

INSIDERS' GUIDE:

FPGAs, Tools, and Boards



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FPGAs, or “Field Programmable Gate Arrays” show enormous promise for embedded systems - from ASIC prototyping to medical to military to telecommunications. FPGAs are exciting and powerful! But they have their downside as well. This Insiders’ Guide 2009 edition outlines the FPGA ecosystem, provides an in-depth survey analysis, offers vendor interviews, and details the FPGA vendor community.

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EXECUTIVE SUMMARY

FPGAs, or “Field Programmable Gate Arrays,” show enormous promise for embedded systems - from ASIC prototyping to medical to military to telecommunications applications. A savvy engineer might consider FPGAs because of their processing power, their flexibility and reprogrammability, their ability to combine and implement “intellectual property” (IP), or a litany of many reasons. FPGAs are exciting and powerful! But they have their downside as well: they are notoriously difficult to program, have a relatively steep learning curve, and the “ecosystem” of providers, tools companies, media outlets, IP, and services around FPGAs is weakly developed.

This *Insider's Guide* is here to help. First, it outlines the key issues in using FPGAs, identifying the top Internet resources and categorizing FPGA vendors by product or service offering. Second, a survey of FPGA “experts” and evaluators provides insights into what real engineers are doing (or trying to do) with FPGAs, alongside interviews with vendors of FPGA hardware, software, and/or services. Finally, appendices identify the most important Internet resources and classify companies by product or service offering.

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