

Qiyao High Performance Series

BST SP700T FPGA

Product Brochure

I. Product Overview

BSTSP700T FPGA is a SRAM FPGA that is comparable to XC7VX690T . Its logic resources include CLB with 6-input LUT, high-performance user IO module, single-block Block RAM with a capacity of 36k bits, digital signal processing module DSP, clock management module CMT, ADC module, PCIe module, high-speed serial interface SERDES module, configuration module and interconnection resources. Its main parameters are as follows:

II. Main Features

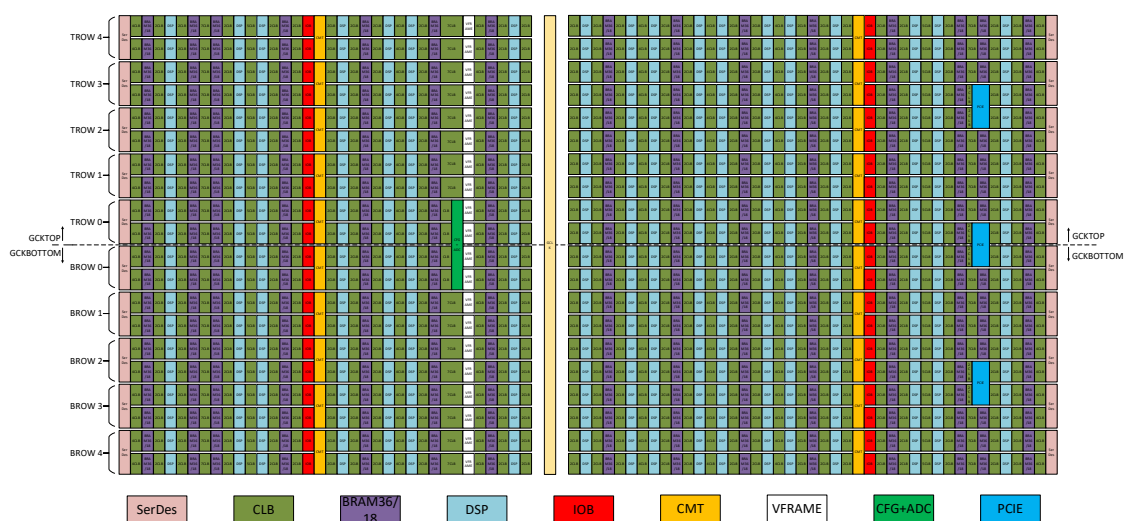
- The logic implementation is based on a 6-input lookup table (which can be configured as a distributed RAM);
- On-chip data cache RAM with a single block capacity of 36 Kb, dual- port mode , and built-in FIFO ;
- High-speed user IO can support multiple level standards such as single-ended LVCMOS, LVTTTL, and multiple differential level standards, with a voltage range of 1.2V~1.8V;
- High-speed user IO interface supports DDR3, with a maximum rate of up to 1600 Mb /s
- DSP module contains 25×18 multipliers, 48 -bit accumulators and pre- adders, which can be used for high-performance filtering algorithms such as optimal symmetric coefficient filtering;
- High-precision low-jitter clock management unit (CMT) , including phase-locked loop (PLL) and mixed-mode clock management (MMCM) , the clock management module has a maximum input frequency of up to 800 MHz ;
- Global clock tree frequency can reach up to 625 MHz;
- High-speed serial interface SERDES module, line rate from 500M b/s to a maximum of 12.5 G b/s (up to 13.1G b/s in the device junction temperature range of 0 ~ 85 °C);
- Integrated PCI e hard core , supporting up to Gen3 x8 ;
- Integrated 12-bit 1 MSPS ADC for on-chip temperature and voltage sensor monitoring;
- Supports multiple configuration modes, including support for universal memory interface and 256-bit AES encryption.

Surface 1 -1. BSTSP700T product contains internal resources

RESOURCE ITEM	BSTSP700T			
	RF1930 PACKAGE	RF 1927 PACKAGE	RF1761 PACKAGE	R F1157 PACKAGE
Equivalent logic unit number	693120			
Number of Slices	108300			
C LB constitutes distributed RAM (Kb)	10888			
Number of DSPs	3600			
Number of BRAMs	2940 (single BRAM capacity 18K b) 1470 (single BRAM capacity 36 KB)			
Maximum BRAM capacity (Kb)	52920			
CMT quantity	20			
Number of ADCs	1			
Number of PCIE modules	2	3	3	2
High-speed interface SERDES channel number	24	8 0	36	2 0
High-performance user IO quantity	1000	6 00	850	6 00

III. Functional Block

BSTSP 700T FPGA is as follows:



Picture 1 -1Detailed layout of BSTSP700T chip architecture