

CUSTOMER SUCCESS

OrCAD Enables Meteca to Bring Innovative PCBA Bridge Product to Market Quickly



OrCADTM
CADENCE PCB SOLUTIONS

Key Challenges

- Complex, small form factor design
- Reduce development cycle associated with trial and error development
- Meet all Certification requirements
- Minimize time to launch

Cadence Solutions

- OrCAD® Capture
- OrCAD® PCB Designer
- OrCAD® PSpice
- OrCAD® DFM Checker

Results

35%

REDUCTION IN
DESIGN TIME

90

DAYS AHEAD OF
SCHEDULE

20%

TRIMMED
DEVELOPMENT
TIME



"We exceeded expectations for design time by 30% and pre-production development by 90 days, while meeting all regulatory requirements and performance objectives."

- Meteca SA

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Introduction

Meteca SA, an electronics development company founded in 2018 and based in Ticino, Switzerland, with an R&D office in Turin (Italy), had an idea to significantly improve the difficulties that electronics OEMs face when moving from product development to production. The company specializes in design, production and worldwide distribution of circuit boards and System-On-Modules (SOMs) for the fast expanding and highly competitive IoT systems market. For their first line of products, released under the Briki brand, the company needed to prove their concept and launch quickly, while keeping development costs under control.



Key Challenges

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Challenges

The company's products; although intended to make life simpler and faster for companies that develop IoT electronics systems, are complex which normally would mean long development cycles for prototype proof of concept and verification testing. The board design was 6 layers with a 0.8 mm thickness and 0.1 mm trace width/clearance. To achieve the comprehensive functionality desired for their MBC-WB SOM in order for it to meet the needs for various implementations and applications, the PCBA layout included two microcontrollers, one mainly used for heavy computation and wireless communication (Wi-Fi/BT/BLE) and one mainly involved in wired connections and control.

In addition to the routing of differential traces, impedance control, managing propagation timing and coupling to achieve the best signal integrity, range and number of constraints to which the design must adhere for manufacturability and to satisfy CE/RED and FCC regulations all posed challenges that most PCB design packages are ill-equipped to handle. And after considering several other tools, Meteca decided that Cadence presented the best suite of tools to meet their requirements.

The OrCAD logo is displayed in white text on a red background. The background features a pattern of small white triangles and larger white cubes in the corners.

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Solutions

Meeting all of the design needs for Meteca's product line is a tall order for a board design tool. As the company determined, a single tool will not suffice. Therefore, Cadence's comprehensive PCB design and development platform OrCAD was deemed the best solution and the following capabilities were instrumental for the success of the project.

The OrCAD logo is displayed in red text on a white background.

OrCAD® Capture | OrCAD® PCB Designer | OrCAD® PSpice | OrCAD® DFM Checker

The level of control, the hierarchical design approach as well as the net classes feature and the ease of use offered by Capture during the schematic design was fundamental to keep control over the different board sections. Board layout and stackup, as well as routing rules were also easy to build with the OrCAD PCB Designer Layout Editor and Constraint Manager. The ability to analyze signals in PSpice is fundamental to grant a good signal integrity and avoid unwanted behavior. The ability to ensure that DFM rules and guidelines are met along with the 3D view to inspect the design before manufacture also contributed to the faster than anticipated bring up time.



Results

- 35% reduction in design time
- Reached pre-production stage 90 days ahead of schedule
- Development time of follow up product trimmed by 20%

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Benefits of OrCAD for Meteca

These OrCAD capabilities enabled Meteca to achieve their objective of bringing the first prototype to production electronic bridge product to market. In doing so, the company exceeded expectations for design time by 30% and pre-production development by 90 days, while meeting all regulatory requirements and performance objectives. They reduced product development time by an additional 20% on a follow-up design. Based on these ROI gains, the company plans to expand its PCB design tool usage to include Cadence Sigrity™ for advanced signal analysis.

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