



# PREMO VIETNAM R&D

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# Premo locations worldwide



## Mission / Vision

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### Mision

**Design** & Manufacture **Innovative** Magnetics.

### Vision

Premo will be a key global player in the application of **innovative** magnetics for the key enabling technologies of the **4th Industrial Revolution** : IoT, M2M, VR, Connected and Electric Vehicles.

IoT : Internet of Things

M2M : Machine to machine

VR : Virtual Reality



# Purpose of Premo Vietnam R&D

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ASIA is the most important bussines area for Premo Group

Premo Group has set up Premo Vietnam R&D to support ASIA market



# Premo Group products portfolio

## Core technologies

**Power Inductive  
Components**

**RFID**

**Sensors**

**EMC Filters**

## Markets

Automotive, telecom,  
Industrial, Medical,  
Railways,

Automotive, RFID,  
Industrial, Automation

Metering

Industrial, Renewables,  
Solar



Main market

# AUTOMOTIVE INDUSTRY



# Power Inductive Components

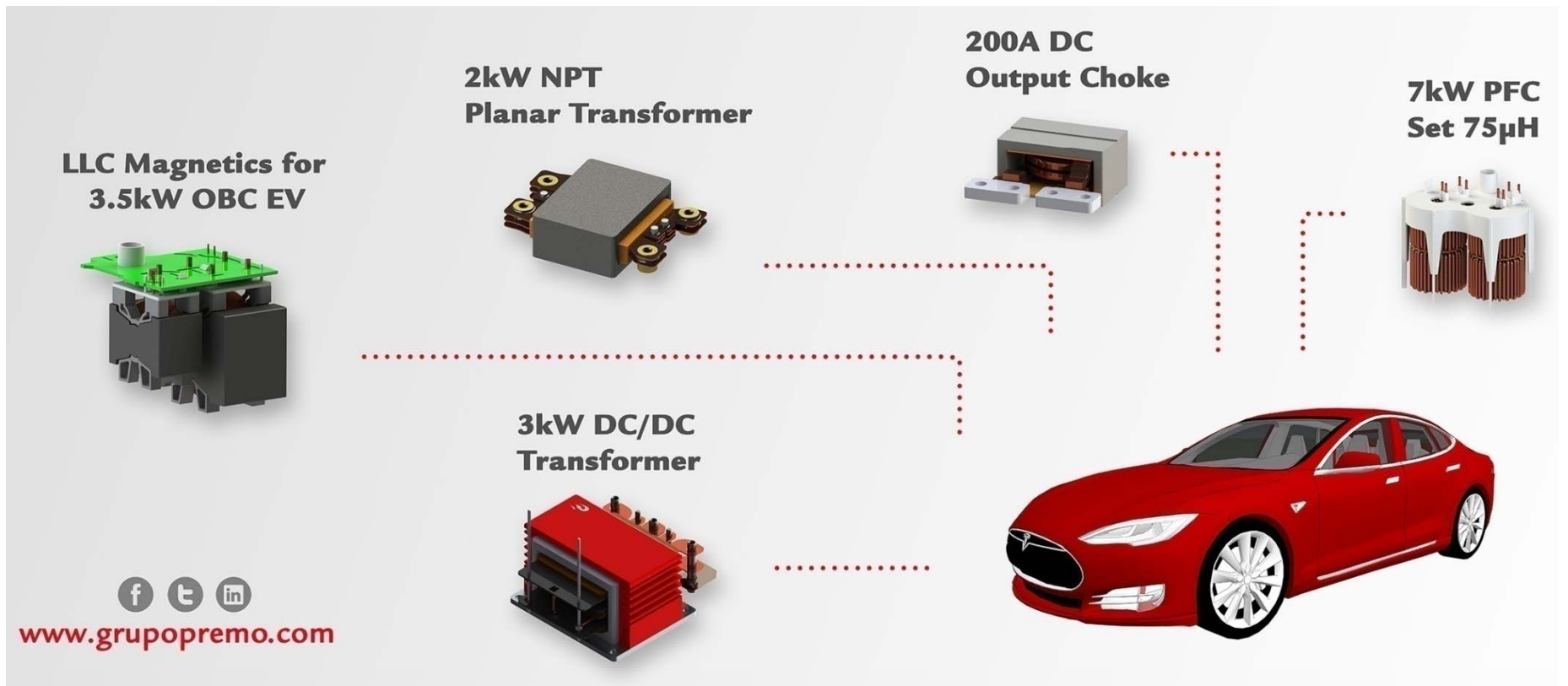
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- Conventional Transformers (PTH, SMD)
- Planar Transformers Cu Frames
- Planar Transformers PCB/Cu frames
- Chokes Flat Enameled Wire
- Litz wire components : Transformers, Output chokes, DC/AC chokes, Resonant chokes, etc
- Toroidal : Output Chokes, PFC, CMC



# Inductive components : automotive applications

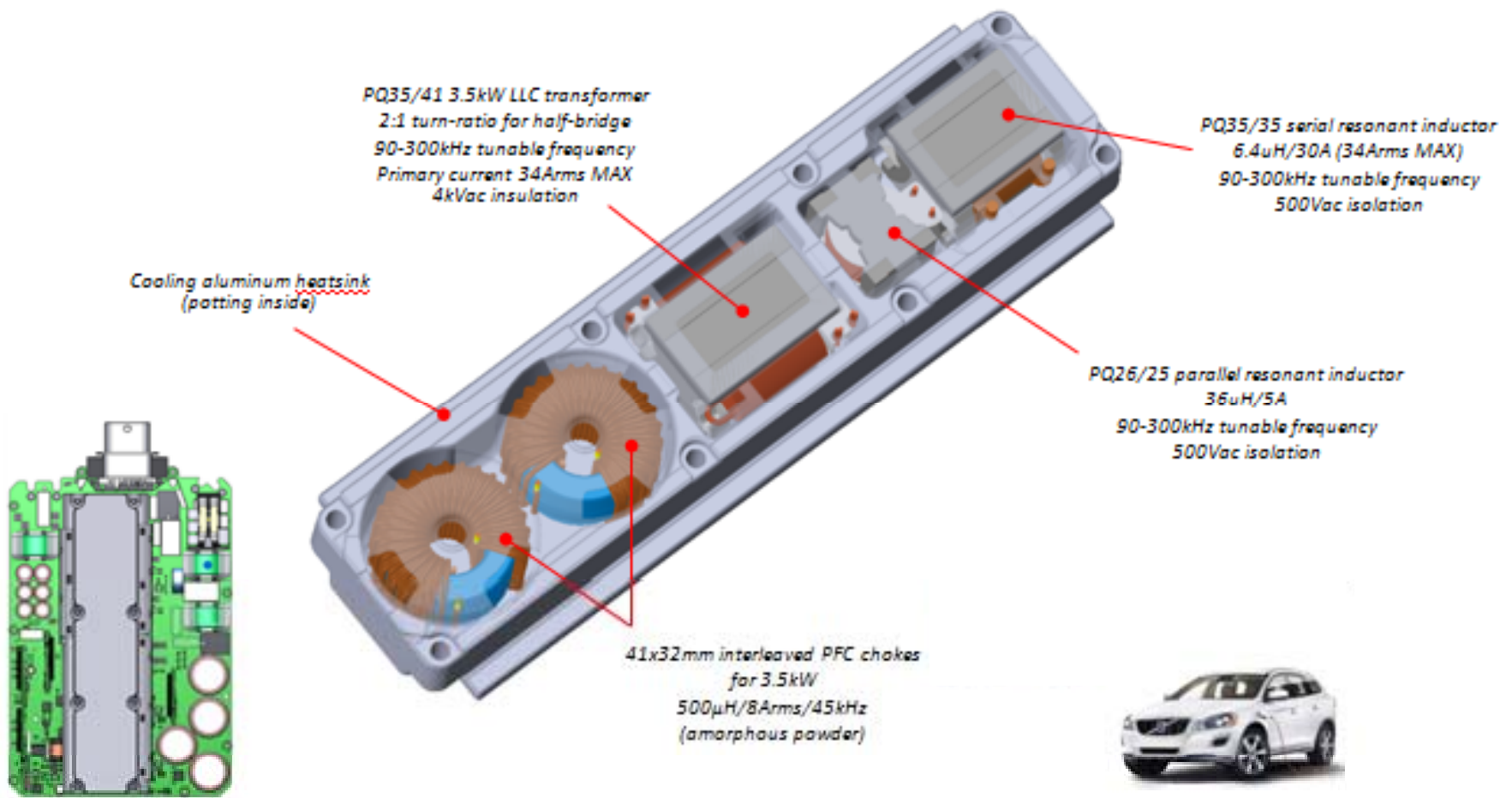
Components for OBC (On Board Charger) for electrical and hybrid vehicles





# Power IC applications : OBC LLC components

## 3.5kW Power Set for Plug-In HEV BC



# Power IC applications : DC/DC converters

**PQ35/35 ZVS inductor**  
6.4 $\mu$ H/20Arms  
500Vac isolation

**Metal powder ER51 DC output filtering choke**  
2 $\mu$ H/230Adc 14App@190kHz  
500Vac isolation

**EE43 planar power transformer 3.2kW**  
ZVS full-bridge operation at 95kHz  
4kVac isolation

Typical Drop of Inductor vs. Current

DC Current (A)	Inductor Drop (mV)
0	0
10	~10
20	~20
30	~30
40	~40
50	~50
60	~60
70	~70
80	~80
90	~90
100	~100

**Schematic Diagram:** A full-bridge ZVS inverter with a transformer and a DC inductor. Input voltage is  $V_{in}$  and output voltage is  $V_{out}$ . Components are labeled: ZVS Inductor, Transformer, and DC Inductor.

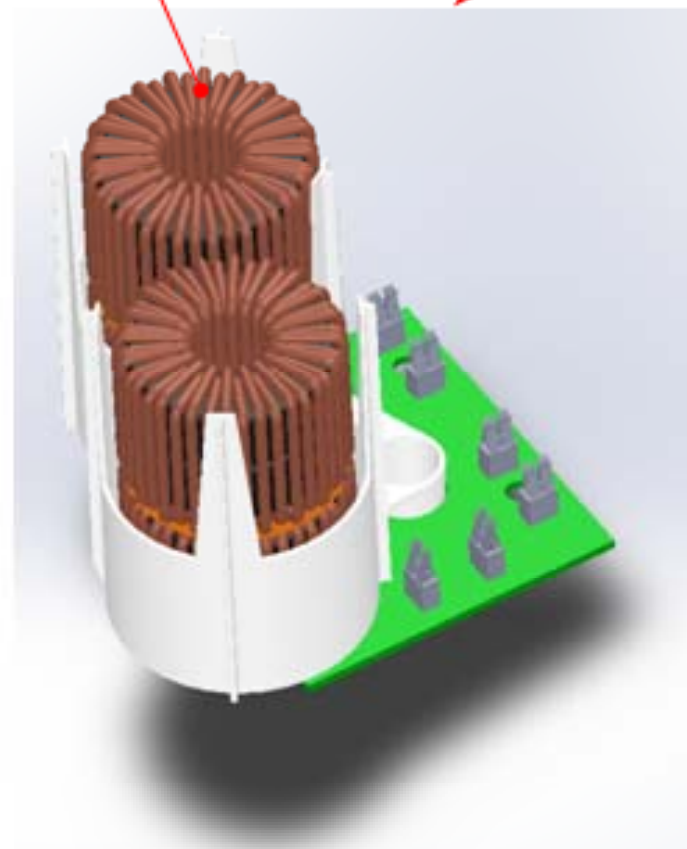


# Power IC applications : OBC LLC components

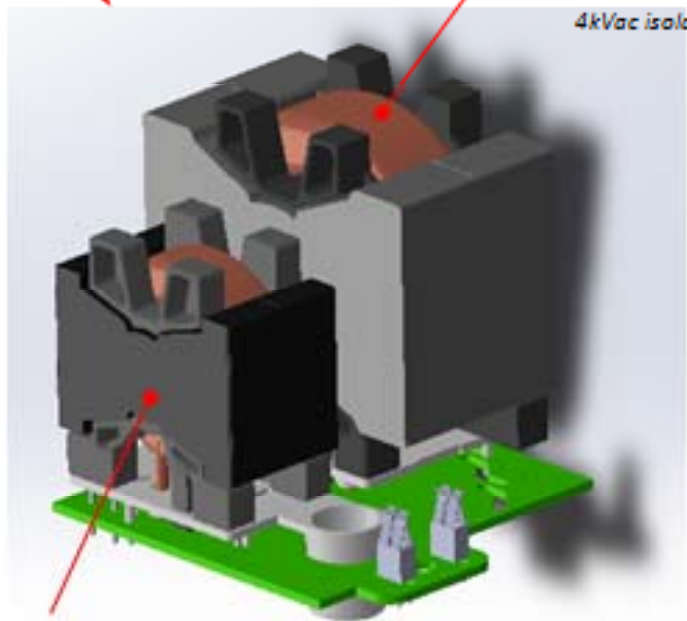
## 3.5 to 7kW PFC and LLC Power Stages



40x30mm interleaved PFC chokes  
for 3.5kW  
120 $\mu$ H/8Arms/15.6Apk/100kHz  
(sandust powder)



PQ59/35 power transformer 3.5kW  
 $L_p = 130\mu$ H integrated  
70-200kHz tunable frequency  
4kVac isolation



PQ40/25 serial resonant inductor  
 $L_r = 22\mu$ H (29Apk MAX)  
70-200kHz tunable frequency  
4kVac isolation

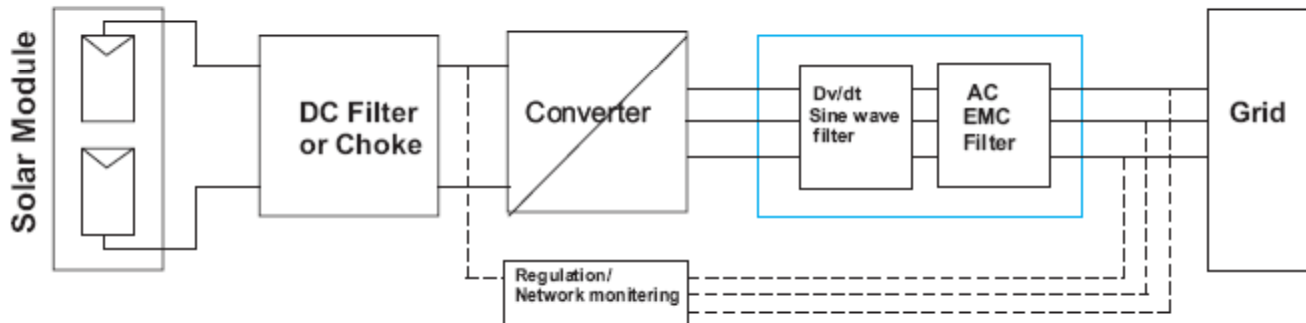


# EMC Filters

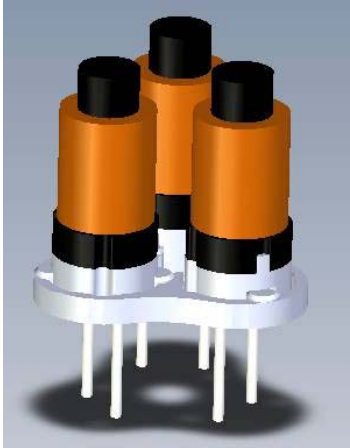
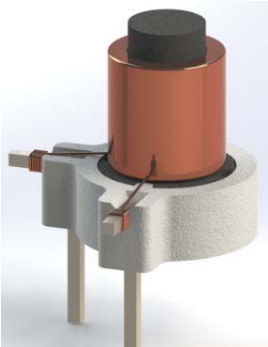
Single phase, 3 phase, DC filters, 3 Phase+ Neutral Line Filter, dV/dt Output , Screened room.



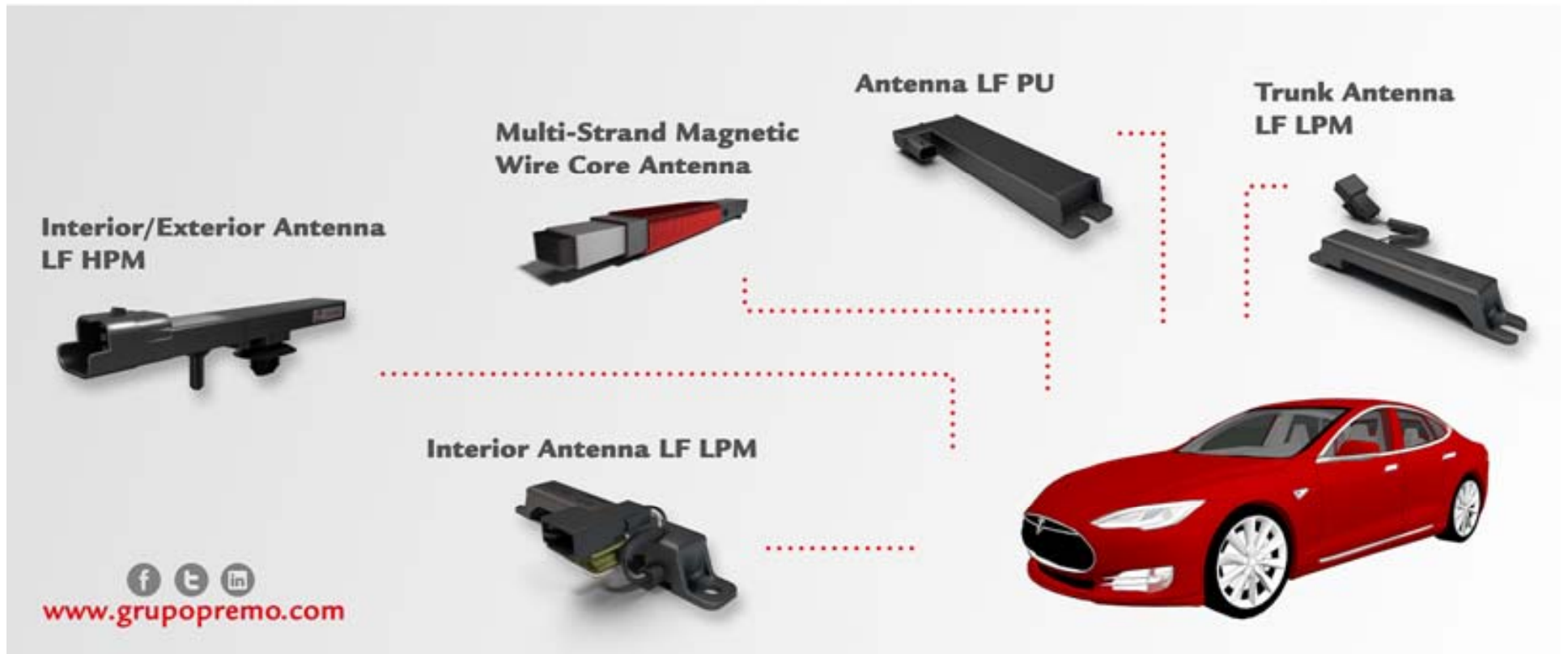
Solar application



# Sensors for water/gas metering applications

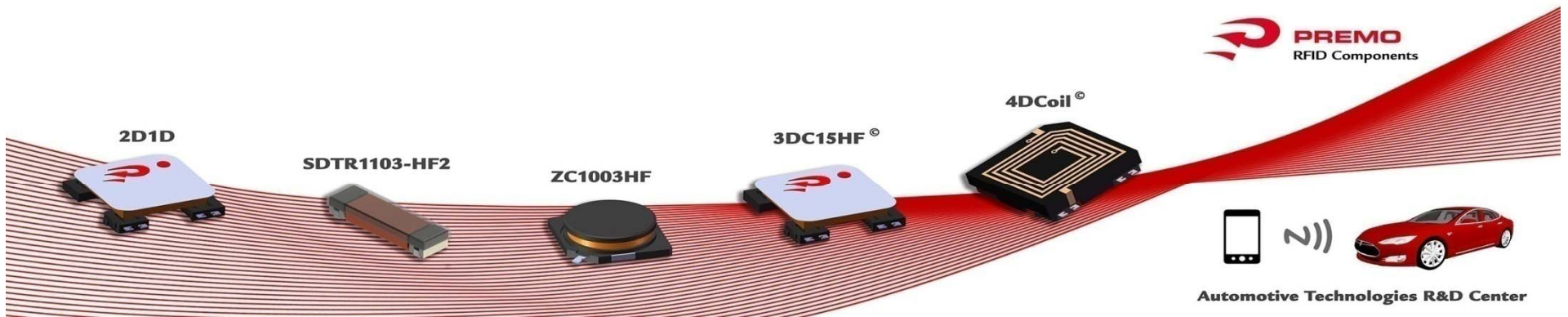


## Emitter Antennas

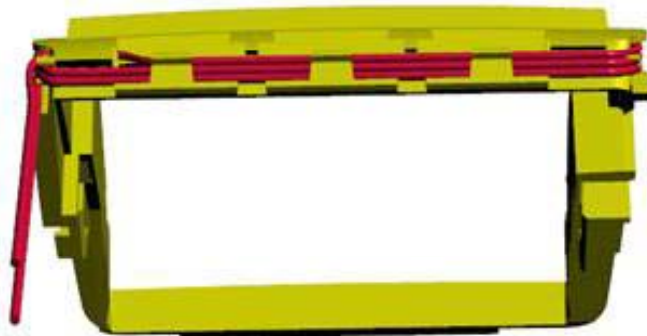


# RFID / NFC

## NFC Antennas (Near Field Communication)

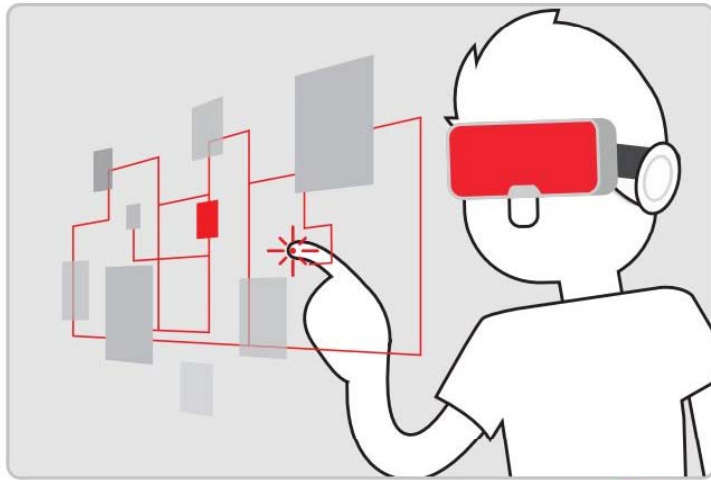


# NFC application : TPS (Terminal Point of Sale)

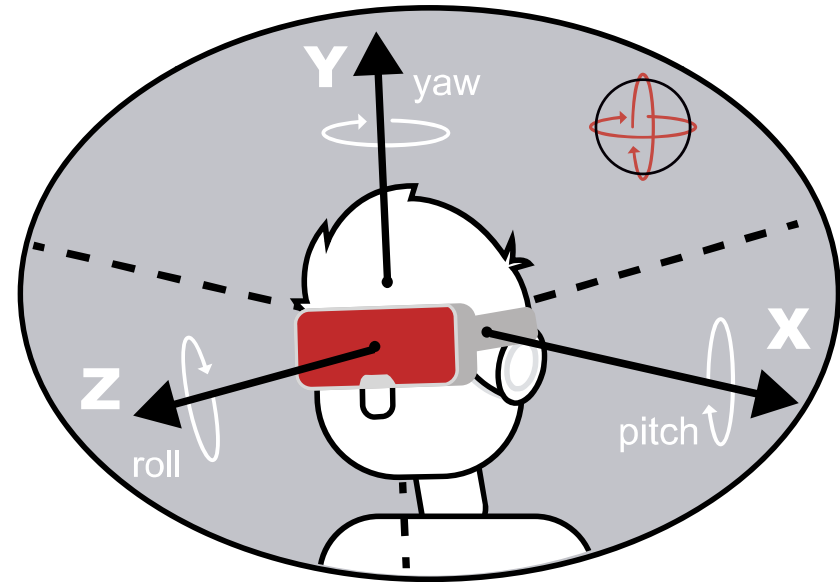




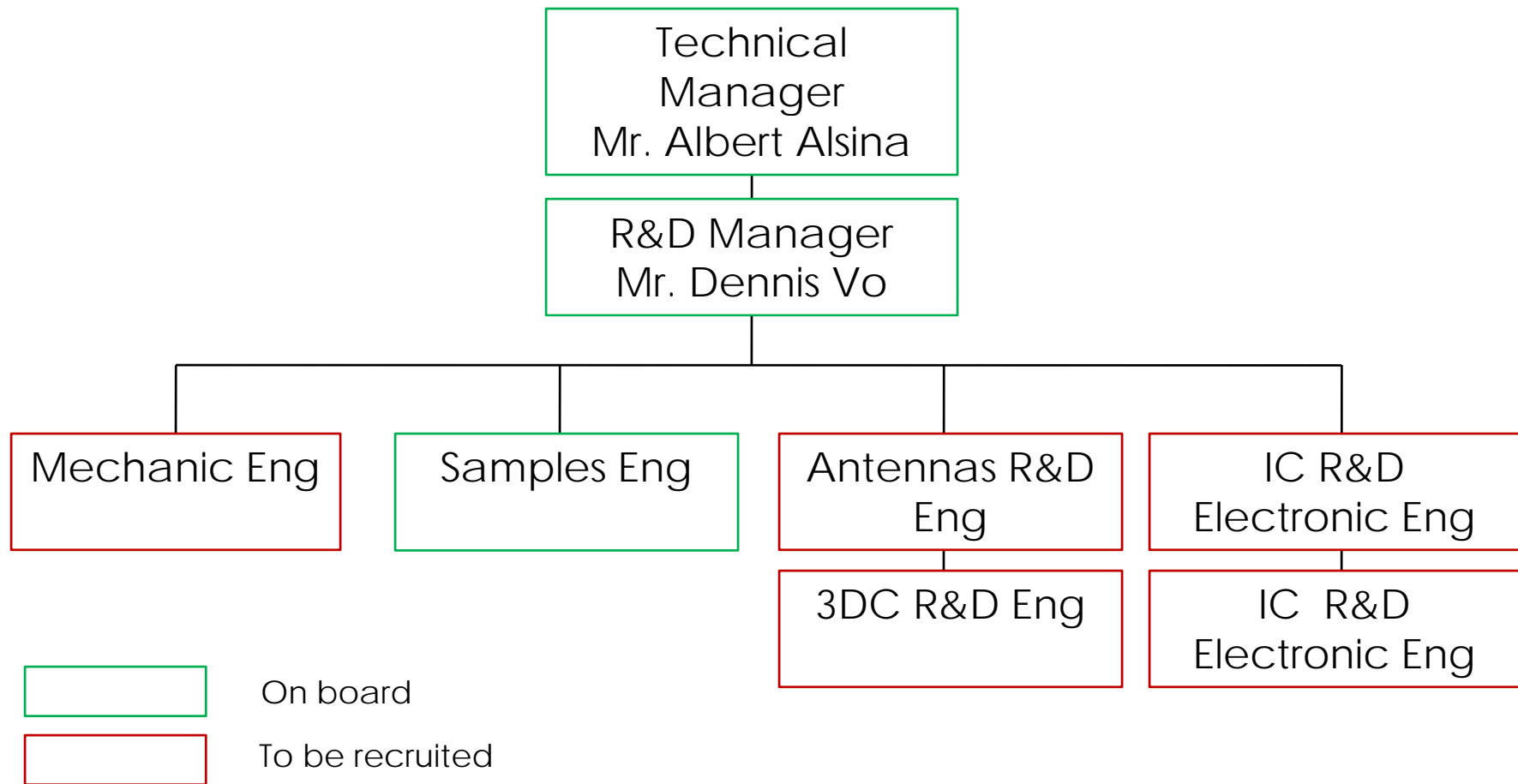
# Virtual Reality applications



Graphs by  PREMO



# Premo Vietnam – R&D department structure



# Carrer plan for R&D engineers

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What we are looking for :

- Recent graduates by Universities or Technical Schools of Electrical or Electronics Engineering (Juniors)
- Engineers who want to learn and to develop a profesional career in a multinational company.



# Customers

## Automotive



## Industrial



## Telecom/Electronics



## Metering



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# Thanks for your attention !!!

For more information [www.grupopremo.com](http://www.grupopremo.com)

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