



The World Leader in High Performance Signal Processing Solutions



Blackfin ADSP-BF538 & ADSP-BF538F *(w/ FLASH memory)*

New Product Announcement

May 22, 2006

DSPS Division





ADSP-BF538 & ADSP-BF538F w/ Flash Memory

- ◆ **Latest additions to the Blackfin Processor Family**
 - Code Compatible with all Blackfin Processors
 - Supported by In-Circuit-Emulator (ICE), VisualDSP++® , EZ-KIT Lite® evaluation kit hardware
 - Supported by Green Hills Software MULTI® Tools and Integrity OS

- ◆ **A winning combination of High-performance (Up to 500 MHz) Blackfin processor with integrated Flash memory, in multi-chip module (*BF538F only*)**

- ◆ **Provides a greater number of standard interfaces over ADSP-BF533**
 - Additional SPORTs, UARTs, SPIs, TWI, GPIO

- ◆ **Dual DMA Controllers provide higher bandwidth to support added peripherals**

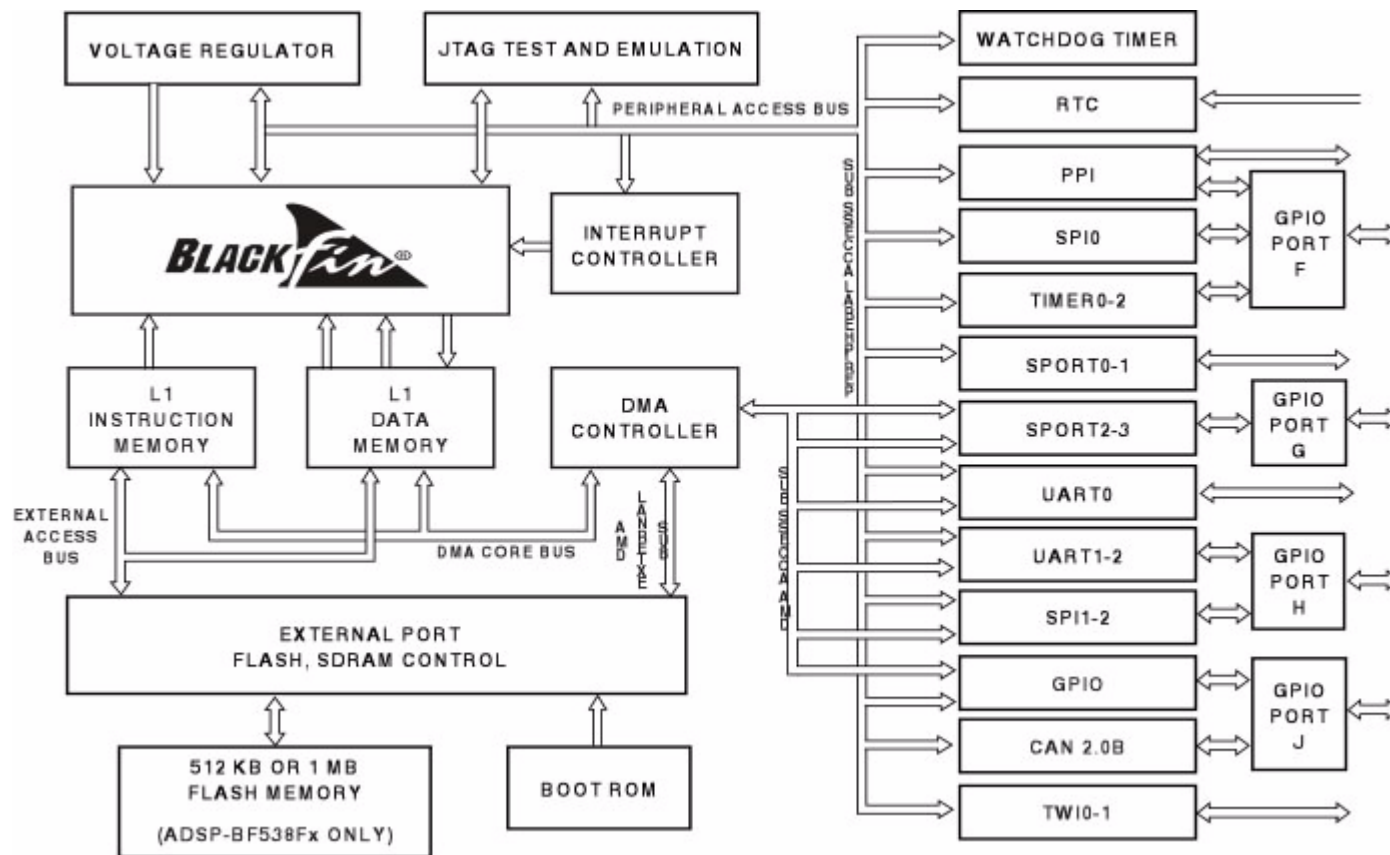


Blackfin ADSP-BF538 & BF538F Products

- *Key Product Features*

- ◆ **Up to 500 MHz Core performance / 1000 MMACs @ -40C / +85C**
- ◆ **0.8V to 1.2V Core Voltage w/ On-Chip Voltage Regulation**
- ◆ **148 Kbytes on-chip RAM**
- ◆ **CAN 2.0B Controller**
- ◆ **BF538F products are multi-chip module**
 - **BF538F products offered in either 512KB or 1MB configurations**
 - **70ns FLASH access time**
- ◆ **BF538 has no Flash Memory**
- ◆ **4 Serial Ports**
- ◆ **3 SPI Ports**
- ◆ **3 UARTs**
- ◆ **Parallel Peripheral Interface (PPI)**
- ◆ **2 Two Wire Interface (Connection to I²C compatible devices)**
- ◆ **Up to 54 General Purpose I/O**
- ◆ **316-ball Mini-BGA package**
 - **17mm x 17mm, 0.8mm pitch**
 - **Pb-Free / RoHS Compliant**

ADSP-BF538 / BF538F Block Diagram





ADSP-BF538 & ADSP-BF538F

- *Potential Applications*

- ◆ **Industrial and Instrumentation**
 - Test, Measurement and Control Systems
 - Networked Control Systems
 - Food Service Equipment
 - Vending Machines
 - Exercise Equipment
- ◆ **Medical**
 - Personal ECG
 - Blood Analyzer
 - Ultrasound
- ◆ **Biometrics**
 - Fingerprint Recognition
 - Security Systems

Target applications where multiple device connections are required.



Blackfin ADSP-BF538 & ADSP-BF538F

- *What will the Customer want to know?*

<u>Product #</u>	<u>Max Core Clk</u>	<u>Flash Memory</u>	<u>Amb. Oper. Temp</u>	<u>1Ku Price</u>
ADSP-BF538BBCZ-4A	400 MHz	No	-40C to +85C	\$12.64
ADSP-BF538BBCZ-4F4	400 MHz	512KB	-40C to +85C	\$15.97
ADSP-BF538BBCZ-4F8	400 MHz	1MB	-40C to +85C	\$16.97
ADSP-BF538BBCZ-5A	500 MHz	No	-40C to +85C	\$16.09
ADSP-BF538BBCZ-5F4	500 MHz	512KB	-40C to +85C	\$19.42
ADSP-BF538BBCZ-5F8	500 MHz	1MB	-40C to +85C	\$20.42

All products are registerable!!



Blackfin ADSP-BF538 & ADSP-BF538F - *Competition*

◆ Freescale PowerPC

- MPC5200 = 400MHz, no FLASH → \$19.37 @ 1Ku

◆ Freescale ColdFire

- MCF5235 = 150MHz / 100MHz, no FLASH → \$19.78 / \$16.28 @ 1Ku
- MCF528x = 80MHz / 66MHz, 256KB FLASH → \$22.56 / \$18.79 @ 1Ku
- MCF548x = 200MHz, no FLASH → \$24.31 @ 1Ku
- MCF521x = 66MHz, 512KB FLASH → \$13.02 @ 1Ku

◆ Atmel 32-bit AVR series

- AT91RM9200 = 180MHz, no FLASH → \$11.74 @ 1Ku

◆ Texas Instruments C28x

- TMS3202812R = 150MHz, no FLASH → \$10.65 @ 1Ku
- TMS3202812F = 150MHz, 256KB FLASH → \$15.65 @ 1Ku

◆ Above choices to customers:

- High performance (400MHz+) – OR – integrated FLASH
- Low performance (<= 150MHz) – AND – integrated FLASH

◆ Blackfin BF538/538F offered 400-500MHz and FLASH / No FLASH options



Blackfin ADSP-BF538 & BF538F Products

- *When can I get it?*

<u>Whole Product Status</u>	<u>Availability</u>
Preliminary Product Data Sheet	<i>Now</i>
In-Circuit-Emulator (ICE) support	<i>Now</i>
Processor Manual	<i>Now</i>
Prelim. Hardware Reference Manual	<i>July 2006</i>
BF538 & BF538F Product Samples	<i>July 2006</i>
Anomaly List (Rev 0.3)	<i>July 2006</i>
ADDS-BF538F-EZLITE Evaluation Kit	<i>October 2006</i> <i>Use ADDS-BF537-EZLITE Now</i>
Release to Production	<i>October 2006</i>