

dspblok™ 21369+fpga DSP & FPGA Module

- Altera Cyclone III FPGA
- Analog Devices ADSP-21369
- SHARC DSP Flash, SDRAM & EEPROM Memory
- 3.3V Operation
- Compact Size (60mm x 60mm)
- 2mm Headers for Easy Integration into Custom PCB's



The dspblok™ 21369+fpga are highly integrated digital signal processing DSP & FPGA Modules that combine an Analog Devices ADSP-21369 SHARC DSP with an Altera Cyclone III FPGA. The board includes SDRAM, Flash and EEPROM memory. An on-board switching power supply supports the core voltage requirements of the DSP and the FPGA so that only 3.3V is required to power the module.

The peripherals include two SPI ports, a UART, eight SPORTs, eight ASRCs and I2C - and this is before we consider the FPGA's resources which include up to 66 multipliers, LVDS transceivers, PLLs, RAM and LEs! All the connections are brought out to standard 2mm dual row header footprints. Analog Devices Visual DSP++ and Altera's Quartus development tools support the board. Individual JTAG ports are brought out so that both devices can be emulated simultaneously.

The dspblok 21369+fpga modules are pin compatible with our dspblok 21369zx DSP Module. Two versions are available. The dspblok 21369cy05 uses a Cyclone III EP3C5 and the dspblok 21369cy25 uses the more powerful Cyclone III EP3C25.

The dspblok 21369+fpga is supported by a family of dspblok power supplies, data converter modules and digital I/O modules. The dspblok ps-usb can be used to upload DSP code and FPGA configuration files to the dspblok 21369+fpga. All you need is a simple terminal program and a USB cable to program the on-board flash.

Product Variations:

dspblok 21369cy05 - 400MHz, Cyclone III EP3C5 FPGA, 0 to +70 °C	P/N A.11369-05
dspblok 21369cy25 - 400MHz, Cyclone III EP3C25 FPGA, 0 to +70 °C	P/N A.11369-25
dspblok 21369cy25 - 333MHz, Cyclone III EP3C25 FPGA, -40 to +85 °C	P/N A.11369-25-ET

Clock Options:

External Clocking (standard)
22.1184 MHz (append -22.1184 to part number)
24.576 MHz (append -24.576 to part number)
25.000 MHz (append -25.000 to part number)

Accessories:

Danville JTAG Adapter P/N A.08154

Key Components:

Analog Devices ADSP-21369KBPZ-3A DSP
Altera EP3C5U256C8N, EP3C25U256C8N or EP3C25U256I8N FPGA
Micron MT48LC4M32 SDRAM
Atmel AT26DF081 8Mb Serial Flash
Microchip 25LC640 Serial EEPROM

Exposed I/O (3.3 V):

DAI 20 – DAI 1 (also connected to FPGA)
DPI 14 – DPI 7, DPI 4, DPI 3 – DPI 1 (assigned as SCK, MISO & MOSI)
FLG1, FLG0
RESET# (Open Drain)
DSP CLKOUT
FPGA – 70 pins uncommitted (not connected to DSP)
JTAG – Not chained - DSP & FPGA

Size:

60mm x 60mm
Height: 4mm above PCB, 2mm + 4.3mm (mating header) below PCB
PCB Thickness 1.6mm

Connectors:

Dual row 2mm headers

Power Requirements:

3.3V – Current TBD
Largely dependent on core clock, computation load and FPGA configuration.



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