



GateFlow is Pentek’s family of extendable FPGA products. The GateFlow product line includes the *GateFlow FPGA Design Kit* to ease custom algorithm development, the *GateFlow IP Core Libraries*, and the *GateFlow Factory-Installed Cores* in Pentek FPGA board products.

For the latest GateFlow product information and free IP core evaluation go to:  
[pentek.com/fpga](http://pentek.com/fpga)

Pentek offers popular high-performance signal processing algorithms in the GateFlow IP Core Libraries. These algorithms are designed expressly for Xilinx FPGAs and are tested on Pentek hardware product platforms. These cores take full advantage of the numerous hardware multipliers to achieve highly-parallel processing structures that can dramatically outperform programmable RISC and DSP processors.

**Pentek IP Core Examples**

Although more will follow, initial offerings are FFT and digital receiver cores designed specifically for Xilinx Virtex-II and Virtex-II Pro FPGAs.

Model 4954 Cores -401 and -404 are high-speed, pipelined 1024- and 4096-point FFT engines. Calculation times for the -401 and -404 cores are less than 8 and 32 µsec, respectively — more than ten times faster than optimized FFT algorithms running on 500 MHz PowerPCs or C6000 DSPs!

Model 4954 Cores -421 and -422 are high-speed wideband digital downconverter (DDC) cores similar in function to the Texas Instruments GC1012B, but with enhanced speed, performance and programmability. Both cores handle real and complex inputs at data rates up to 160 MHz and 296 MHz, respectively.

Model 4954 Core -440 performs radar pulse compression by performing matched filtering using a fast convolution processing algorithm.

**Evaluation and Licensing**

You can download an evaluation copy of any member of the GateFlow IP Core Library and utilize ModelSim to simulate the function, performance, resource utilization and allocation within your own FPGA design before you purchase. Each core of the GateFlow IP Core Library is available separately under the standardized Xilinx SignOnce IP Project License, a multivendor common license for FPGA-based IP, which allows unlimited use of each core for any given project.

The downloadable evaluation cores are available at: [pentek.com/gateflow](http://pentek.com/gateflow)

**Installed Cores**

If you are not an FPGA expert, ask for Pentek Factory-Installed Cores. These cores are delivered to you preinstalled in your Pentek FPGA-based product of choice and are fully supported with Pentek ReadyFlow Board Support Libraries. Purchasing these popular factory-installed cores saves you the time and costs of acquiring the FPGA development tools and developing custom FPGA code.

GateFlow IP Core and Pentek Hardware Compatibility Chart							
Hardware Models	Xilinx FPGA	Model 4954 GateFlow IP Core Option					
		-401	-404	-421	-422	-430	-440
Model 4205-300	XC2V3000	C*	C*	C	–	–	C*
Model 6228-300	XC2V3000	C	C	C	–	–	C*
Model 6235-300	XC2V3000	C, F	C, F	C, F	–	–	C*
Model 6236-300	XC2V3000	C, F	C, F	C, F	–	–	C*
Model 6250-300	XC2V3000	C, F	C, F	C	–	–	C*
Model 6251-020	XC2VP20	–	–	C	C	–	C*
Model 6251-050	XC2VP50	C	C	C	C	C	C
Model 6256-020	XC2VP20	–	–	C	C	–	C*
Model 6256-050	XC2VP50	C	C	C	C	C	C
Model 6821/22-020	XC2VP20	–	–	C	C	–	C*
Model 6821/22-050	XC2VP50	C	C	C	C	C	C
Model 6826-070	XC2VP70	–	–	–	–	–	–
Model 6826-100	XC2VP100	–	–	–	–	–	–
Model 7x31-300	XC2V3000	–	–	C	–	–	C*
Model 7x40-050	XC2VP50	C	C	C	C	C, F	C*

- \* Contact factory for compatible board/core versions
- C: Core compatible with this hardware, installable by customer
- F: Core available as factory-installed option
- Core not compatible with this hardware