

EMBEDDED PRODUCT ENGINEERING SERVICES

Design | Deploy | Maintain

Trends

The internet of things is viewed by the industry as one of the top technologies, with nearly 60%* industry professionals agreeing that it will have the most impact on business.

In addition, with 38%* connected consumers owning a smart appliance and 41% agreeing to pay a premium for smart appliance, it is imperative for business to launch new next generation of products to capitalize on the current lack of smart appliances in the market.

The base for any smart appliance will be its embedded platform which means that appliances will evolve into a compute platform from a mechanical one. This will dictate its functionality like connectivity, its user interface whether touch or voice, and its versatility like third party integration.

*Euromonitor international digital consumer industry insights survey 2019

Opportunities

Creating new user experience, through new innovative HMI solutions, touch or voice based system, automation of task like oven configuration, grocery list preparation, and floor cleaning.

Choosing the right sensor and developing the right computing platform that is optimized for such functions while keeping the additional BOM cost to a minimal will be key in maintaining cost competitiveness.

As the control hardware becomes more complex and appliances move incorporate sophisticated MCUs that are able to run AI algorithms, it will become important to maintain these platforms through frequent over the air updates to keep the device operations secure. Business will need to create such process where they can develop, deploy and maintain new software.



Consumer benefits

- Compute platform leads to multitude of functionalities and automation opportunities
- Attractive pricing options for the consumers

SERVICE OVERVIEW

Board design and development

- System design, modelling, and analysis
- Component sourcing / BOM planning
- IoT device design
- Intelligent sensor application systems design
- Low, medium and high speed interfaces design
- Displays

Platform software

- Firmware and FOTA
- Device driver
- Flash Partition
- Boot-up scenarios
- Power Management
- Secure boot up
- Main board interface and communication commands
- Sensor information

Pre Compliance Testing And Certification

- HW Bench Testing
- Waveform Capturing
- Circuit Characterisation
- Over/Under voltage testing
- Load dump testing
- Reverse voltage testing
- Current measurement for various operating modes
- Pre-Compliance testing
- Electrical
- Environmental

Platforms

Renesas

Mediatek

ST

Qualcomm

NXP

TI

Sample cases

- Development of simultaneous moping and vacuum system
- Intelligent refrigerator sub system with camera and gas sensor integration
- Linux Platform development for Home healthcare
- Edge intelligence for Robotic cleaner application based on snap dragon
- Test and validation of home gateway

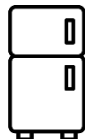
Products experience



Vacuum cleaners



Air conditioner



Refrigerators



Washer dryer



Robotic vacuum cleaner

Sensor and actuator experience

- Ultrasonic sensors
- Camera
- Battery system
- Thermal
- Air quality detection
- Food quality
- Pressure
- 2D LIDAR
- Displays
- Gyroscope
- Humidity
- Load sensor