

## Mimix Uses Microwave Office to Successfully Design Industry-Leading 35-45GHz Receiver

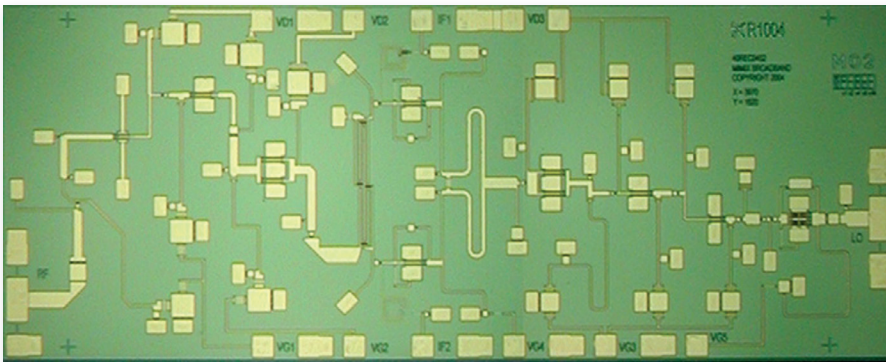
### CUSTOMER BACKGROUND

Mimix Broadband, Inc., an ISO 9001-registered company, designs, develops and supplies high performance gallium arsenide (GaAs) semiconductors from DC to 50 GHz for microwave and millimeter-wave wireless communications applications - as bare die or in surface mount packages.

Mimix has assembled a team of world-class scientists focused on the development of state-of-the-art semiconductors for the last decade. The Company also leverages strategic partnerships for manufacturing, in order to expedite the time-to-market cycle and meet market requirements.

### THE DESIGN CHALLENGE

The challenge was to integrate four functions on a single chip. AWR's Microwave Office software enabled the Mimix design team to integrate all of these functions together and accurately model and simulate the final performance.



*Integrated receiver, single chip device at 38GHz.*

### THE SOLUTION

The solution was to integrate four functions on a single chip: a low noise amplifier, an image reject mixer, an LO buffer amplifier, and an LO frequency doubler. Each building block was separately designed and its performance was simulated and optimized. The structure of the MWO unified design environment made it easy to simultaneously optimize performance and design an integrated layout all within the one project.

AWR software was ideal for the following reasons:

- Integrated structure of the AWR design environment
- Ability to make changes in layout and schematic mode simultaneously
- Clear and extensive documentation
- Superior technical support

The ability to make changes in layout and schematic mode simultaneously was integral to the success of the design task. Critical sections of the design were EM simulated to ensure that coupling was not affecting simulated performance. The end result was a highly integrated 35-45GHz receiver, XR1004, that is leading the industry in performance and level of integration.

# Mimix BROADBAND™

Customer:  
Mimix Broadband, Inc.

Application:  
Integrated Receiver, Single  
Chip Device at 38GHz

AWR Software:  
Microwave Office™

“With intense time-to-market pressures, our designers need proven design flows that work seamlessly and Microwave Office fills this need. . . The fully integrated and easy-to-use solution speeds the design time of microwave and millimeter-wave integrated circuits. In addition, the product comes with clear and extensive documentation and the support provided is first class”

Dr. Simon Mahon  
Director of MMIC Design  
Mimix Broadband, Inc.  
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