

Microwave Office Enables CAP Wireless to Meet FCC Specs on Time

Design team makes last-minute changes, passes FCC certification, and saves production schedule

Customer Background

CAP Wireless develops and manufactures a broad range of radio-frequency (RF) and microwave amplification products and related subsystems for homeland security, defense electronics, and commercial microwave markets. The company's Spatium™ product line provides extremely broad bandwidth, high-power, solid-state amplifiers for applications such as electronic warfare (EW) systems, radar and communication systems, laboratory instrumentation, and electromagnetic compatibility and interference testing.

The Design Challenge

CAP Wireless provides cutting-edge power amplifier products that must perform to the latest standards and meet the exacting requirements of the homeland security, defense electronics, and commercial communications markets.

Customer:

CAP Wireless, Inc.

Application:

RF/microwave amplifiers

AWR Products:

Microwave Office® design suite



The Solution

What issue did AWR software help solve?

CAP had developed a specialized transmit/receive amplifier for a customer using Microwave Office software. The device performed as expected, however, during FCC certification testing it was discovered that the radio that was to drive the amplifier had out-of-band spurs, causing the overall system to perform very closely to the FCC regulatory emission limits with no production margin. This would have been unacceptable in a field environment, potentially resulting in unintended interference, or improper system operation.

The product was scheduled for final delivery, so a solution had to be found quickly that could be implemented on the existing printed circuit board (PCB) without change, using existing placement locations.

Microwave Office was used to model a filtering solution, which was then tested and implemented in the amplifier—all in less than one hour. FCC certification was done the next day, and margin for production achieved, saving the schedule and enabling CAP to meet customer requirements and deliver on time.



30 Watt Booster Amplifier, 896-898 MHz.
CAP Wireless Model Number PS009900.

"When FCC testing alerted us to marginal end-system performance, we immediately called upon Microwave Office to help us improve the margin by implementing a modified design. This approach enabled us to use the existing PCB and placement locations and thus deliver an on-time superior product that met our customer's expectations."

Patrick Courtney
Design Engineer
CAP Wireless

www.capwireless.com

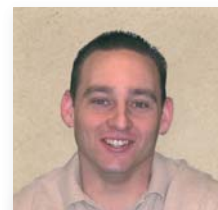
The Solution Continues

Why did you choose Microwave Office?

Essential to the CAP Wireless strategy is the use of the latest and most sophisticated design tools available to accurately create "prototypes" in software, enabling us to go directly from a simulated design to deliverable prototypes and rapidly ramp to fulfill volume requirements. A crucial element of the company's development philosophy is to "design for production" in order to dramatically improve manufacturability by virtually eliminating tuning and adjustments as part of the manufacturing process. Microwave Office software, with its open design environment, unified data model, ability to co-simulate, and best-in-class models, enables us to quickly and accurately complete our design process, and to produce highly reliable, cost-efficient products that meet promised delivery times.

What were the key benefits of using AWR software?

The Microwave Office intuitiveness-of-use, powerful and innovative technologies, and openness and interoperability are all valuable features that help streamline our design process. The concurrent design environment and best-in-class models helped us quickly resolve the integration issue between our amplifier and the radio that was to drive it, saving us significant redesign time and enabling us to meet our delivery schedule.



"We were able to remodel the filtering solution with Microwave Office successfully. It saved us thousands in costs by not having to completely redesign the unit and reschedule testing."

Patrick Courtney
Design Engineer
CAP Wireless

www.capwireless.com

Product Overview

Microwave Office design suite is the industry's fastest growing microwave design platform because it provides users with superior technology, flow, and choice. Microwave Office design suite offers unparalleled intuitiveness-of-use, powerful and innovative technologies, and unprecedented openness and interoperability, enabling integration with best-in-class tools for each part of the design process. Microwave Office software includes all of the essential technology: linear and non-linear circuit simulators, EM analysis tools, integrated schematic and layout, statistical design capabilities, and parametric cell libraries with built-in design-rule check (DRC).

Microwave Office product releases deliver key productivity improvements, including innovative new technologies like ACE™, the industry's first automated circuit extraction technology. Microwave Office software enables developers to shorten design cycle time and speed products to market.



For more information about CAP Wireless products visit www.capwireless.com website



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