

DESIGN NOTES

Comments on the Use of EM Solvers for Waveguide Feed Analysis

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In the recent article “Simulations and Measurements of a Circular Waveguide Septum Feed” [1], CST Microwave Studio was utilized in the simulation of a waveguide septum feed. While a high level of accuracy and agreement with measurement was obtained using the Microwave Studio Transient Solver, the general accuracy of the Integral Equation Solver for S-parameter simulation was called into question. Although the rationale for this in the article is unclear, it is important to note that all the solvers available in CST Studio Suite can in fact be used to obtain accurate and consistent results.

In this case, the authors of the article were generous enough to allow CST engineers to examine the septum model and utilize all three of Microwave Studio’s general purpose high frequency solvers (transient domain, frequency domain and integral equation) on it. A refined mesh is always necessary to obtain accurate results in all 3D electromagnetic solvers. In Figures 1 and 2, the mutual coupling and return loss are shown respectively after mesh convergence was obtained in each case. A high degree of agreement between the different solvers is apparent, particularly on the mutual coupling which is at a more appreciable level.

Readers can find more information at www.cst.com, and may contact CST at: support@us.cst.com

Reference

1. J. Pawlan, R. Galuscak, “Simulations and Measurements of a Circular Waveguide Septum Feed,” *High Frequency Electronics*, July 2010.

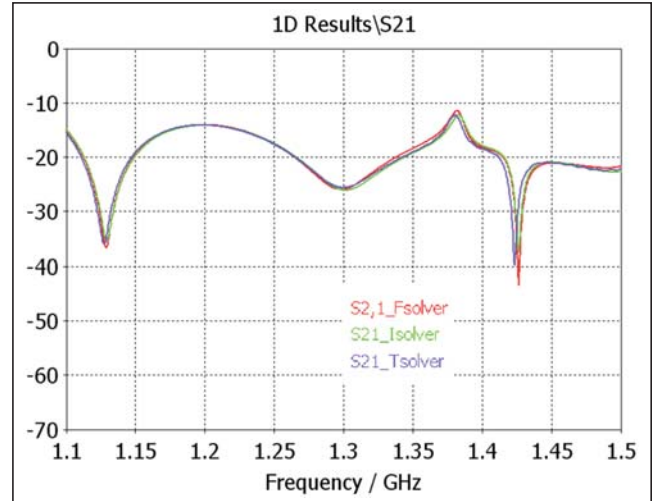


Figure 1 · Mutual Coupling (S_{21}).

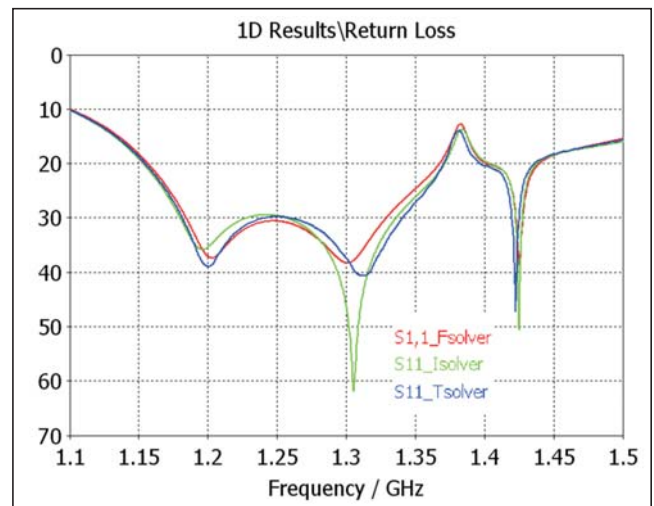


Figure 2 · Return Loss.

Wanted: Engineer Hiring Search Information

(Adapted from an e-mail received from a senior engineer)

I’m a design engineer at an electrical products manufacturer. We make consumer products as well as large-scale commercial systems. We have made control products for almost 15 years, and are continuing to add wireless functionality to new and existing products.

The RF challenges mostly involve the implementation of off-the-shelf RFICs, as well as small antenna design, prototyping, and test/debug. We’re looking for someone who is very hands-on with a broad background — i.e., not someone who has spent their whole career with only simulation tools.

For the past year, we’ve been trying to find experienced RF engineers with this background but with little success. I’m wondering if you have any suggestions for us as to how we could better find suitable candidates. Are there search firms, online communities, or other avenues that you could recommend?

We invite comments from engineers who have recently gone through the hiring process, and engineering managers who have completed successful staff position searches. Send them to editor@highfrequencyelectronics.com. A summary of responses will be published in a future issue. —Editorial Director