

• Specifications subject to change without notice.

KODEN

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E-1072

Signal Processing Platform



Overview

The E-1072 is a software reconfigurable signal processing platform designed especially for array signal processing systems. Multi-channel signals both input and output are sampled synchronously, and high-speed digitized signals are processed on FPGAs and DSPs in parallel. The architecture of the platform is highly suitable to build and develop novel communication systems like MIMO.

Features

- The Down Converter converts RF signals to baseband signals, supporting frequency in the range of 1.5 GHz to 3.8 GHz.
- The Up Converter converts baseband IQ signals to RF signals, supporting frequency in the range of 1.5 GHz to 3.8 GHz.
- Five FPGAs are mounted on the AD Converter and the DA Converter boards respectively, allowing high-speed input and output processing of baseband IQ signals.
- Four DSPs and three FPGAs are cluster connected on the DSP board, enabling high-speed signal processing in parallel. Two SFP transceivers supporting Gigabit Ethernet/RocketIO are mounted on the board for achieving high-speed data transfer.
- The AD Converter, the DA converter, and the DSP board are connected with 128-bit private data bus, achieving high-speed data transfer.
- Windows® applications work on the CPU board. Data exchange can be easily implemented between the CPU board and external devices through Ethernet LAN, including software reconfiguration for downloading and rewriting on either DSP or FPGA.

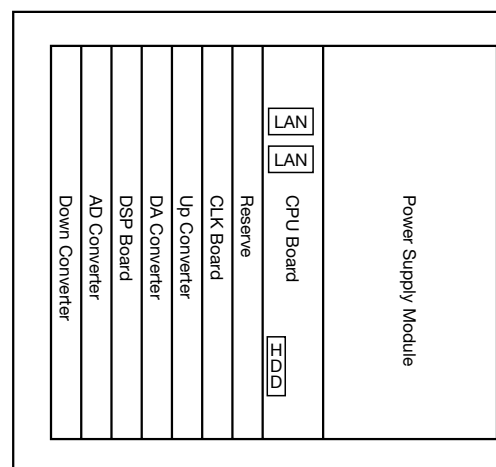
Specifications

Parameter	Specifications
Number of Input Channels	4 Channels (RF)
Number of Output Channels	4 Channels (RF)
DSP on Board	ADSP-TS201S, TS203S
FPGA on Board	Virtex-4 SX55, FX60, LX100
Host Bus Form	Compact PCI bus
LAN Interface	1000base-T/100base-TX
Display Output	DVI-I
Power Requirements	AC 100 V, 500 VA (50 Hz / 60 Hz)
Dimensions (mm)	320(H) x 380(W) x 380(D)

Configuration

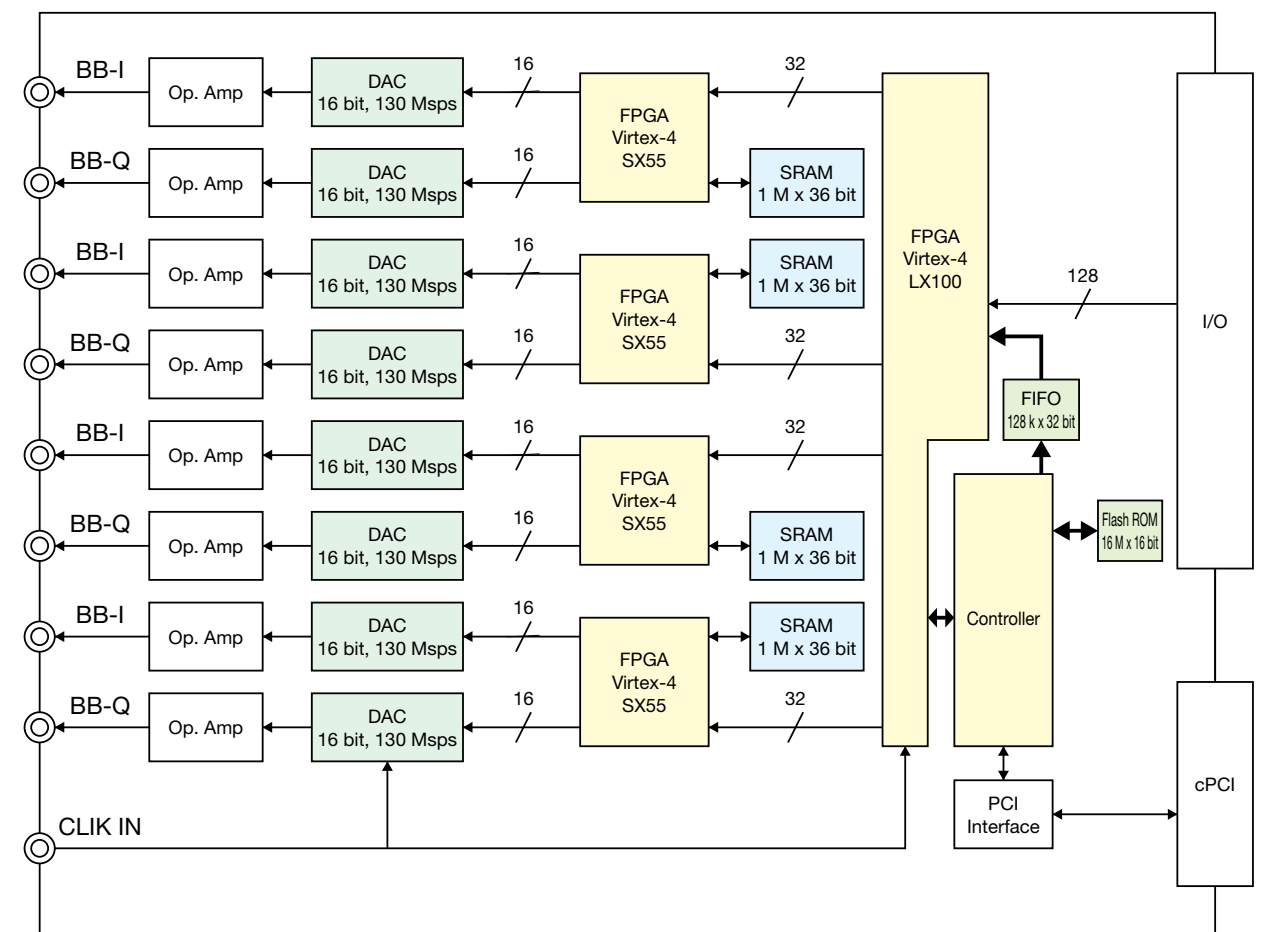
Name	Type
Down Converter	A16-89X00
Up Converter	A16-90X00
Multi-Channel Analog/Digital (AD) Converter	A16-91100
Digital Signal Processor (DSP)	A16-92100
Multi-Channel Digital/Analog (DA) Converter	A16-93100
CLK Board	A16-71100
CPU Board	SC2630
Chassis (including Power supply module)	J54886JA
Operating System	Windows XP® Professional

Appearance



DA Converter

Configuration



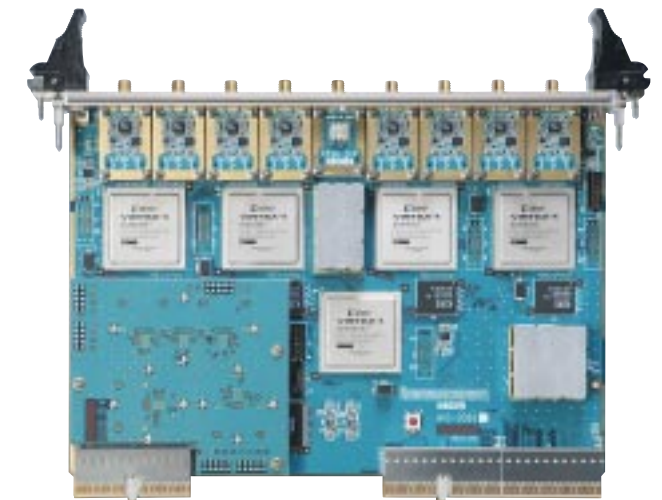
Features

- Output 8 analog signals at sampling frequencies upto 130 MHz
- Xilinx Virtex-4 FPGA, SX55 LX100 (User-programmable)
- High speed data transfer with a private 128-bit width data bus
- Compact PCI bus interface

Input/Output Specifications

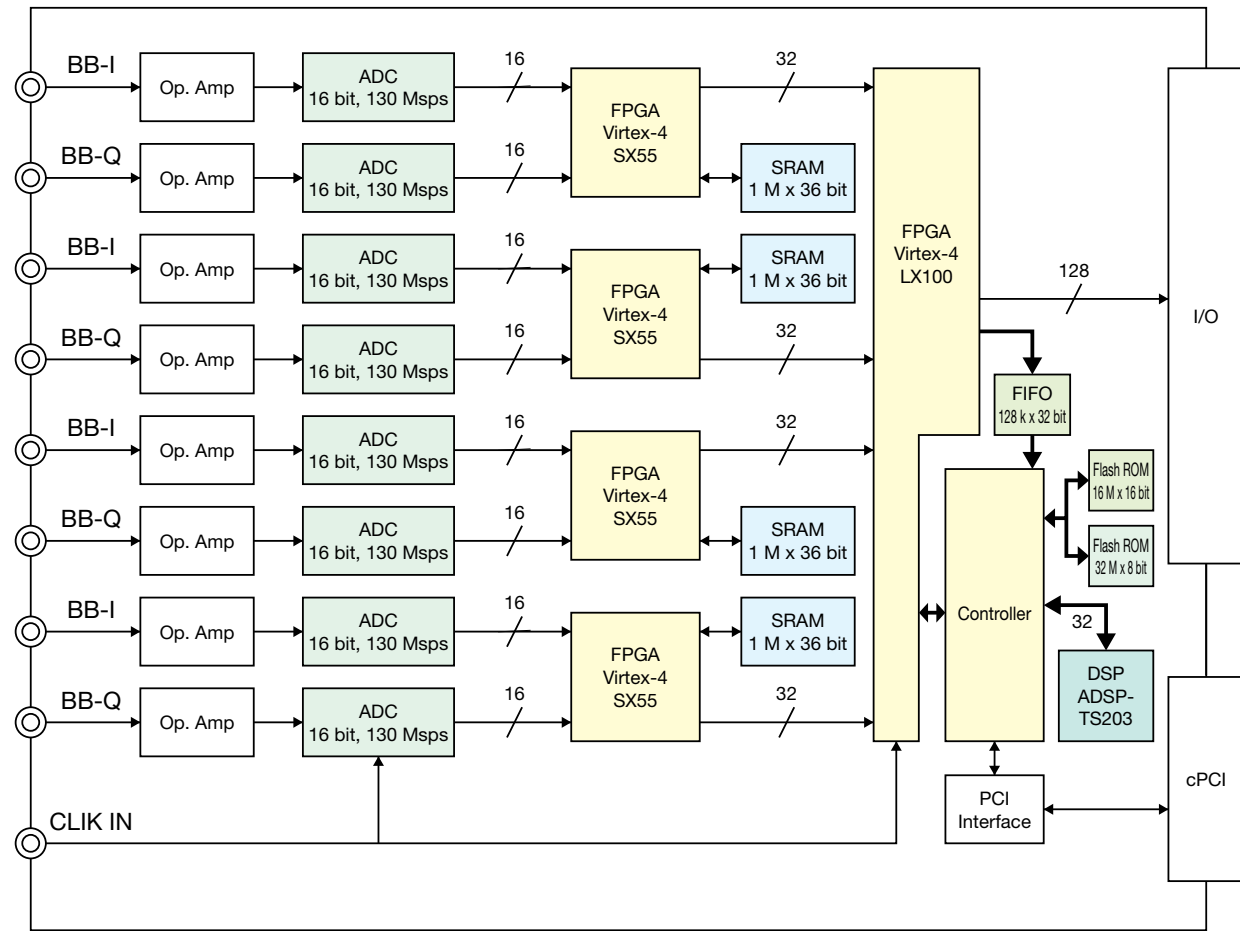
Parameter	Specifications
Number of Port	Signal Output: 8, CLK Input: 1, Private data bus: 128-bit
DA Converter Sample Rate	Less than 130 MHz
Signal Input Level	+0.5 V to -0.5 V
CLK Input Frequency	40 MHz to 130 MHz
CLK Input Power	0 dBm (Recommend)
Power Consumption (Peak Value)	+3.3(V) 15(A), +5(V) 3(A), +12(V) 1(A), -12(V) 1(A)

Appearance



AD Converter

Configuration



Features

- Input 8 analog signals at sampling frequencies upto 130 MHz
- Tiger SHARC DSP, ADSP-TS201s (User-programmable)
- Xilinx Virtex-4 FPGA, SX55 LX100 (User-programmable)
- High speed data transfer with a private 128-bit width data bus
- Compact PCI bus interface

Input/Output Specifications

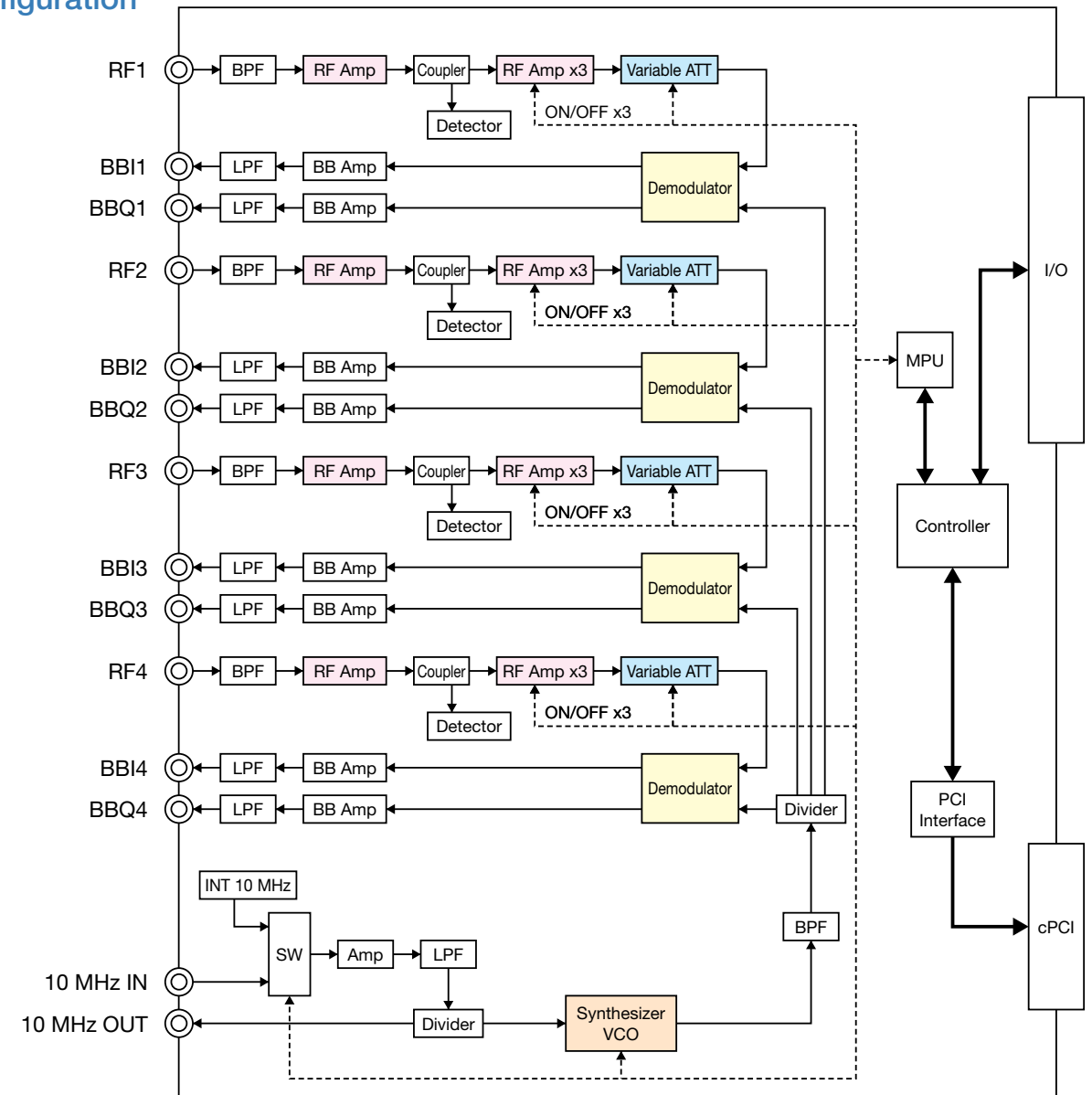
Parameter	Specifications
Number of Port	Signal Input: 8, CLK Input: 1, Private data bus: 128-bit
Signal Input Frequency	DC to 50 MHz
AD Converter Sample Rate	Less than 130 MHz
Signal Input Level	+0.5 V to -0.5 V
CLK Input Frequency	40 MHz to 130 MHz
CLK Input Power	0 dBm (Recommend)
Power Consumption (Peak Value)	+3.3(V) 15(A), +5(V) 3(A), +12(V) 1(A), -12(V) 1(A)

Appearance



Down Converter

Configuration



Features

- Synchronized 4 channel converter
- A Choice of frequency range
- Control via compact PCI bus

Appearance

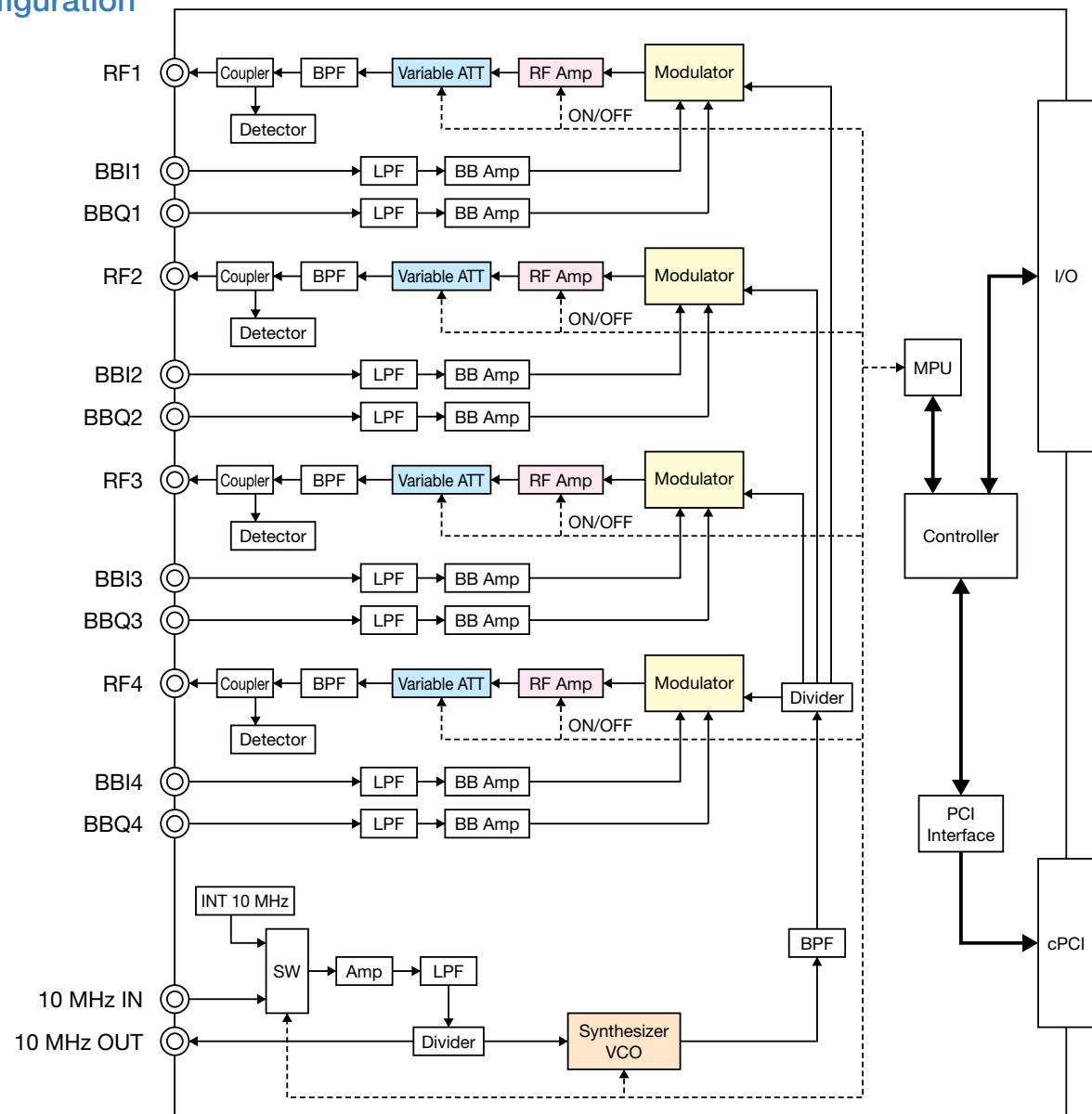


Input/Output Specifications

Parameter	Specifications
Number of Port	RF Input: 4, BB Output: 8, 10 MHz Reference port (Input/Output): 1 each
RF Port	Selectable frequency between 1.5 GHz and 3.8 GHz * An optional RF Board A16-82100 for 5 GHz band frequency range.
BB Port	DC to 20 MHz
Power Consumption (Peak Value)	+3.3(V) 0.5(A), +5(V) 0.3(A), +12(V) 2(A), -12(V) 0.1(A)

Up Converter

Configuration



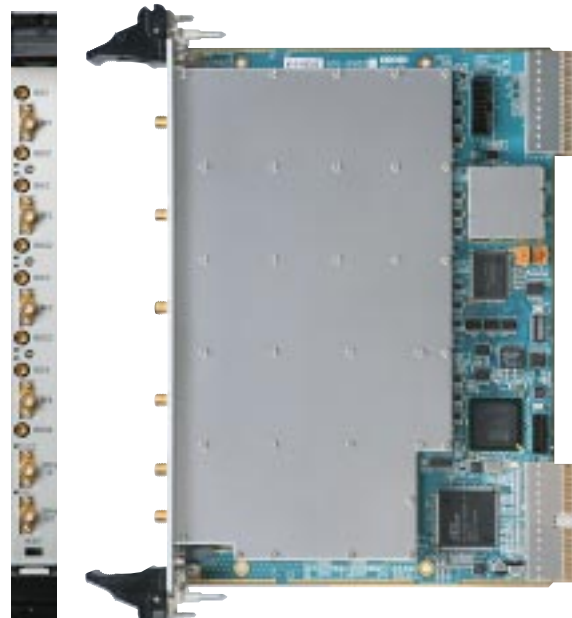
Features

- Synchronized 4 channel converter
- A Choice of frequency range
- Control via compact PCI bus

Input/Output Specifications

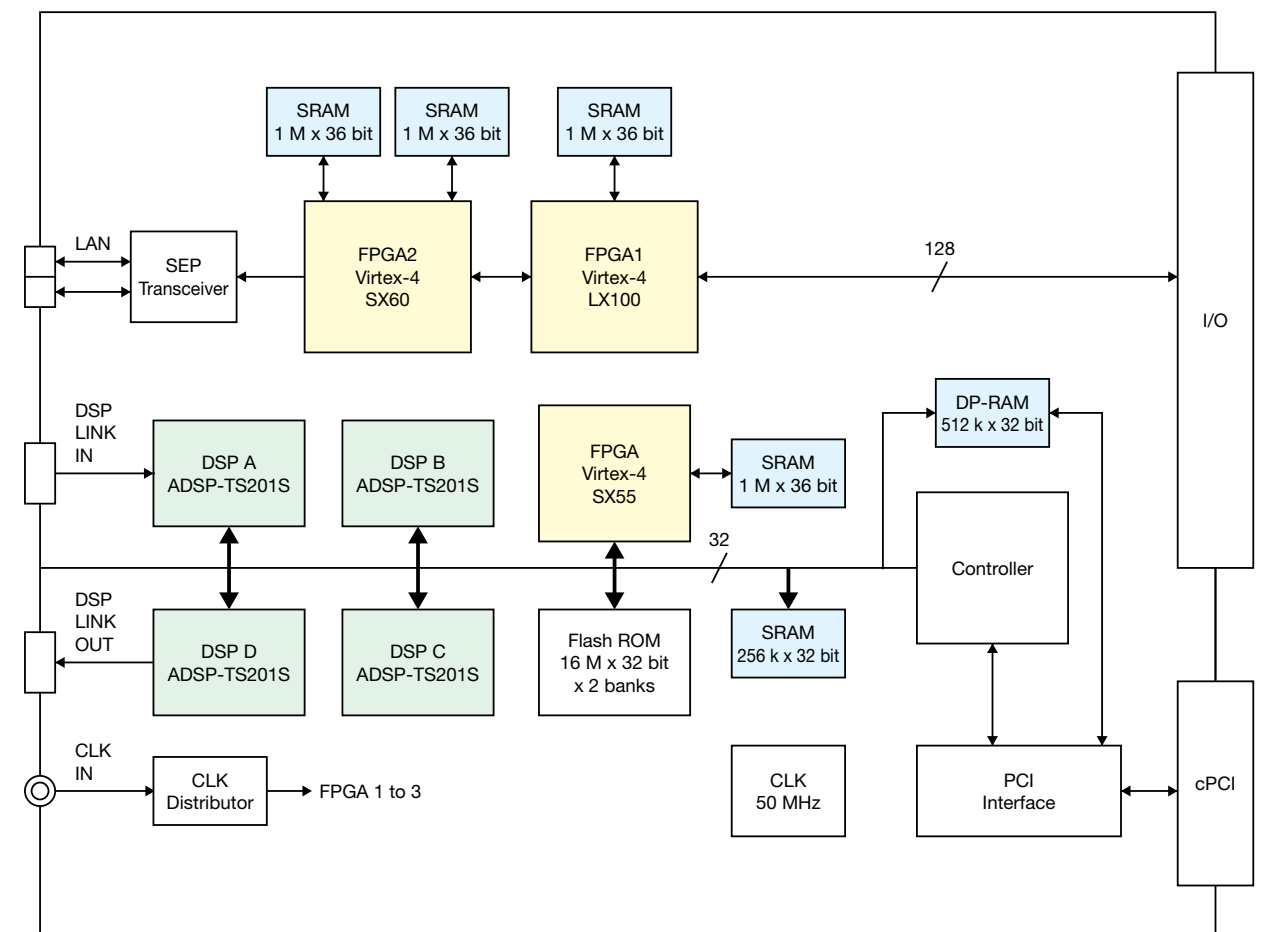
Parameter	Specifications
Number of Port	RF Output: 4, BB Input: 8, 10 MHz Reference Port (Input/Output): 1 each
RF Port	Selectable frequency between 1.5 GHz and 3.8 GHz * An optional RF Board A16-82100 for 5 GHz band frequency range.
BB Port	DC to 20 MHz
Power Consumption (Peak Value)	+3.3(V) 0.5(A), +5(V) 0.3(A), +12(V) 2(A), -12(V) 0.1(A)

Appearance



DSP Board

Configuration



Features

- Tiger SHARC DSP, ADSP-TS201s (User-programmable)
- Xilinx Virtex-4 FPGA, SX55 FX60 LX100 (User-programmable)
- 2 x SFP transceivers supporting Gigabit Ethernet/RocketIO
- High speed data transfer with private 128-bit width data bus
- Compact PCI bus interface

Input/Output Specifications

Parameter	Specifications
Number of Port	SFP transceiver: 2, DSP Link: 2, Private data bus: 128-bit
SFP Transceiver	LC connector (for multi mode) Wavelength: 850 nm
DSP Link	Serial port: 2
Power Consumption (Peak Value)	+3.3(V) 0.5(A), +5(V) 3(A), +12(V) 0.5(A), -12(V) 0.5(A)

Appearance

