

P4Q

PROFESSIONALS
FOR
QUALITY

P4Q Electronics

ADAPTATION
TRANSPARENCY
PARTNER

WE IMPROVE TOGETHER

Go!



PROFESSIONALS
FOR
QUALITY

AGENDA

1. The company
2. Services
 - HW & SW design
 - Production analysis
 - Prototyping
 - Testing
 - Production
 - Mechanical Assembly
 - Obsolescence management



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CORE BUSINESS & SECTORS

We are specialized in the engineering and manufacture of electronic products and systems for high demanding sectors.



automation
Automation



renewable-energy-sources
Renewable energy sources



professional-electronics
Industrial sector



railway
Railway

CORE BUSINESS & SECTORS

Automotive



automation
Automation

LIGHTING

Electronics for interior applications:

- Ambient light & touch functions

Electronics for exterior applications:

- DRL
- Turning lights
- Decorative lighting

VEHICLE ELECTRONICS

ECUs & actuators

- Electromechanical design
- Different communication protocols.

CORE BUSINESS & SECTORS

Renewable energy sources – Solar Tracking controllers



renewable-energy-sources
Renewable energy sources

PRODUCTS FOR PV, CSP, CPV

Controllers

- Custom embedded solution.

Inclinometer

- Installation & training.

Stringbox

- Support: online forum / on site.

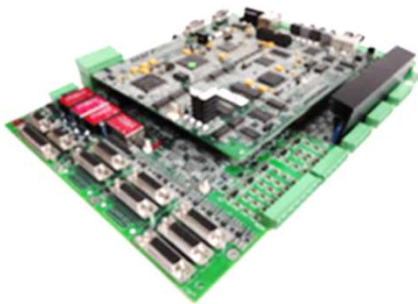
Joystick

- Big series production.

- Design & produced by P4Q.



On board & Infrastructure



ELECTRONICS FOR

On - Board

Railway Infrastructure

Traction system control

Infrastructure

Vehicle control & supervision system

Communication & passenger information system



✓ PCBA Manufacturing

✓ Mechanical assembly

✓ Coating

✓ Burn-in test

Product range



ELECTRONICS FOR

Electrical protection systems



Medical applications



Marine applications



Home automation

Aeronautics & defence



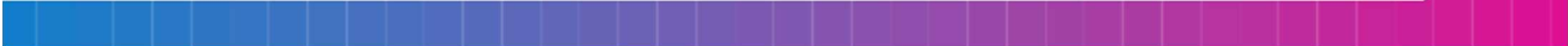
GLOBAL FOOTPRINT



Production plants:
Alonsotegi, Spain
Albuquerque, USA
Qunshan, china

R-D Center, prototyping
AIC Boroa, Spain

Commercial offices
Madrid, Detroit, San Francisco,
Monterrey



FACTS & FIGURES

TOTAL TURNOVER **2018**

Including Europe + USA 40 Mi €

FACILITIES **2018**

R+D Center (AIC Boroa, Spain) 400 m2

Production Alonsotegi (Spain) 2000 m2

Production Albuquerque (USA) 2000 m2

Production Kunshan (China) 2400 m2

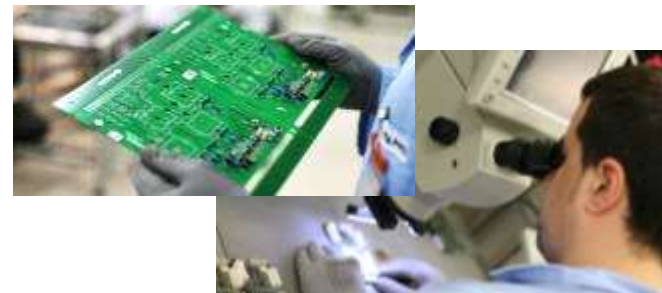
Local commercial offices and sales representatives in Madrid, Detroit , San Francisco and Mexico.

EMPLOYEES **2018**

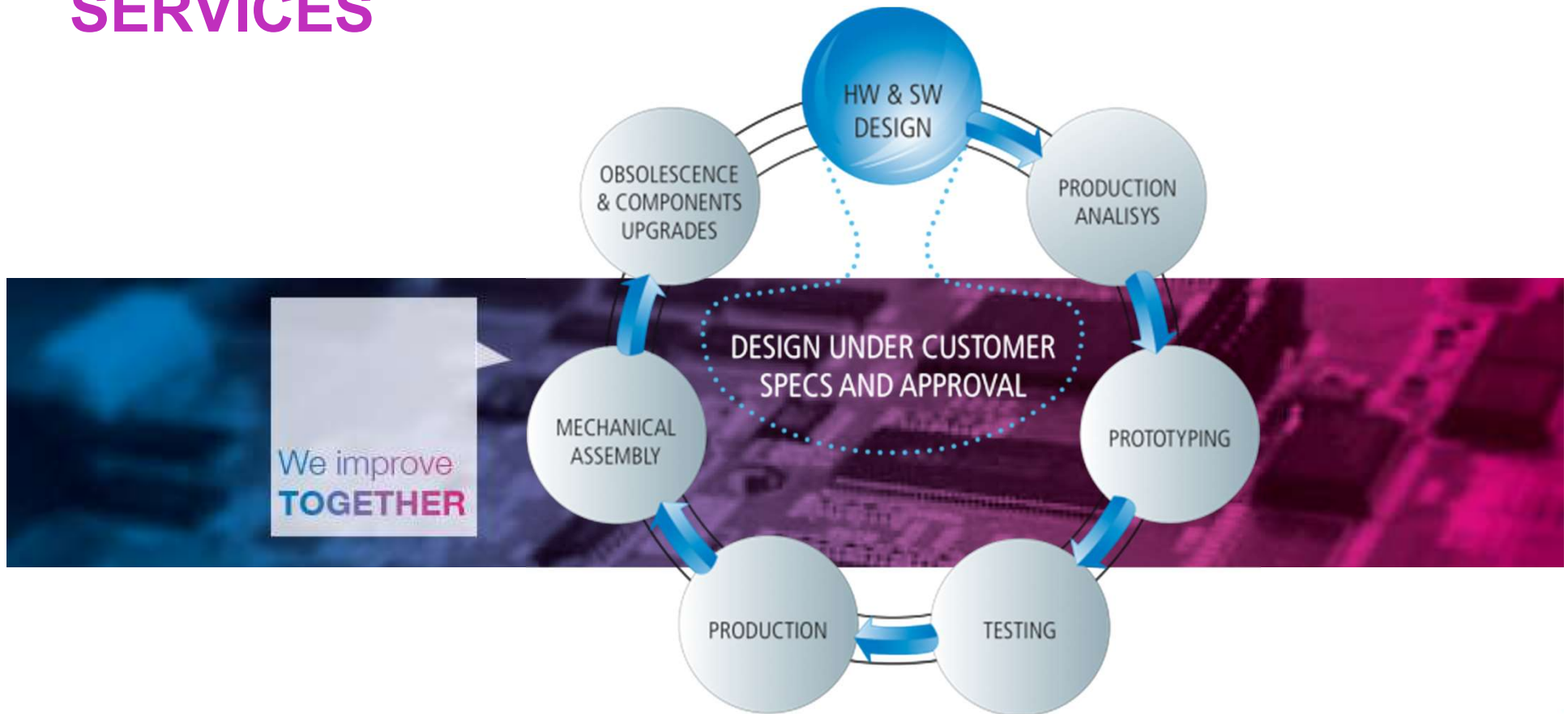
Spain (Headquarters, R+D, production) 68

USA (production) 32

China (production) 30



SERVICES



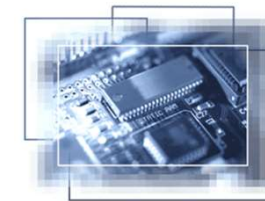
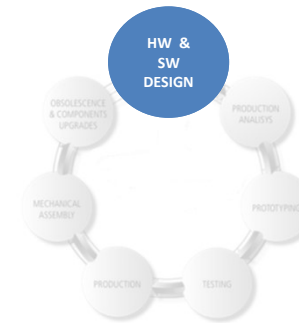
Services – HW & SW Design

- ✓ Schemes / HW's design
- ✓ Component selection criteria (Silicon Expert)
- ✓ Functionality/product's validation
- ✓ Development of mechanicals in relation with the electronic device.

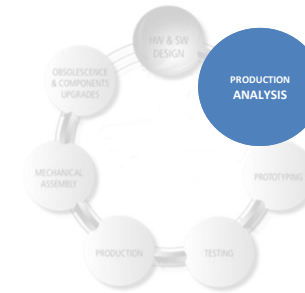
We coordinate interaction of electronic device with other elements

(Aluminium or technical polyamides components).

- ✓ Lighting parameter analysis, thermal analysis / reliability, different solutions for the optics for interior applications

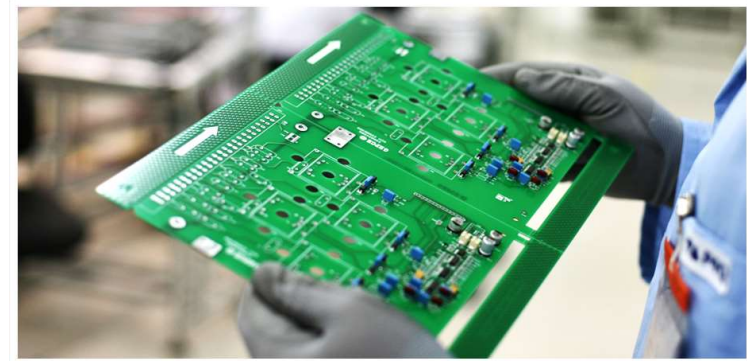


Services – Production analysis



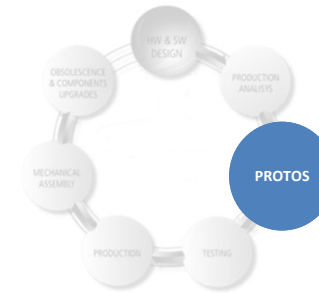
Design to cost based on:

- ✓ Design for Manufacturing (DFM)
- ✓ Design for Testing (DFT)
- ✓ Design for Assembly (DFA)
- ✓ ESD compliant - returnable packaging design
- ✓ Open book



Services – Rapid prototypes

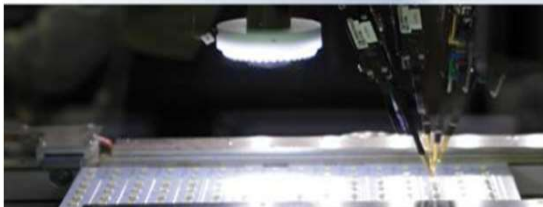
- ✓ Focused to achieve demanding deadlines
- ✓ Physical construction of prototypes with automatic machines.
- ✓ Possible size range for prototypes goes from 50x50x0,5 to 1400x450x4 millimeters.
- ✓ Manufacturing highly complex references (Fine pitch 0,3mm, QFN, Micro-BGAs, 0201).
- ✓ Vapor phase oven.
- ✓ Complementary services for product validation:
 - 3D X-ray
 - Climatic chamber (-40°C to +180°C)
 - Burn-in chamber (-40°C to +85°C)



Services - Testing



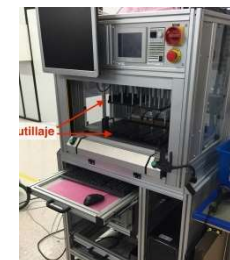
- ✓ Own development of testing equipment: flying probes, ICT & customized test station
- ✓ Storage of test results values and traceability of the unit, with direct access by the customer.
- ✓ Checking of assemblies.
- ✓ Lighting: on / off and voltage stress test over LED circuit, off line checking of light performances.



Flying probes

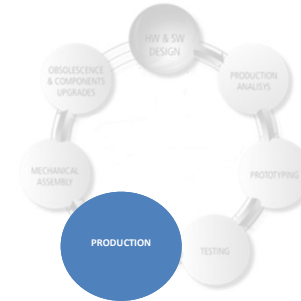


Customized



In Circuit Test

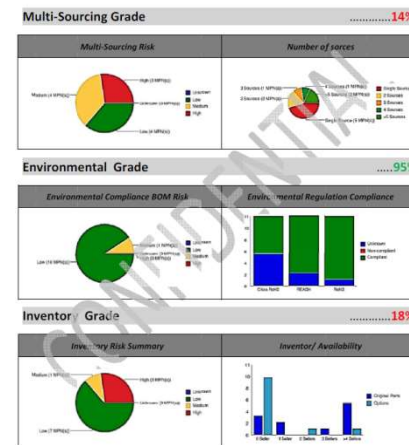
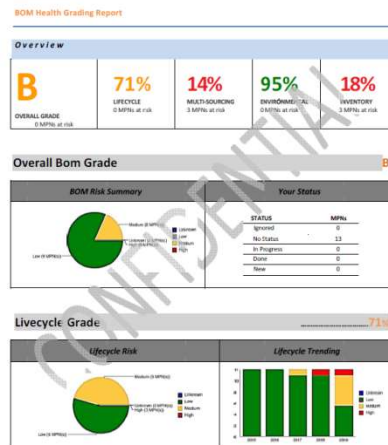
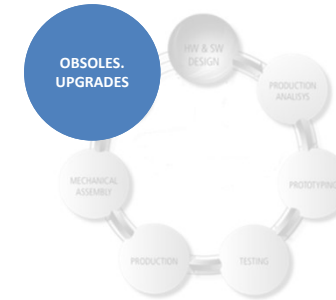
Services – Production



Capabilities	Spain	USA	China (2018)
SMD Lines	2 Components from 0201 to Micro-BGA	2 Components from 0603 to BGAs	1 Components from 0201 to Micro-BGA
AOI	In-line algorithm 3D	In-line algorithm 3D	In-line algorithm 3D
Traceability system	Traceability of each component and PCB guaranteed by Mentor Graphics (Valor)	Customized implementation of traceability	Traceability of each component and PCB guaranteed (Fuji)
Through hole	2 Wave soldering lines (automatic in line insertion) 1 Selective soldering machine	1 Wave soldering 3 Selective soldering machine	1 Wave soldering
Coating	1 Asymtek machine dispensing varnish at high pressure, automatic loading/unloading, drying furnace with UV zone	In-line UV	In-line UV

Services – obsolescence management

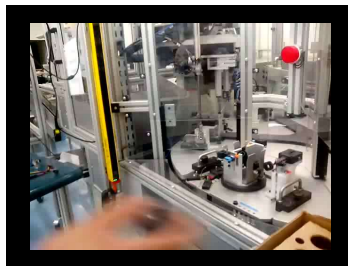
- ✓ From the production life of product to life of service requirements
- ✓ Aftermarket as a business area
- ✓ Support on design upgrades (Silicon Expert)



HIGH VOLUME PRODUCTION

Assembly process automation

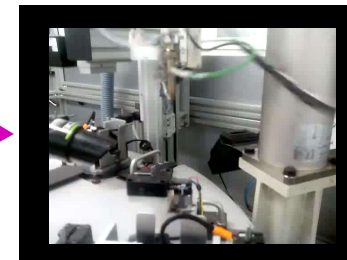
Own design of the assembly lines for automotive big series production.
Automatic soldering cell . Click images for video.



Charging materials



Wave soldering



*Motor + wire harness
Soldering by robot*



Downloading final product



Test

OUR CLIENT'S CONFIDENCE IS RANKING US IN THE MARKET



Honeywell

GUASCOR S.A.



ABENGOA

NEXTracker
Unleashing Solar Profits



P4Q

PROFESSIONALS
FOR
QUALITY

We improve
TOGETHER

HEADQUARTERS SPAIN PLANT

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Fax: (+34) 94 498 20 36

R+D Center

AIC Automotive Intelligence center

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