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## LatticeNEWS November 2008

### IP Suites Offer a Total IP Solution for Less

Lattice's selection of bundled IP cores provide designers with greater flexibility at a reduced cost.

Traditionally, Intellectual Property (IP) cores are licensed for a specific end-product. This approach works well if you have a specific project that needs a specific IP function added. But, if you find yourself working on many solutions within an application space, over a period of time, a much more straight-forward approach is helpful.



Lattice's bundled IP cores, known as IP Suites, provide many of the functions required to develop a total solution for some of today's hottest applications. Each IP Suite includes a number of related IP cores, supporting multiple Lattice FPGA families. Lattice IP Suites are licensed with a time-based licensing approach, meaning there is no limit to how many uses you make of the IP cores during the licensing period. License extensions are available at a reduced rate as well. The following table summarizes the IP cores included in each IP Suite, and the FPGA families supported:

✓ - combination is included in the IP Suite

	FPGA Technology					
	MachXO	LatticeXP	LatticeXP2	LatticeECP/EC	LatticeECP2/M	LatticeSC
<b>IP Value Suite</b>						
DDR Controller		✓	✓	✓	✓	✓
DDR2 Controller			✓		✓	✓
FFT Compiler			✓	✓	✓	
FIR Filter			✓	✓	✓	
Tri-Speed MAC		✓	✓	✓	✓	✓
<b>System Design IP Suite</b>						
DDR Controller		✓	✓	✓	✓	✓
DDR2 Controller			✓		✓	✓
PCI Master/Target 32-bit	✓	✓	✓	✓	✓	✓
PCI Target 32-bit	✓	✓	✓	✓	✓	✓
PCI Express x1					✓	
PCI Express x4					✓	
Scatter-Gather DMA Controller					✓	✓
<b>WiMAX Design IP Suite</b>						
Block Convolutional Encoder		✓	✓	✓	✓	✓
Block Viterbi Decoder		✓	✓	✓	✓	✓
Dynamic Block RS Decoder		✓	✓	✓	✓	✓
Dynamic Block RS Encoder		✓	✓	✓	✓	✓

	MachXO	LatticeXP	LatticeXP2	LatticeECP/EC	LatticeECP2/M	LatticeSC
FFT Compiler			✓	✓	✓	
Interleaver/De-Interleaver		✓	✓	✓	✓	✓
<b>DSP Design IP Suite</b>						
CIC Filter		✓	✓	✓	✓	✓
DA-FIR Filter		✓	✓	✓	✓	✓
FFT Compiler			✓	✓	✓	
FIR Filter			✓	✓	✓	
Num. Cont. Oscillator (NCO)		✓	✓	✓	✓	✓
<b>1 GbE Design IP Suite</b>						
DDR Controller		✓	✓	✓	✓	✓
DDR2 Controller			✓		✓	✓
SGMII					✓ (ECP2M Only)	✓
Tri-Speed MAC		✓	✓	✓	✓	✓
<b>10 GbE Design IP Suite</b>						
10 GbE MAC					✓	✓
DDR Controller		✓	✓	✓	✓	✓
DDR2 Controller			✓		✓	✓
SPI-4.2					✓	✓

### How It Works

It's easy to get started using Lattice IP suites. Just follow these simple steps:

1. Contact **your Lattice sales representative** to order the Suite you want
2. Sign the Lattice IP usage/license agreement (you can get this from your Lattice sales representative)
3. When your order is processed, just **request an updated ispLEVER license**, and you're licensed to use the IP for 1 year – with no limits on the number of target designs, IP reconfigurations or FPGA technologies used. When the 1-year period is over, you can extend your IP Suite license at a discounted rate.

Since Lattice IP cores are configured with the IPexpress tool, included with the **ispLEVER software**, a licensed copy of the ispLEVER is required to use the IP suites. Each IP Suite is a node-locked license type.

### Try Before You Buy

Using the Lattice IPexpress tool you can create custom configurations of IP cores, fully integrate them into your design, and even test them in hardware before you buy anything. These trial configurations will only run for a limited time in hardware however (usually 30 minutes), after which time you'll have to re-program the silicon device.

If you like what you see, just purchase the IP core license to remove the time-limited restriction and you're done.

### Ordering Information

#### Part Number

IP Value Suite: DS-VAL-ST-U1

System Design IP Suite: DS-SYS-ST-U1

WiMAX Design IP Suite: DS-WMX-ST-U1

DSP Design IP Suite: DS-DSP-ST-U1

1 GbE Design IP Suite: DS-1GE-ST-U1  
10 GbE Design IP Suite: DS-XGE-ST-U1