



ELECTRONIC



MOBILITY



ELECTRONICS for MOBILITY

CLIMATE COMMITMENT



ELECTRONICS for MOBILITY



ELECTRONICS

State of the art electronic systems for Mobility applications from concept till serial production , in a close partnership with the market needs and climate commitment strategies . Smart Mobility electronic technology for changing times : Control , Power, Communications, Comfort and Infotainment.

ELECTRONICS

Standard & Custom solutions electronics.

ENGINEERING & PRODUCTION



ENGINEERING

Experienced engineering team as well as advanced hardware & software tools.

HARDWARE

Electronic hardware engineering for Masermic's standard products as well as for custom solutions based in specific requirements.

PRODUCTION

Integral electronic manufacturing from the Process Engineering till Maintenance.

SOFTWARE

Wide range of software solutions for control & power electronics.



RELIABILITY

Electronics systems developed under Automotive standards.

R & D

We drive the R&D outcomes to the most advanced Mobility applications.



MAINTENANCE SERVICE

Hardware and Software maintenance services.





ELECTRONICS for MOBILITY

SCOPE CAPABILITIES



Specifications

Engineering

Homologation

Manufacturing

Technical Support

Innovation



Electronic systems for automotive applications from concept till serial production :

- ⇒ Masermic standard products.
- ⇒ Custom solutions.



**ELECTRONIC ENGINEERING
ELECTRONIC MANUFACTURING**



ELECTRONIC SYSTEMS FOR MOBILITY



ELECTRONICS for MOBILITY



STANDARDS COMPLIANCE BASED IN THE SPECIFIC APPLICATIONS NEEDS.



Certificate of Approval

This is to certify that the Management System of:
Microelectrónica Maser, S.L.

Pol. Kurutz Gain, 6A, 20850 Mendara, Gipuzkoa, Spain

has been approved by LRQA to the following standards:

ISO 9001:2015

Gilles Bessiere - Area Technical Manager
Issued by: Lloyd's Register Quality Assurance España, S.L.U.
for and on behalf of: Lloyd's Register Quality Assurance Limited

Current issue date: 21 February 2019 Original approval(s):
Expiry date: 10 March 2022 ISO 9001 – 11 March 2010
Certificate identity number: 10174267

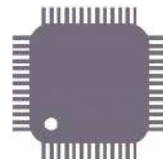
Approval number(s): ISO 9001 – 0038050

The scope of this approval is applicable to:
Design, manufacturing and commercialization of electronic products for, automation, energy, environmental, transport and health sectors



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CONTROL ELECTRONICS



POWER ELECTRONICS



COMMUNICATIONS



SOFTWARE





ELECTRONICS for MOBILITY

R & D CAPABILITIES



Masermic participates in the principal R&D framework programs in Basque Country, Spain and Europe, driving the R&D outcomes to the most advanced Mobility applications.

Masermic has a skilled and experienced engineering team as well as advanced hardware & software tools to develop state of the art electronic systems.



MOBILITY

iADAsys : Autonomous & Assisted driving software/hardware module based in Deep Learning technology.



iACTIVE : Electronics printed and embedded in plastic materials.

iSMC : Electronic power/control module for 2 BLDC motors.





ELECTRONICS for MOBILITY

REFERENCES



Project: ECU modules
Technology: Train Electronics
Scope : Engineering & Manufacturing
Customer: CAF



Project: WINDSCREEN
Technology: Automotive Electronics.
Scope : Engineering & Manufacturing
Customer: ORIBAY Automotive Group



Project: ADAS Systems
Technology: Automotive Electronics.
Scope : Engineering & Manufacturing
Customer: IRIZAR Group



Project: INTEGRAL DOORS CONTROL
Technology: Automotive Electronics.
Scope : Engineering & Manufacturing
Customer: ASTON MARTIN



Project: ELECTRIC WHEELS MOTORS POWERING & CONTROL
Technology: Automotive Electronics.
Scope : Engineering & Manufacturing
Customer: DONFANG YANGTSE_CHINA



Project: POWER WINDOW
Technology: Automotive Electronics.
Scope : Engineering & Manufacturing
Customer: JAGUAR



Project: POWER WINDOW
Technology: Automotive Electronics.
Scope : Engineering & Manufacturing
Customer: SEAT-VOLKSWAGEN

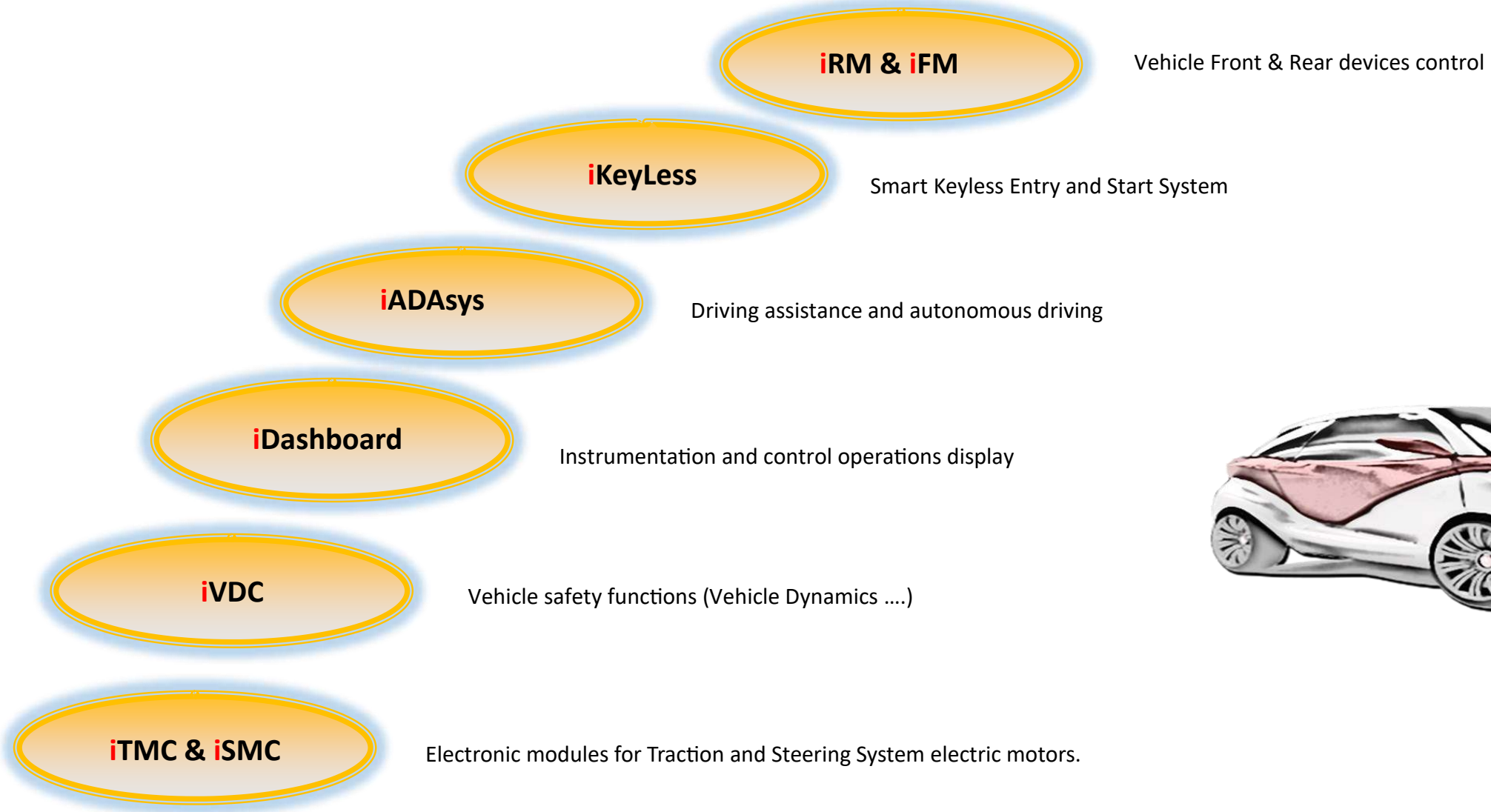


ELECTRONICS for MOBILITY

TECHNOLOGIES & MODULES



RELIABLE ELECTRONICS HARDWARE & SOFTWARE SYSTEMS FOR MOBILITY





iTMC

Power & Control ECU for PWM & PMSM motors. Power Train Traction Motor applications.

The iTMC Power & Control ECU is an advanced solution for Sinusoidal or Trapezoidal control for 4-Quadrant PWM and PMSM motors, allowing remote : positioning, speed and torque control via CANBUS commands.

HARDWARE :

- ◇ Power Supply _ Control : 12 / 24 VDC
- ◇ Power Supply _ Power : 330 VDC
- ◇ 1 power output up to 8KW for PMSM motors
- ◇ 1 Incremental encoder input
- ◇ 1 Absolute encoder input
- ◇ 1 Hall sensor input
- ◇ PWM 15 Khz
- ◇ Sensor Speed range : Up to 10K RPM
- ◇ 2 Digital inputs _ 2 Analogic inputs
- ◇ CANBUS com _ up to 1MBs
- ◇ Regenerative braking system option
- ◇ Operation temperature range : -20°C to + 85°C

SOFTWARE :

- ◇ User interface
- ◇ Parameters configuration (Autotuning)
- ◇ Calibration
- ◇ Main parameters monitoring and diagnostics
- ◇ CANBUS Commands

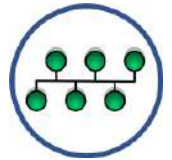
Encoder / Hall



Power Supply



CAN Bus



iTMC



PMSM Motor





Power & Control ECU for PMSM & BLDC motors. Steering System Motors applications.

The iSMC Power & Control ECU is an advanced solution for PMSM & BLDC motors, allowing remote : positioning, speed and torque control via CANBUS commands.

HARDWARE :

- ◇ Power Supply : 12VDC Redundant /24/48 VDC
- ◇ 2 power outputs for 2 PMSM - BLDC motors. Redundant topology.
- ◇ Max. Output Current : 15 A & 10 A , see versions
- ◇ Max. Peak Current : 25 A & 20 A , see versions
- ◇ 2 encoder / hall sensors inputs
- ◇ PWM : Up to 15 Khz
- ◇ Sensor Speed range : 10K RPM
- ◇ 4 Digital Inputs _ 2 Analogic inputs
- ◇ Interface : CANBUS _ up to 1MBs
- ◇ Operation temperature range : -20°C to + 85°C

SOFTWARE :

- ◇ User interface
- ◇ Parameters configuration (Autotuning)
- ◇ Calibration
- ◇ 2 motors simultaneous control
- ◇ Main parameters monitoring and diagnostics
- ◇ CANBUS Commands

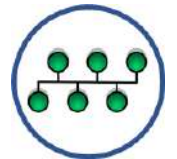
I/O Dig_Ana
Encoder / Hall



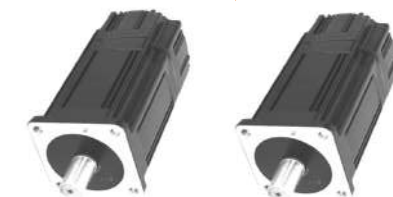
Power Supply



CAN Bus



iSMC



PMSM & BLDC motors



iVDC

ECU for the vehicle safety functions (Vehicle Dynamics , ...)

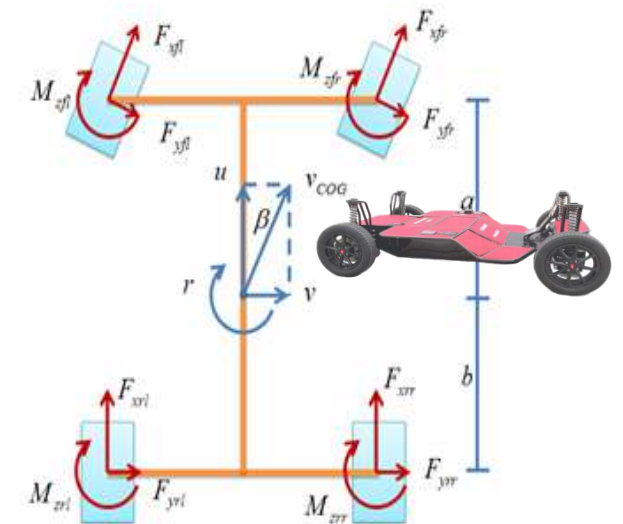
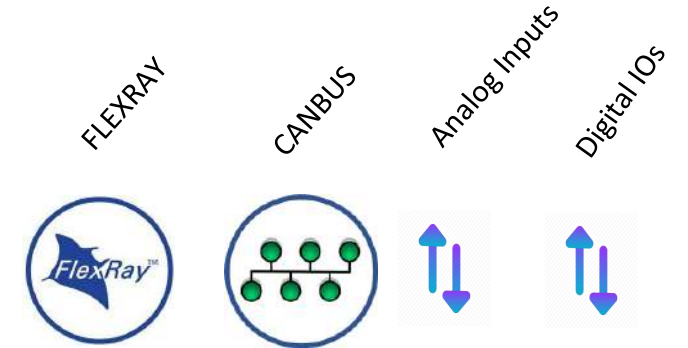
- ◇ Vehicle dynamics management
- ◇ Powertrain management
- ◇ Braking System Management
- ◇ Driving Interface: Steering Wheel, Throttle, Joystick, SmartPhone, ADAS
- ◇ Communications Gateway

HARDWARE :

- ◇ Power Supply : 12 / 24 VDC redundant
- ◇ Dual core microp certified for safety applications
- ◇ 4 x CANBUS com _ up to 1MBs)
- ◇ 1 x FLEXRAY com
- ◇ 2 Accelerometer & 2 Gyroscope
- ◇ 1 Incremental encoder input
- ◇ 1 Torque sensor input
- ◇ 10 Analogic inputs _ 3.3Vdc / 5 Vdc
- ◇ 5V@100ma output for sensor power supply
- ◇ Operation temperature range : -20°C to + 85°C

SOFTWARE :

- ◇ User interface
- ◇ Parameters configuration
- ◇ CANBUS & FLEXRAY Commands
- ◇ Matlab / Simulink supported





➤➤ iDashboard

Dashboard for vehicle instrumentation and control operations display. Interface with passengers and V2V _ V2I communication.

Configurable modular dashboard systems based in 3 main screens :

- **Cluster :** Main vehicle parameters. Speed, odometer ,
- **Infotainment:** Radio, navigation,
- **Comfort :** Climate control, mirrors setting ,

Modular Dashboard

V2V & V2I Communications

Smartphone & Tablet interface

SOFTWARE :

- ◇ User interface.
- ◇ CANBUS & FLEXRAY Commands.

HARDWARE :

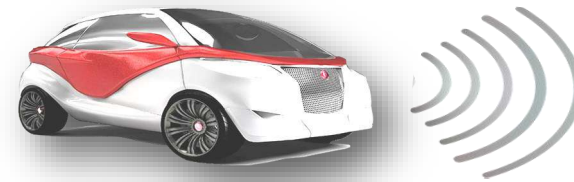
- ◇ Up to 3 screens :
 - Cluster / Infotainment / Comfort
- ◇ Electronic Control:
 - Up to 2 ECU
- ◇ Local Communications :
 - CANBUS & FLEXRAY
- ◇ Interface Communications :
 - GPRS / WIFI / RF
 - 4G ,eCall





➤➤ iADAsys

Images capture for the execution of algorithms based on Deep Learning technologies for ADAS applications to support vehicle assistance and autonomous driving.



iADAsys_ ECU Module.

Images and Data management . CAN bus interface with the vehicle ECUs.

- ◇ CPU: Quad ARM® Cortex® A53 cores at up to 1.3 GHz core frequency
- ◇ 1x Cortex M4 Core for real time processing
- ◇ Deep Learning Algorithms
- ◇ Safety: FCCU and FCCU output supervision unit
- ◇ Security & Encryption: CSE-FL & AES-128
- ◇ Image Cognition: 2x APEX2-CL Dual 32-bit array with 2x32 compute units
- ◇ Ethernet: 1x MII/RGMII
- ◇ Serial: 2x MIPI-CSI: 2x4 lanes, up to 1.5 Gbps



iADAsys_ Advanced Driving Assistance

- ◇ Obstacle detection: vehicles, pedestrians, bicycles, etc.
- ◇ Traffic Signals detection
- ◇ Custom solutions



HARDWARE :

- ◇ Sensor: Up to 3 CMOS
- ◇ Type : Color
- ◇ Format : 1/2.7"
- ◇ Temp range: -40°C / 105°C
- ◇ Resolution: _ 1312*828 pixels
- ◇ Application : ADAS



➤➤ iKeyLess

SMART KEY LESS SYSTEM for access control , safety and vehicle start/stop function.

Turnkey solution , based in a complete mechatronic solution and advanced software.

PEPS : Passive Entry Passive Start electronic unit.

- ◇ 6 LF + Immobilizer .
- ◇ Encryption based in AES128
- ◇ RF Antenna (Rx / Tx)
- ◇ Smart Switch Input (Anti wet)

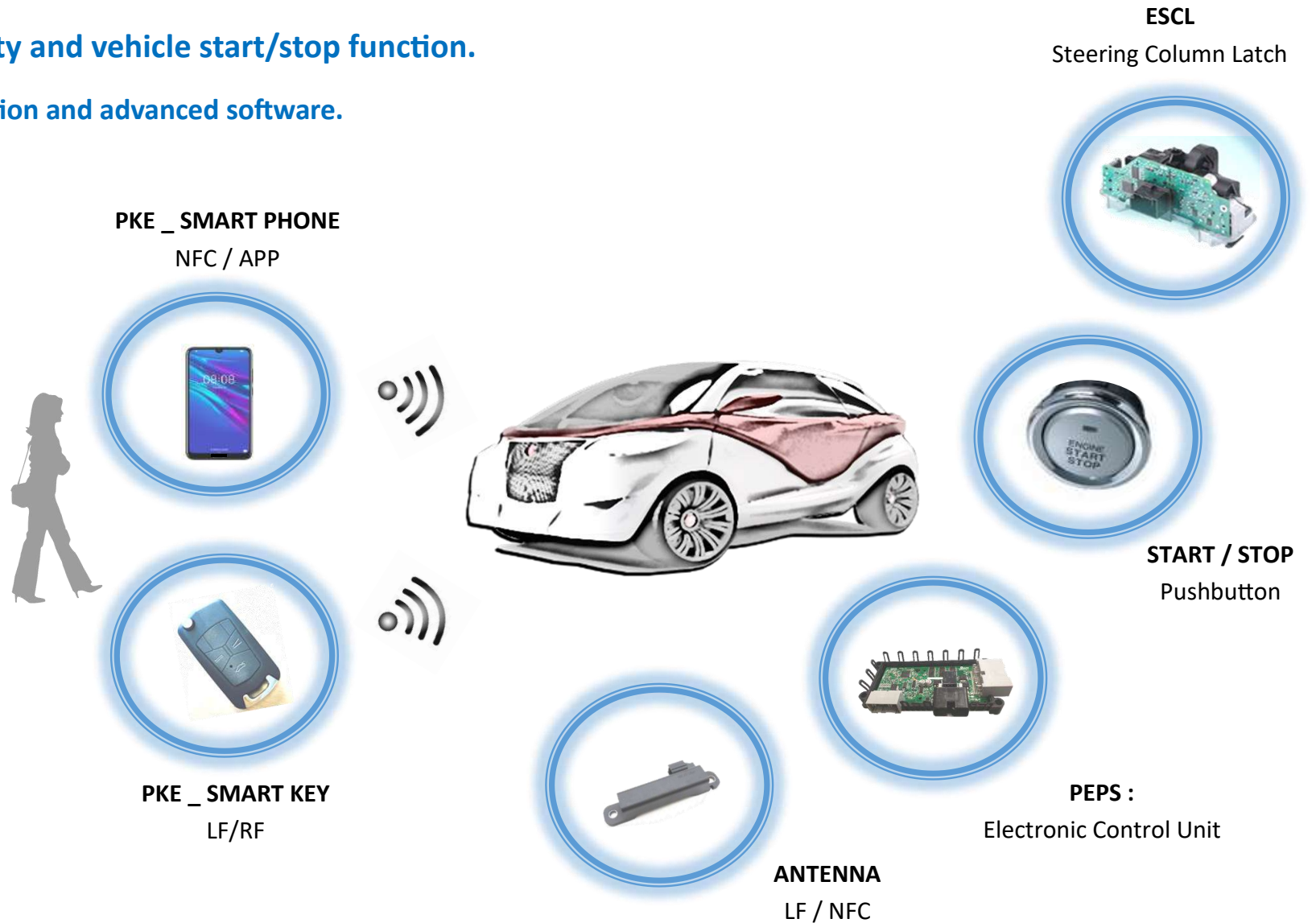
PKE : Remote Smart Key.

- ◇ 3D LF Coil
- ◇ Motion Sensor
- ◇ Smart Switch Input (Anti wet)

ANTENNA :LF & NFC antenna.

ESCL : Steering Column mechanical latch.

START / STOP : Pushbutton.





ECU for the vehicle rear devices control .

Digital and analogic devices control concerning the rear side of the vehicle.

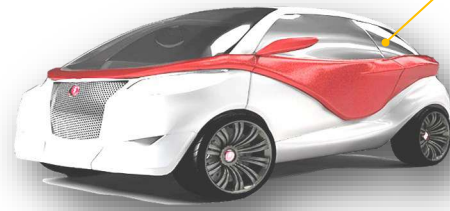
HARDWARE :

- ◇ Power Supply : 12 VDC
- ◇ CANBUS com _ up to 1MBs
- ◇ Up to 10 Digital outputs
- ◇ Up to 10 Digital inputs

SOFTWARE :

Application management.

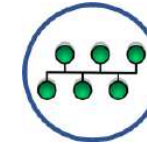
- ◇ Rear vehicle lights
- ◇ Rear trunk
- ◇ Rear wiper



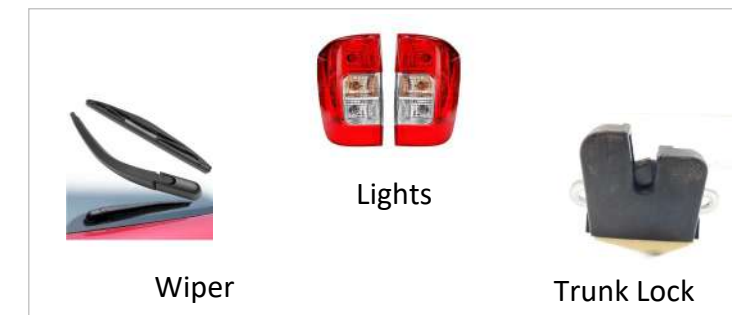
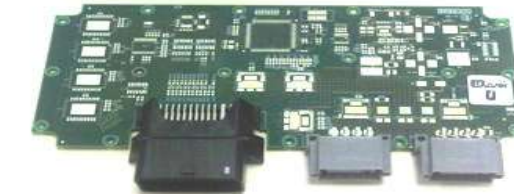
Digital Inputs



CANBUS



iRM





iFM

ECU for the vehicle front devices control .

Digital and analogic devices control concerning the front side of the vehicle.

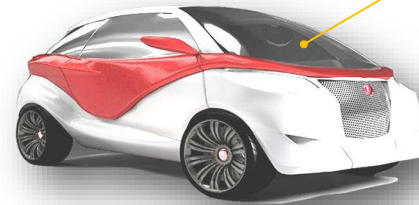
HARDWARE :

- ◇ Power Supply : 12 VDC
- ◇ CANBUS com _ up to 1MBs
- ◇ Up to 30 Digital outputs
- ◇ Up to 10 Digital inputs

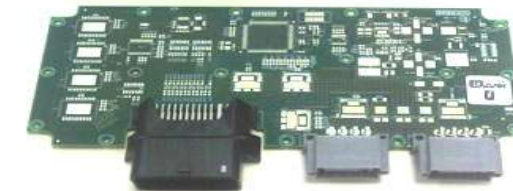
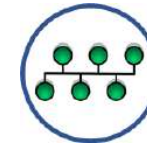
SOFTWARE :

Application management.

- ◇ Front vehicle lights
- ◇ Front wiper
- ◇ Water Pump



Digital Inputs CAN Bus



iFM





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MOBILITY



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