



White paper

Development of a Set-Top box for mass production

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Customer

The Customer is a producer of consumer electronic devices, one of the biggest in Europe, owned by a satellite digital service provider with a base of a few million subscribers.

Project overview

The project goal was to develop and design a new generation of Set-Top boxes, utilize software solutions available within RT-RK, and target mass production at Customer's facilities. The project covered a complete design cycle from scratch - via prototyping, qualification to testing and support on the production line.



Set-Top box

Main challenges during the project were:

- To prepare the general hardware architecture in accordance with the business frame, and special relationships between the Customer and silicon vendors on the market
- Building prototype series to be used for demo purposes, as a software development platform, and for the device prequalification in accordance with the technical requirements
- Optimization of the design according to technological constraints from production, assuring single side component assembly, simulations-layout changes and later qualification of critical interfaces and power distribution network on the printed circuit board
- Bill-of-material optimization according to Customer's supply chains and procurement praxis
- Qualification of the final design according to technical legislation
- Support for the product pilot production, staff training for assembly errors debugging and failure localization algorithms
- Organization of tests on the production line.

The complete design, prototyping, and qualification activities were conducted by a dedicated RT-RK team. The price optimization process was led by the Customer, in circles of negotiation regarding the supply terms and conditions, with technical expertise and approval by the design team.

Benefits

At the end of the project, the Customer received produced devices fully compliant with their requirements in terms of functionality and manufacturability. All the project stages, from rapid prototypes to the support on the production line were organized and conducted by RT-RK, with documentation, expenses and processes transparent to the Customer.

On the other side, RT-RK team has grown in knowledge on big industrial systems, organization, the way of work, and fine tuned own design for manufacturability approach.

The project was 'the first in series' of similar devices and projects between the two companies.

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