure
RFpressure
LRtempCL
LRtempCM
LRtempCR
LRtempL
LRtempM
LRtempR
LRwearL
LRwearM
LRwearR
RFcoldPressure
RFpressure
RRshockVel
RRtempCL
RRtempCM
RRtempCR
RRtempL
RRtempM
RRtempR
RRwearL
RRrideHeight
RRshockDefl
SteeringWheelTorque
SessionState
SessionLapsRemain
PitOptRepairLeft
PitRepairLeft
SessionTime
RFrideHeight
RFshockDefl
RFshockVel
RFtempCL
RFtempCM
RFtempCR
RFtempL
RFtempM
RFtempR
RFwearL
RFwearM
RFwearR
RRcoldPressure
RRpressure
SessionTimeRemain
AirDensity
AirPressure
FogLevel
RelativeHumidity
TrackTemp
TrackTempCrew
WindDir
WindVel
Skies
BrakeRaw
RRtempCM
RRtempCR
RRtempL
RRtempM
RRtempR
RRwearL
RRwearM
RRwearR
SteeringWheelTorque
SessionState
SessionLapsRemain
PitOptRepairLeft
PitRepairLeft
SessionTime
ThrottleRaw
FrameRate
SteeringWheelAngleMax
SteeringWheelPctDamper
SteeringWheelPctTorque
SteeringWheelPctTorqueSign
SteeringWheelPctTorqueSignStops
EnterExitReset
PitSvFlags
PitSvFuel
PitSvLFP
PitSvLRP
PitSvRFP
PitSvRRP