

Pulse Relies on AWR Software to Design Cutting Edge Antenna Modules for Wireless Devices and GPS

Using Microwave Office® software and APLAC® technology, Pulse is able to accurately design complex products and get them to market faster

CUSTOMER BACKGROUND

Pulse Antenna Division is a premier global supplier of main and complementary antennas for mobile phones and other wireless devices and has delivered over one billion mobile antennas to leading manufacturers of mobile devices worldwide. Through its unique expertise in combining openness to new ideas with extensive research and development, Pulse has become the technology leader in its field, offering antenna solutions that enable mobile device manufacturers to realize their future product generation strategies. Pulse Antenna Division is headquartered in Kempele, Finland, and has production operations in China, Americas and Finland and service offices in China, South Korea, Taiwan, UK and USA.

THE DESIGN CHALLENGE

The complexity of the mobile antenna market is rapidly increasing as new RF functions are integrated into wireless devices. Next-generation antennas must be able to function in multisystem applications and support a variety of wireless standards such as tri-quad-penta-band global system for mobile communications (GSM), wireless local area network (WLAN), WiFi, Bluetooth and global positioning systems (GPS) for navigation.



Pulse's product range of antennas for wireless devices brings clear benefits for realizing wireless functions in modern wireless devices such as notebook computers and PDAs.



Application:
Antennas

AWR Software:
Microwave Office®



"The advanced AWR Design Environment™ provides us with a flexible platform for our antenna solution design needs. We can rely on the accurate models and trust the simulation results, which leads to fewer design spins. With Microwave Office we are able to accurately design our complex products and get them to market faster."

*Kimmo Koskiniemi
Engineering Group Manager
Pulse Antenna Division
www.pulseeng.com/antennas*

THE SOLUTION

What design problem did AWR's software help you to solve?

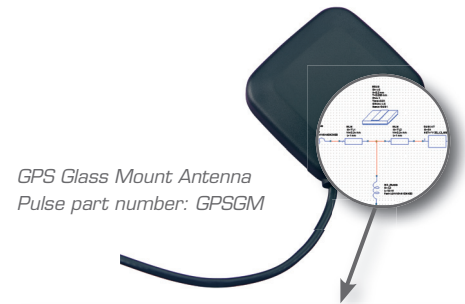
We need a complete, powerful, uncomplicated design flow that we can be confident will enable us to deliver our complex antenna designs quickly and to a variety of exacting specifications. For the design of the latest integrated antenna modules and solutions like 2.4Ghz ceramic Bluetooth, and GPS, Pulse uses Microwave Office software to efficiently design optimized products that meet our demanding requirements.

Why did you choose Microwave Office? Pulse has been using the APLAC RF simulator for over a decade as one of its main simulation tools. As a satisfied customer, we were then able to upgrade to the Microwave Office design environment and to take advantage of additional AWR technologies that are extremely important for the success of our future designs. We have been very happy with the accuracy of AWR's models as well as the simulation engines being first-rate. The ability to have layout integrated with the circuit schematic is key: the Microwave Office tool makes layout much less complicated, complements our existing CAD solution, and helps us to streamline the entire design process.

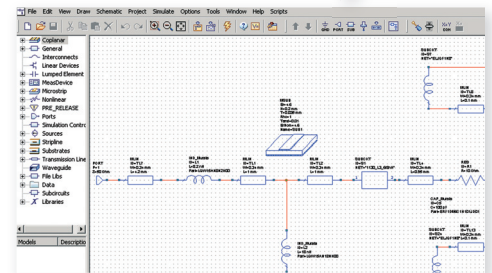
What were the key benefits of using AWR software? Our design process has improved since we incorporated Microwave Office software into our design flow. We are now able to use the software suite to not only create the layout but to also call upon EMSight™ to accurately model antenna matching circuits. We also use the APLAC scripting capabilities to optimize circuit behavior and include component tolerances. We are extremely satisfied with local support and training services; AWR has supplied us with an optimal design and simulation solution that covers our highly demanding application.

ABOUT MICROWAVE OFFICE

Microwave Office design suite is the industry's fastest growing microwave design platform and has revolutionized the communications design world by providing users with a superior choice. Built on the unique AWR high-frequency design environment platform with its unique Unified Data Model™, Microwave Office software is exceptionally intuitive and offers powerful, innovative technologies, and unprecedented interoperability, enabling integration with best-in-class tools for each part of the design process. Microwave Office design suite includes all of the essential technology: linear and nonlinear circuit simulators, EM analysis tools, integrated schematic and layout, statistical design capabilities and parametric cell libraries with built-in DRC.



GPS Glass Mount Antenna
Pulse part number: GPSGM



Microwave Office schematic of GPS active antenna module circuit.



Ceramic 2.4 GHz BT/WLAN/WiFi Antenna.
Pulse part number: W3008 and W3008C.



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