

# Процессоры и DSP

## Описание

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Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

эл.почта: agu@nt-rt.ru || сайт: <https://analog.nt-rt.ru/>

# Processors & DSP

Explore our portfolio of DSPs, mixed-signal control processors, embedded processors, and microcontrollers. This design center helps you reach your design goals quickly.

Whether you are in the evaluation stage, the design stage, or prototyping stage, this page is your centralized information hub for processor and DSP design resources. Use the links on this page to compare products, to evaluate features, or to try out software. Frequently check for the latest design information, while you develop your product hardware and software.

## Processors & DSP Resources

Use this linked list of processor and DSP design resources to explore the range of products and to visit the related EngineerZone support community.

## Hardware

Use hardware development tools from Analog Devices for the best experience interacting with signal processing hardware in real-time.

# **Hardware**

Development hardware tools support on-chip debugging, processor evaluation, and reliable development platforms for software and system development. These tools consist of emulators, EZ-Kit development kits, and EZ-Board demonstration systems.

## **Emulators**

Rapid on-chip debugging allows developers to load code, set breakpoints, and observe variables, memory, registers, etc. There is a USB-based Emulator and the latest Blackfin 100B Emulator.

## **Evaluation Boards and Kits**

Search or browse the library of available evaluation boards and kits to find the the information and documents needed to evaluate a specific ADI product.

## **Evaluation EZ-Extender Boards**

# Emulators

Emulators: Rapid on-chip debugging allows developers to load code, set breakpoints, and observe variables, memory, registers, etc. There is a USB-based Emulator and the latest Blackfin 100B Emulator.

Debug Agent Board: The Standalone Debug Agent is intended to provide a modular low cost emulation solution for EZ-Boards as well as evaluation boards designed by third parties. The standalone debug agent is very similar to the debug agent that is on existing EZ-KIT Lites but will have the flexibility to move from one board to another board.

With solutions ranging from cost-effective emulators (for evaluation or early development) to high performance emulators (for full development and system validation), Analog Devices provides easy, portable, non-intrusive, target-based emulation for processors through a JTAG interface. These powerful emulators perform a wide range of emulation functions, including single-step and full speed execution with pre-defined breakpoints, and viewing and/or altering of register and memory contents.

[Blackfin Emulators](#)

[SHARC Emulators](#)

[TigerSHARC Emulators](#)

[ADSP-21xx Emulators](#)

[ARM Cortex Based Product Emulators](#)

[Emulator Tools Upgrade Archives](#)

# Blackfin Processors Software and Tools

The Blackfin Processors Software and Tools page provides a convenient look-up table to indicate to users what evaluation platforms, extender cards, emulators, software development tools, and middleware are available for the specific Blackfin processor they have chosen to evaluate for their designs.

| Blackfin Processors Software and Tools |                               |                           |   |  |
|--|-------------------------------|---------------------------|---|--|
| Target Processor                       | Hardware Evaluation Platforms | Emulators                 | Software Development Tools                        | Middleware and Software Modules                  |
| ADSP-BF700                             | Processor/System Evaluation:  | Low-Cost ICE-1000         | CrossCore® Embedded Studio Integrated Development | OS and Middleware                                |
| ADSP-BF701                             | ADSP-BF707 EZ-Kit             | High-Performance ICE-2000 |   | Blackfin Software Modules                        |
| ADSP-BF702                             | ADSP-BF707 BLIP               |                           |   | Algorithmic, Add-in and Plug-in Software Modules |
| ADSP-BF703                             | ADSP-BF706 EZ-KIT Mini        |                           |   |  |
| ADSP-BF704                             | System Expansion Boards:      |                           |   |  |
| ADSP-BF705                             | Audio EI3 Extender            |                           |   |  |
| ADSP-BF706                             | Video Decoder EI3 Extender    |                           |   |  |
| ADSP-BF707                             | Video Encoder EI3 Extender    |                           |   |  |
|  | WVGA/LCD EI3 Extender         |                           |   |  |
|  | Camera EI3 Extender           |                           |   |  |
|  | ADZS-AUDIOHDMI-EI3 Extender   |                           |   |  |

|            |   |                   |                            |  |
|------------|---|-------------------|----------------------------|--|
| ADSP-BF606 | Processor/System Evaluation:  | Low-Cost ICE-1000 | CrossCore®                 | OS and Middleware                                      |
| ADSP-BF607 | ADSP-BF609 EZ-Board   | High-Performance  | Embedded Studio            | Blackfin Software                                      |
| ADSP-BF608 | System Expansion Boards:  | ICE-2000          | Integrated                 | Modules  |
| ADSP-BF609 | Audio EI3 Extender<br>Video Decoder EI3 Extender<br>Video Encoder EI3 Extender<br>WVGA/LCD EI3 Extender |                   | Development<br>Environment | Algorithmic, Add-in and<br>Plug-in Software<br>Modules |

|            |   |   |  |   |
|------------|---|---|--|---|
| ADSP-BF592 | Processor/System Evaluation:<br>ADSP-BF592 EZ-Kit | Low-Cost ICE-1000<br>High-Performance<br>ICE-2000 | CrossCore®<br>Embedded Studio<br>Integrated<br>Development<br>Environment<br>VisualDSP++<br>Integrated<br>Development<br>Environment | OS and Middleware<br>Blackfin Software<br>Modules<br>Algorithmic, Add-in and<br>Plug-in Software<br>Modules |
|------------|---|---|--|---|

|            |  |   |  |   |
|------------|--|---|--|---|
| ADSP-BF504 | Processor/System Evaluation:<br>ADSP-BF506F EZ-Kit | Low-Cost ICE-1000<br>High-Performance<br>ICE-2000 | CrossCore®<br>Embedded Studio<br>Integrated<br>Development<br>Environment<br>VisualDSP++<br>Integrated<br>Development<br>Environment | OS and Middleware<br>Blackfin Software<br>Modules<br>Algorithmic, Add-in and<br>Plug-in Software<br>Modules |
|------------|--|---|--|---|

|   |  |   |  |   |
|---|--|---|--|---|
| ADSP-BF512<br>ADSP-BF514<br>ADSP-BF516<br>ADSP-BF518                                | Processor/System Evaluation:<br>ADSP-BF518 EZ-Kit<br><br>System Expansion Boards:<br>Landscape LCD EZ-Extender<br>Bluetooth EZ-Extender<br>USB EZ-Extender   | Low-Cost ICE-1000<br>High-Performance<br>ICE-2000 | CrossCore®<br>Embedded Studio<br>Integrated<br>Development<br>Environment<br>VisualDSP++<br>Integrated<br>Development<br>Environment | OS and Middleware<br>Blackfin Software<br>Modules<br>Algorithmic, Add-in and<br>Plug-in Software<br>Modules |
| ADSP-BF522<br>ADSP-BF522C<br>ADSP-BF524<br>ADSP-BF524C<br>ADSP-BF526<br>ADSP-BF526C | Processor/System Evaluation:<br>ADSP-BF526 EZ-Board<br>ADSP-BF526 EZ-Kit<br><br>System Expansion Boards:<br>Landscape LCD EZ-Extender<br>Bluetooth EZ-Extender<br>USB EZ-Extender<br>Debug Agent Board | Low-Cost ICE-1000<br>High-Performance<br>ICE-2000 | CrossCore®<br>Embedded Studio<br>Integrated<br>Development<br>Environment<br>VisualDSP++<br>Integrated<br>Development<br>Environment | OS and Middleware<br>Blackfin Software<br>Modules<br>Algorithmic, Add-in and<br>Plug-in Software<br>Modules |
| ADSP-BF523<br>ADSP-BF523C<br>ADSP-BF525<br>ADSP-BF525C<br>ADSP-BF527<br>ADSP-BF527C | Processor/System Evaluation:<br>ADSP-BF527 EZ-Kit<br><br>System Expansion Boards:<br>USB-LAN EZ-Extender<br>FPGA EZ-Extender   | Low-Cost ICE-1000<br>High-Performance<br>ICE-2000 | CrossCore®<br>Embedded Studio<br>Integrated<br>Development<br>Environment<br>VisualDSP++<br>Integrated<br>Development<br>Environment | OS and Middleware<br>Blackfin Software<br>Modules<br>Algorithmic, Add-in and<br>Plug-in Software<br>Modules |

|            |                              |                   |                 |                         |
|------------|------------------------------|-------------------|-----------------|-------------------------|
| ADSP-BF542 | Processor/System Evaluation: | Low-Cost ICE-1000 | CrossCore®      | OS and Middleware       |
| ADSP-BF544 | ADSP-BF548 EZ-Kit            | High-Performance  | Embedded Studio | Blackfin Software       |
| ADSP-BF547 | System Expansion Boards:     | ICE-2000          | Integrated      | Modules                 |
| ADSP-BF548 | A-V EZ-Extender              |                   | Development     | Algorithmic, Add-in and |
| ADSP-BF549 | FPGA EZ-Extender             |                   | Environment     | Plug-in Software        |
|            | Landscape LCD EZ-Extender    |                   | VisualDSP++     | Modules                 |
|            | Bluetooth EZ-Extender        |                   | Integrated      |                         |
|            |                              |                   | Development     |                         |
|            |                              |                   | Environment     |                         |

|            |                              |                   |                 |                         |
|------------|------------------------------|-------------------|-----------------|-------------------------|
| ADSP-BF534 | Processor/System Evaluation: | Low-Cost ICE-1000 | CrossCore®      | OS and Middleware       |
| ADSP-BF536 | ADSP-BF537 EZ-Kit            | High-Performance  | Embedded Studio | Blackfin Software       |
| ADSP-BF537 | System Expansion Boards:     | ICE-2000          | Integrated      | Modules                 |
|            | USB-LAN EZ-Extender          |                   | Development     | Algorithmic, Add-in and |
|            | A-V EZ-Extender              |                   | Environment     | Plug-in Software        |
|            | Bluetooth EZ-Extender        |                   | VisualDSP++     | Modules                 |
|            | FPGA EZ-Extender             |                   | Integrated      |                         |
|            | Audio EZ-Extender            |                   | Development     |                         |
|            | Landscape LCD EZ-Extender    |                   | Environment     |                         |

|            |                              |                   |                 |                         |
|------------|------------------------------|-------------------|-----------------|-------------------------|
| ADSP-BF538 | Processor/System Evaluation: | Low-Cost ICE-1000 | CrossCore®      | OS and Middleware       |
| ADSP-      | ADSP-BF538F EZ-Kit           | High-Performance  | Embedded Studio | Blackfin Software       |
| BF538F     | System Expansion Boards:     | ICE-2000          | Integrated      | Modules                 |
|            | Landscape LCD EZ-Extender    |                   | Development     | Algorithmic, Add-in and |
|            |                              |                   | Environment     | Plug-in Software        |
|            |                              |                   | VisualDSP++     | Modules                 |
|            |                              |                   | Integrated      |                         |
|            |                              |                   | Development     |                         |
|            |                              |                   | Environment     |                         |

|            |  |  |   |   |
|------------|--|--|---|---|
|            | <p>ADSP-BF531<br/>ADSP-BF532<br/>ADSP-BF533</p> <p>Processor/System Evaluation:<br/>ADSP-BF533 EZ-Kit<br/>System Expansion Boards:<br/>Blackfin EZ-Extender<br/>USB-LAN EZ-Extender<br/>A-V EZ-Extender<br/>FPGA EZ-Extender<br/>Audio EZ-Extender</p> | <p>Low-Cost ICE-1000<br/>High-Performance<br/>ICE-2000</p> | <p>CrossCore®<br/>Embedded Studio<br/>Integrated<br/>Development<br/>Environment<br/>VisualDSP++<br/>Integrated<br/>Development<br/>Environment</p> | <p>OS and Middleware<br/>Blackfin Software<br/>Modules<br/>Algorithmic, Add-in and<br/>Plug-in Software<br/>Modules</p> |
| ADSP-BF561 | <p>Processor/System Evaluation:<br/>ADSP-BF561 EZ-Kit<br/>System Expansion Boards:<br/>Blackfin EZ-Extender<br/>USB-LAN EZ-Extender<br/>A-V EZ-Extender<br/>FPGA EZ-Extender<br/>Audio EZ-Extender</p>   | <p>Low-Cost ICE-1000<br/>High-Performance<br/>ICE-2000</p> | <p>CrossCore®<br/>Embedded Studio<br/>Integrated<br/>Development<br/>Environment<br/>VisualDSP++<br/>Integrated<br/>Development<br/>Environment</p> | <p>OS and Middleware<br/>Blackfin Software<br/>Modules<br/>Algorithmic, Add-in and<br/>Plug-in Software<br/>Modules</p> |

# SHARC Processors Software and Tools

The SHARC Processors Software and Tools page provides a convenient look-up table to indicate to users what evaluation platforms, extender cards, emulators, software development tools, and middleware are available for the specific SHARC processor they have chosen to evaluate for their designs.

| Target Processor | Hardware Evaluation Platforms                       | Emulators                                      | Software Development Tools                                       | Middleware and Software Modules |
|------------------|---|--|--|---------------------------------|
| ADSP-21562       | Processor/System Evaluation:<br>ADSP-21569 EZ-KIT   | Low-Cost ICE-1000<br>High-Performance ICE-2000 | CrossCore® Embedded Studio<br>Integrated Development Environment | OS and Middleware               |
| ADSP-21563       |   |  |  |                                 |
| ADSP-21565       |   |  |  |                                 |
| ADSP-21566       |   |  |  |                                 |
| ADSP-21567       |   |  |  |                                 |
| ADSP-21569       |   |  |  |                                 |
| ADSP-SC570       | Processor/System Evaluation:<br>ADSP-SC573 EZ-Board | Low-Cost ICE-1000<br>High-Performance ICE-2000 | CrossCore® Embedded Studio<br>Integrated Development Environment | OS and Middleware               |
| ADSP-SC571       |   |  |  |                                 |
| ADSP-SC572       |   |  |  |                                 |
| ADSP-SC573       |   |  |  |                                 |
| ADSP-21571       |   |  |  |                                 |
| ADSP-21573       |   |  |  |                                 |

|  |  |  |   |   |
|--|--|--|---|---|
| ADSP-SC589<br>ADSP-SC587<br>ADSP-21587                             | Processor/System Evaluation:<br>ADSP-SC589 EZ-Board<br>SHARC Audio Module (SAM)<br><br>System Expansion Boards<br>(SAM):<br>Audio Project Fin<br>A <sup>2</sup> B Class-D Amplifier Module | Low-Cost ICE-1000<br>High-Performance ICE-2000 | CrossCore® Embedded Studio<br>Integrated Development Environment  | OS and Middleware<br>SAM Bare Metal Framework   |
| ADSP-SC584<br>ADSP-SC583<br>ADSP-SC582<br>ADSP-21584<br>ADSP-21583 | Processor/System Evaluation:<br>ADSP-SC584 EZ-Board  | Low-Cost ICE-1000<br>High-Performance ICE-2000 | CrossCore® Embedded Studio<br>Integrated Development Environment  | OS and Middleware   |
| ADSP-21483<br>ADSP-21486<br>ADSP-21487<br>ADSP-21488<br>ADSP-21489 | Processor/System Evaluation:<br>ADSP-21489 EZ-Board<br>ADSP-21489 EZ-Kit<br><br>System Expansion Boards:<br>Audio EZ-Extender<br>USB EZ-Extender   | Low-Cost ICE-1000<br>High-Performance ICE-2000 | CrossCore® Embedded Studio<br>Integrated Development Environment<br>VisualDSP++<br>Integrated Development Environment | OS and Middleware<br>SHARC Software Modules<br>Algorithmic, Add-in and Plug-in Software Modules |
| ADSP-21478<br>ADSP-21479   | Processor/System Evaluation:<br>ADSP-21479 EZ-Board<br>ADSP-21479 EZ-Kit<br><br>System Expansion Boards:<br>Audio EZ-Extender<br>USB EZ-Extender   | Low-Cost ICE-1000<br>High-Performance ICE-2000 | CrossCore Embedded Studio<br>Integrated Development Environment<br>VisualDSP++<br>Integrated Development Environment  | OS and Middleware<br>SHARC Software Modules<br>Algorithmic, Add-in and Plug-in Software Modules |

|  |  |  |   |   |
|--|--|--|---|---|
| ADSP-21467<br>ADSP-21469               | Processor/System Evaluation:<br>ADSP-21469 EZ-Board<br>ADSP-21469 EZ-Kit<br>System Expansion Boards:<br>Audio EZ-Extender<br>USB EZ-Extender | Low-Cost ICE-1000<br>High-Performance ICE-2000 | CrossCore® Embedded Studio<br>Integrated Development Environment<br>VisualDSP++<br>Integrated Development Environment | OS and Middleware<br>SHARC Software Modules<br>Algorithmic, Add-in and Plug-in Software Modules |
| ADSP-21371<br>ADSP-21375               | Processor/System Evaluation:<br>ADSP-21375 EZ-Kit  | Low-Cost ICE-1000<br>High-Performance ICE-2000 | CrossCore® Embedded Studio<br>Integrated Development Environment<br>VisualDSP++<br>Integrated Development Environment | OS and Middleware<br>SHARC Software Modules<br>Algorithmic, Add-in and Plug-in Software Modules |
| ADSP-21367<br>ADSP-21368<br>ADSP-21369 | Processor/System Evaluation:<br>ADSP-21369 EZ-Kit<br>System Expansion Boards:<br>USB EZ-Extender   | Low-Cost ICE-1000<br>High-Performance ICE-2000 | CrossCore® Embedded Studio<br>Integrated Development Environment<br>VisualDSP++<br>Integrated Development Environment | OS and Middleware<br>SHARC Software Modules<br>Algorithmic, Add-in and Plug-in Software Modules |

# TigerSHARC Processors: Software and Tools

The TigerSHARC Processors Software and Tools page provides a convenient look-up table to indicate to users what evaluation platforms, emulators, and software development tools are available for the specific TigerSHARC processor they have chosen to evaluate for their designs.

| Processor   | Evaluation<br>EZ-Boards and EZ-KITs    | Emulators   | Software Development Tools                        |
|-------------|--|---|---|
| ADSP-TS101S | ADSP-TS201S EZ-Kit<br>Evaluation Board | USB-based Emulator<br>USB 1.1, up to 150 KB/sec           | VisualDSP++<br>Integrated Development Environment |
|             |  | High Perf USB-based Emulator<br>USB 2.0, up to 1.5 MB/sec |   |
| ADSP-TS201S | ADSP-TS201S EZ-Kit<br>Evaluation Board | USB-based Emulator<br>USB 1.1, up to 150 KB/sec           | VisualDSP++<br>Integrated Development Environment |
|             |  | High Perf USB-based Emulator<br>USB 2.0, up to 1.5 MB/sec |   |

# ADSP-21xx Processors: Software and Tools

The ADSP-21xx Processors Software and Tools page provides a convenient look-up table to indicate to users what evaluation platforms, emulators, and software development tools are available for the specific ADSP-21xx processor they have chosen to evaluate for their designs.

| Processor  | Evaluation EZ-Boards and EZ-KITs | Emulators  | Software Development Tools                            |
|--|----------------------------------|--|---|
| ADSP-2181  | N/A                              | 218x EZ-ICE Serial Emulator<br>High Speed RS-232 Serial Port   | VisualDSP++ 3.5<br>Integrated Development Environment |
| ADSP-2183<br>ADSP-2184<br>ADSP-2185<br>ADSP-2186<br>ADSP-2187<br>ADSP-2188<br>ADSP-2189M | ADSP-2189M EZ-Kit Evaluation Kit | 218x EZ-ICE Serial Emulator<br>High Speed RS-232 Serial Port   | VisualDSP++ 3.5<br>Integrated Development Environment |
| ADSP-2191<br>ADSP-2192<br>ADSP-2196  | N/A                              | USB-based Emulator<br>USB 1.1, up to 150 KB/sec<br><br>High Perf USB-based Emulator<br>USB 2.0, up to 1.5 MB/sec | VisualDSP++ 3.5<br>Integrated Development Environment |

ADSP-21990  
ADSP-21991  
ADSP-21992

N/A

USB-based Emulator  
USB 1.1, up to 150 KB/sec

High Perf USB-based Emulator  
USB 2.0, up to 1.5 MB/sec

VisualDSP++ 3.5  
Integrated Development Environment

# **Product Evaluation Boards and Kits**

Search or browse the library of available evaluation boards and kits to find the information and documents needed to evaluate a specific ADI product.

# Evaluation EZ-Extender Boards

The Blackfin EZ-Extender daughter boards and the SHARC EZ-Extender daughter boards give developers access and ability to connect various peripherals from Analog Devices and third parties to the expansion interface of the EZ-KIT Lite evaluation kits.

Evaluation kits provide a cost effective method for initial evaluation of an ADI processor or platform. With these kits you can learn more about developing with ADI's processors, software tools and prototype applications.

[Blackfin Processors Software and Tools](#)

[SHARC Processors Software and Tools](#)

[TigerSHARC Processors Software and Tools](#)

[ADSP-21xx Processors Software and Tools](#)

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Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Чита (3022)38-34-83  
Якутск (4112)23-90-97  
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

эл.почта: agu@nt-rt.ru || сайт: <https://analog.nt-rt.ru/>