AiM Infotech

Marelli SRA Customer Protocol

Release 1.02









1 Software setting

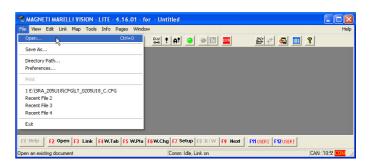
This tutorial explains how to connect Marelli SRA ECU to AiM devices using a Customer Protocol.

Marelli SRA ECU needs a software setting to correctly communicate with AiM devices. To perform it use Marelli "Vision" software and follow these instructions:

• Install and run it and follow the following instructions.

Follow this path:

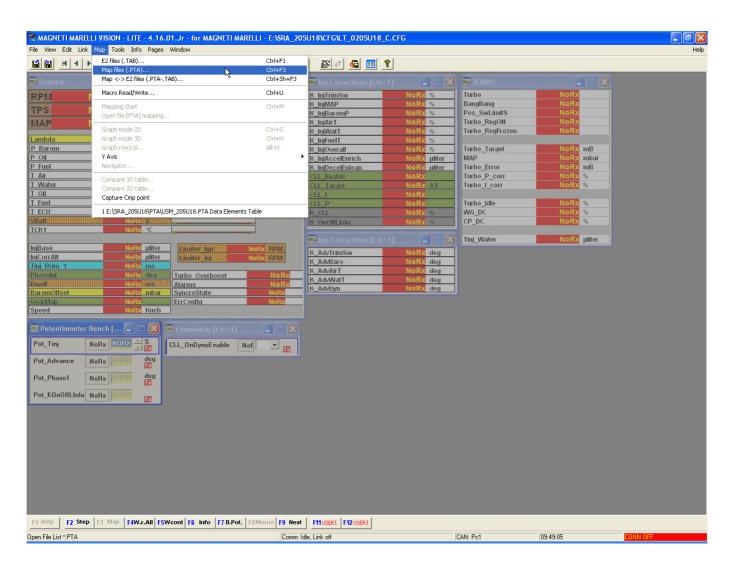
- File -> Open
- Select "SRA_XXXXX" folder
- Select "CFG" sub folder
- Click "Open"



Open File		? 🛛
Look in:	🔁 SRA_205U18 💽 🗲 🖻 📸	
CFG DOC PTA Soft		
File name:		Open
Files of type	e: CFG (*.cfg)	Cancel



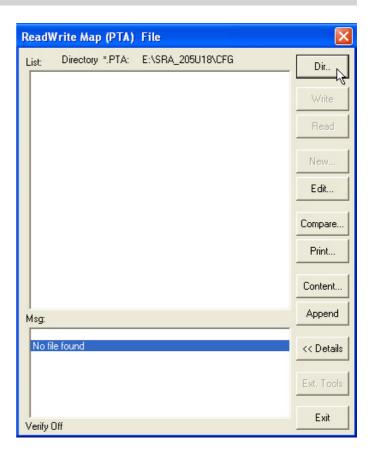
- Select the configuration to open and click "Open"
- "Vision" software main window shows up
- follow this path: "Map -> Map files (PTA)..."



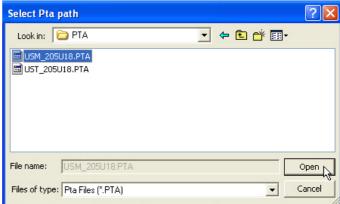




• Click "Dir.."



- Select the file to open
- Click "Open"





• Click "Edit..."

ReadWrite Map (PTA) File	×
List: Directory *.PTA: E:\SRA_205U18\P	Dir
USM_205U18 Bin SRA2.05.U18 - B UST_205U18 Bin SRA2.05.U18 - B	ase SRA Calibra ase SRA Calibra Write
	Read
	New
	Edit
	Compare
	Print
	Content
Msg:	Append
	<< Details
	Ext. Tools
Verify Off	Exit

• Double click "CAN LINK"

PTA table: C:\Programmi Header Comment	VISIONISKA-E PTO	C Header	• Table	
		ie neddo <u>r</u>		
Title	Reference	Enab.	Sz	
==> TEMPERATURE: FUEL		GROUP		
==> TEMPERATURE: OIL		GROUP		
==> TEMPERATURE: WATER		GROUP		
==> THERMOCOUPLES		GROUP		
==> ROTARY SWITCHES		GROUP		
==> BATTERY VOLTAGE		GROUP		
		?	=000000	
17 - COMMUNICATIONS		GROUP		
==> CAN LINK		GROUP		
==> DASHBOARD		GROUP		
==> VISION		GROUP		
		?	=000000	
Kill Switch for the Dyno	EE.Lim.kill	×	=00	
		?	=000000	
LABELS		GROUP		
E2 Start Addr.(*.TAB) 400000	<u>U</u> NIT Offset A	ddr. 0	FIND	





• Double click "CAN IDs"

Header Co <u>m</u> ment		C Header	Table	
3 possible CAN IDs. CAUTION : HEXADECIMAL format. Note: selection of the CAN line with '	'Data acquisition CAN lin	e''		
Title	Reference	Enab.	Sz	
==> CAN LINK				
DATA ACQUISITION		?	=00	
Data acquisition CAN line	EE.CanU.Acquisi	X	=00	
Frequencies Repartition Table	EE.SizeFreqTele	×	1x8x1	
Data Elements Table	EE.TelemTable	X	4x32x1	
		?	=00	
EXPANSION MODULES		?	=00	
Selection module present on CAN	EE.CanExpMod.	×	1x15x1	
Expansion modules CAN line	EE.CanU.Expans	х	=00	
		?	=00	
PROG. CAN PACKETS		2	=00	
CAN IDs	EE.CanU.IdUser	×	3x1x1	
CAN packets definition	EE.CanU.tbl US	X	4x3x1	
E2 <u>S</u> tart Addr.(*.TAB) 400000	UNIT Offset Addr.	0	FIND	

- Fill "Edit table" with the following digits:
 - o column (1): 280
 - o column (2): 284
 - o column (3): 288

Edit Table C:\Programmi\vision\SRA-E ProTeam_Static_Correction_Pat1_mod_									
<u>Comment</u> Unit:	3 possible CAN IDs. CAUTION : HEXADECIMAL format. Note: selection of the CAN line with "Data acquisition CAN line"								
1,1,1 (1) (1) 0280	(2) (3) 0284 0288								

• Double click "CAN packets definition"

Header Comment		C Header	Table	
Definition of the CAN packet for each CAUTION : HEXADECIMAL format.	n ID (freq = 50Hz)			
Title	Beference	Enab.	Sz	
==> CAN LINK				
DATA ACQUISITION		?	=00	
Data acquisition CAN line	EE.CanU.Acquisi	×	=00	
Frequencies Repartition Table	EE.SizeFreqTele	×	1x8x1	
Data Elements Table	EE.TelemTable	х	4x32x1	
		?	=00	
EXPANSION MODULES		?	=00	
Selection module present on CAN	EE.CanExpMod.	×	1x15x1	
Expansion modules CAN line	EE.CanU.Expans	Х	=00	
		?	=00	
PROG. CAN PACKETS		?	=00	
CANIDs	EE.CanU.IdUser	×	3x1x1	
CAN packets definition	EE.CanU.tbl_US	X	4x3x1	
N.				
E2 <u>S</u> tart Addr.(*.TAB) 400000	UNIT Offset Addr.	0	FIND	

- Fill "Edit Table" with the following digit:
 - o row 0280: 0, 1, 2, 7
 - o row 0284: 6, 5, 26, B
 - o row 0288: D, C, 31, A
- Close the window

Edit Table C:\Programmi\vision\SRA-E ProTeam_Static_Correction_Pat1_ma										
Comment Definition of the CAN packet for each ID (freq = 50Hz)										
4,3,1	(1)	(2)	(3)	(4)						
0280	00000000	00000001	00000002	00000007						
0284	00000006	00000005	00000026	0000000B						
0288	00000000	000000C	00000031	0000000A						



The software comes back to the previous page:

• close the window clicking on the top red cross

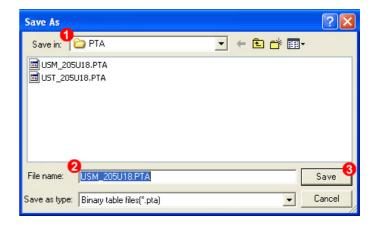
PTA table: C:\Programmi\v	vision\SRA-E ProTe	am_Static_Cor	rection_Pat1_mauro_2.PTA	
Header Co <u>m</u> ment		C Heade <u>r</u>	Table	51
Definition of the CAN packet for each CAUTION : HEXADECIMAL format.	n ID (freg = 50Hz)			
Title	Reference	Enab.	Sz	
==> CAN LINK				
DATA ACQUISITION		?	=00	
Data acquisition CAN line	EE.CanU.Acquisi	×	=00	
Frequencies Repartition Table	EE.SizeFreqTele	×	1x8x1	
Data Elements Table	EE.TelemTable	×	4x32x1	
		?	=00	
EXPANSION MODULES		?	=00	
Selection module present on CAN	EE.CanExpMod.	×	1x15x1	
Expansion modules CAN line	EE.CanU.Expans	×	=00	
		?	=00	
PROG. CAN PACKETS		?	=00	
CAN IDs	EE.CanU.IdUser	×	3x1x1	
CAN packets definition	EE.CanU.tbl_US	X	4x3x1	
E2 <u>S</u> tart Addr.(*.TAB) 400000	<u>U</u> NIT Offset Addr.	0	F <u>I</u> ND	

• Click "Yes" to save changes

Vision V	Vindows Application 🛛 🔀						
Save changes to E:\SRA_205U18\PTA\USM_205U18							
	Ves No Cancel						



- select file destination folder (1)
- fill in file name (2)
- click "Save" (3)



• Click "Exit"

ReadWrite Map (PTA) File	X
List: Directory *.PTA: E:\SRA_205U18\PTA	Dir.,
USM_205U18 Bin SRA2.05.U18 - Bas UST_205U18 Bin SRA2.05.U18 - Bas	e SRA Calibra se SRA Calibra Write Read
	New
	Compare
	Print
	Content
l Msg:	Append
	<< Details
	Ext. Tools
 Verify Off	Exit

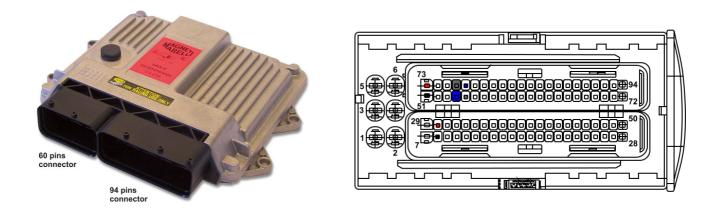
• Click "Tx" on the software icon toolbar

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File	View	Edit	Link	Мар	Tools	Info	Pages	Window			
		M	4 ►	M				•	^{R-W} ! A!	0	DYN



2 Connection to AiM devices

Magneti Marelli SRA ECU features a bus communication protocol based on CAN on the 94 pins front right connector. Here below it is indicated on the left; on the right is connector pinout in detail.



Here below is connection table. As said before the ECU has two CAN lines: CAN0 and CAN1; AiM suggests to use CAN1.

Please note: be sure to never cross CAN High and CAN low of different CAN lines.

94 Pins connector pin	Pin function	AiM cable
76	CAN0 High	CAN+
54	CAN0 Low	CAN-
55	CAN1 High	CAN+
77	CAN2 Low	CAN-
8 or 51	Ground	GND
73 or 30	Battery Positive Pole	9-15 VDC



3 AiM device configuration

Before connecting the ECU to AiM device set this up using AiM Race Studio software. The parameters to select in the device configuration are:

- ECU manufacturer "MARELLI"
- ECU Model "CustomerProtocol"

4 Available channels

Channels received by AiM devices connected to "MARELLI" "CustomerProtocol" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MAR_RPM	RPM
ECU_2	MAR_THROTTLE	Throttle position sensor
ECU_3	MAR_MANIFOLD_PRESSURE	Manifold air pressure
ECU_4	MAR_AIR_T	Intake air temperature
ECU_5	MAR_WATER_T	Engine coolant temperature
ECU_6	MAR_OIL_P	Oil pressure
ECU_7	MAR_GEAR	Engaged gear
ECU_8	MAR_BATTERY	Battery supply
ECU_9	MAR_CONSUMPTION	Fuel consumption
ECU_10	MAR_KLAMBDA	Lambda value
ECU_11	MAR_DIAG	Diagnostic
ECU_12	MAR_GEAR_POS	Gear position