

## LatticeXP2 Low-Cost Non-Volatile FPGA



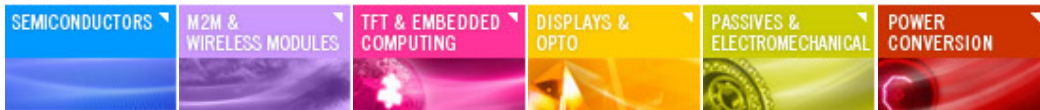
The LatticeXP2 devices combine a Look-up Table (LUT) based FPGA fabric with Flash Non-volatile cells in an architecture referred to as flexiFLASH. The flexiFLASH approach provides benefits such as instant-on, small footprint, on chip storage with FlashBAK embedded block memories and Serial TAG memory and design security. The parts also support Live Updates with TransFR, 128-bit AES Encryption and Dual-Boot technologies. The LatticeXP2 FPGA fabric utilizes an underlying LatticeECP2 architecture that was optimized from the outset with high performance and low cost in mind. The LatticeXP2 devices include LUT-based logic, distributed and embedded memory, Phase Locked Loops (PLLs), pre-engineered source synchronous I/O and enhanced sysDSP blocks.

### Key Features

- ❖ **Single Chip Solution**
  - Small footprint, instant-on and complete design security through on-chip Flash
- ❖ **Low Cost Mainstream FPGA Architecture**
  - Densities from 5K to 40K lookup tables (LUTs)
- ❖ **Live Update Programmability**
  - Fast, secure design changes
- ❖ **On-chip DSP Blocks**
  - Three to eight blocks for high performance multiply, accumulate
- ❖ **Pre-Engineered DDR and LVDS I/O Interfaces**
  - DDR / DDR2 interfaces up to 200 MHz

### Design Support and Evaluation Boards

- ❖ **ispLeverCORE Intellectual Property & ispLEVER Design Tools**
- ❖ **LatticeXP2 Applications**
- ❖ **LatticeXP2 Standard Evaluation Board**
  - This board is an efficient design that will help you quickly evaluate the LatticeXP2 FPGA on a ready-made platform.
- ❖ **LatticeXP2 Advanced Evaluation Board**
  - This board features more advanced interfaces for system-level evaluation and development.



### LatticeXP2 Selection Guide

Device	XP2-5	XP2-8	XP2-17	XP2-30	XP2-40
<b>LUTs (K)</b>	5	8	17	29	40
<b>Distributed RAM (Kbits)</b>	10	18	35	56	83
<b>EBR SRAM (Kbits)</b>	166	221	276	387	885
<b>EBR SRAM Blocks</b>	9	12	15	21	48
<b>sysDSP Blocks</b>	3	4	5	7	8
<b>18x18 Multipliers</b>	12	16	20	28	32
<b>PLL</b>	2	2	4	4	4
<b>Maximum Available I/O</b>	172	201	358	472	540
<b>Packages</b>	<b>I/O Count</b>				
<b>132-pin csBGA (8 x 8 mm)</b>	86	86			
<b>144-pin TQFP (20 x 20 mm)</b>	100	100			
<b>208-pin PQFP (28 x 28 mm)</b>	146	146	146		
<b>256-ball ftBGA (17 x 17 mm)</b>	172	201	201	201	
<b>484-ball fpBGA (23 x 23 mm)</b>			358	363	363
<b>672-ball fpBGA (27 x 27 mm)</b>				472	540