**zilog**®

**WIRELESS SBCS ADVANTAGES**

- eZ80Acclaim*Plus!* Flash MCU
- Up to 4 MB Flash Memory
- Up to 1 MB SRAM
- 802.11 b/g Wireless Transceiver
- Software Library
- Preemptive Multitasking OS
- Integrated Peripherals

**TARGET APPLICATIONS**

- Home Control
- Fitness Equipment
- Industrial Control
- Smart Appliances
- Medical Devices
- Consumer Electronics

# eZ80Acclaim*Plus!*™ Wireless Zdots® Single Board Computer

## Overview

Zilog's eZ80Acclaim*Plus!* Wireless Zdots Single Board Computer (SBC) delivers a complete Wireless solution that can be easily and quickly embedded into a variety of devices to enable the Wireless capability. This fully integrated SBC offers a rich hardware feature set along with a full, royalty-free, web-server software stack, making your Wireless solution development quick, efficient, and cost effective.

## A Fully Integrated, High Performance SBC for Wireless Applications

At the center of this SBC is Zilog's award winning eZ80Acclaim*Plus!* Microcontroller, featuring a powerful 50 MHz single-cycle instruction fetch eZ80® core with 24-bit ALU, 256 KB of embedded Flash, 16 KB of SRAM and a variety of peripherals including four 16-bit timers, 32-bit GPIO, two UARTs, one SPI, and one I$^2$C and support for up to 16 MB of external memory. In addition, the eZ80Acclaim*Plus!* Wireless Zdots SBC supports up to 4 MB of NOR Flash, up to 1 MB of SRAM, and support for optional serial Flash. The SBC also includes an 802.11 b/g Wireless Transceiver with the integrated onboard antenna and optional external antenna support.

The eZ80Acclaim*Plus!* Wireless Zdots SBC also comes with a full software library that includes an integrated, preemptive multitasking real time OS that has been optimized for embedded applications, a flexible, configurable TCP/IP stack and an optional SSL plug-in. The software license for this software library is royalty-free.

## eZ80Acclaim*Plus!*™ Wireless Zdots® Key Feature Summary

- 50 MHz High performance MCU core
- Integrated 256 KB Flash memory and 16 KB SRAM
- Integrated 10/100 Mbps Ethernet MAC for networking and internet connectivity
  (**Note:** PHY is not available on Zdots SBC, but can be connected via the MII interface off the 60-pin connector)
- Flexible ZDI Debug port
- 60-pin connector
- 4x 16-bit Timers/PWM, SPI, I$^2$C, and 2x UART
- External memory options on board:

    o 128 KB – 1 MB fast SRAM

    o 2 MB – 4 MB NOR Flash

- Wireless Transceiver supports 802.11 b/g
- Integrated embedded antenna and optional external antenna
- Modular, multitasking RTOS with small footprint
- Scalable and configurable SPI TCP/IP wireless stack
- Optional Network Security Plug-in – SSL for secured data transmission and reception

## eZ80Acclaim*Plus!*™ Wireless Zdots® Block Diagram
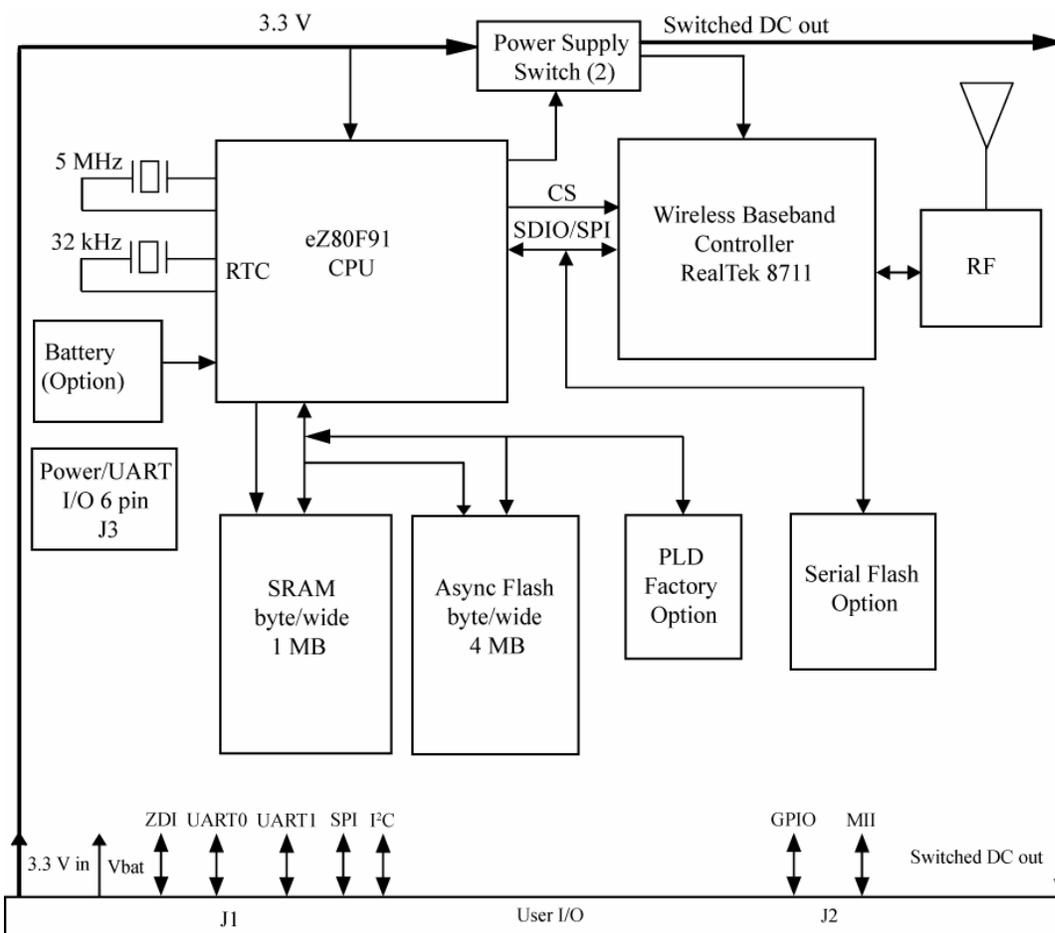
## KEY FEATURES

- eZ80Acclaim*Plus!* Flash MCU
  - Integrated 256 K Flash
  - Integrated Ethernet MAC
- On-board Flash Memory
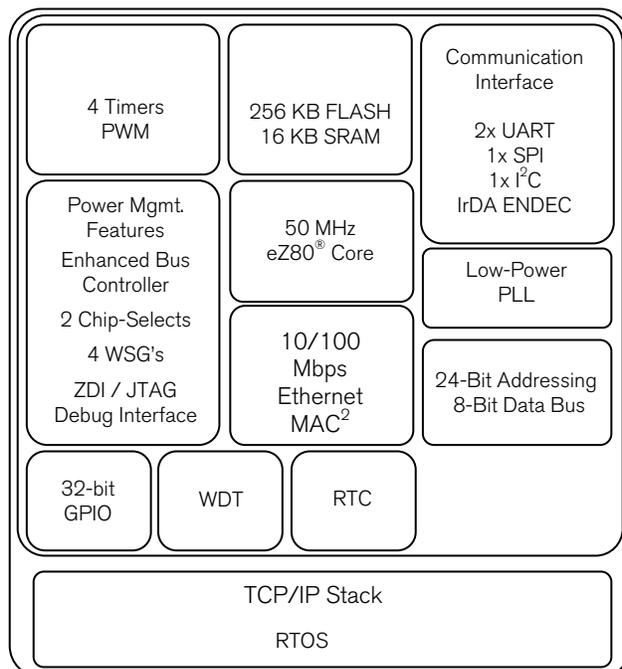- On-board SRAM Memory

## eZ80Acclaim*Plus!*™ Wireless Zdots® Detailed Feature Set

### eZ80Acclaim*Plus!*™ Flash Microcontroller

The eZ80Acclaim*Plus!* MCU operates either in eZ80® compatible (64 KB) mode or full 24-bit (16 MB) linear address mode. With increased clock speed and processor efficiency, the processing power of the eZ80Acclaim*Plus!* MCU rivals the performance of many 16-bit microprocessors. The eZ80Acclaim*Plus!* MCU features:

- Dual bank registers for fast context switching
- Block transfer instructions with expanded repeat capability
- High-performance data transfer similar to DMAs

### eZ80Acclaim*Plus!*™ Silicon Block Diagram

| | | |
|---|---|---|
| 4 Timers PWM | 256 KB FLASH 16 KB SRAM | Communication Interface 2x UART 1x SPI 1x I$^2$C IrDA ENDEC |
| Power Mgmt. Features Enhanced Bus Controller 2 Chip-Selects 4 WSG's ZDI / JTAG Debug Interface | 50 MHz eZ80® Core 10/100 Mbps Ethernet MAC[2] | Low-Power PLL 24-Bit Addressing 8-Bit Data Bus |
| 32-bit GPIO | WDT    RTC | |
| TCP/IP Stack RTOS | | |

### On-chip Flash Memory

The eZ80Acclaim*Plus!* MCU features 256 KB of Flash Program Memory and 16 KB of high speed, re-locatable SRAM.

### 10/100 BaseT Ethernet MAC (EMAC)

The eZ80Acclaim*Plus!*™ Microcontroller has an integrated IEEE 802.3 Ethernet controller has 8 KB of dynamically-configurable Tx/Rx frame buffer. The device supports 10 Mbps and 100 Mbps, full duplex operation, and an industry-standard Media Independent Interface (MII) for simple connection to an external Physical Layer Interface (PHY) device.

**Note:** The PHY is not available on the eZ80Acclaim*Plus!* Wireless Zdots SBC. For eZ80Acclaim*Plus!* Ethernet Zdots SBC, please refer to part number eZ80F917050SBCG.

### Zdots® SBC Memory Options

| SRAM | 128 KB | 1 MB |
|---|---|---|
| NOR Flash | 2 MB | 4 MB |

## KEY FEATURES

- ZTP - TCP/IP Stack
- RTOS

# eZ80Acclaim*Plus!*™ Wireless Zdots® Detailed Feature Set (continued...)

### ZTP

Zilog's TCP/IP solution (ZTP) is an integrated, preemptive multitasking OS and TCP/IP protocol software suite optimized for embedded systems. ZTP includes Zilog's RZK RTOS, and works in conjunction with the award winning eZ80Acclaim*Plus!* product family of Flash microcontrollers to provide standard network connectivity in a wide range of wireless applications. The ZTP software suite is optimized for low cost systems, and offers full-feature operating system services in addition to network services while occupying very little program memory.

The ZTP software suite provides the following features:

- Industry standard, RFC compliant protocols
- Core protocols: IPv4, TCP, UDP, DHCP/BOOTP, ICMP, IGMP, ARP, RARP
- Optional Protocols: SSL server, SNMP V3 and HTTPS
- Interconnects: UART(x2), I$^2$C, SPI
- FTP server and client services using an embedded Flash file system supporting multiple disk volumes
- Local or remote runtime debugging OS command shell
- Dynamic memory allocation support
- Selectable Wireless security – no Encryption WEP40 or WEP104
- Wireless discovery and attach APIs

### Zilog RTOS

Zilog's real-time preemptive multitasking kernel, RZK, is designed for time-critical embedded applications. RZK is configurable, scalable, and modular in design; it provides a rich-set of features via easy-to-use and well-documented APIs. Additionally, RZK features are highly optimized to the stringent memory and performance of embedded applications.

## Ordering Information

Order the eZ80Acclaim*Plus!*™ silicon, development tools and Wireless Zdots SBC from your local Zilog sales representative by using the part numbers below. For more information, or to download product collateral and/or software, please visit us at www.zilog.com.

### eZ80Acclaim*Plus!*™ Zdots® Single Board Computer (SBC) & Development Kit

| Part Number | Description |
| --- | --- |
| eZ80F91WF01SBCG | eZ80Acclaim*Plus!*™ Wireless Zdots® SBC |
| eZ80F91WF01ZCOG | eZ80Acclaim*Plus!*™ Wireless Zdots® SBC Development Kit |

## Documentation

The collateral referenced below is a sample of the documentation available for the eZ80Acclaim*Plus!* Wireless Zdots Single Board Computer. For a complete listing of all available application notes, product specifications, user manuals, and sample libraries, please visit us at www.zilog.com.

| Document Number | Description |
|---|---|
| PS0280 | eZ80Acclaim*Plus!*™ Wireless Zdots® Single Board Computer Product Specification |

The documents associated with ZTP and RZK available for download on www.zilog.com are provided below:

| Document Number | Description |
|---|---|
| PB0154 | Zilog Full-Feature TCP/IP Software Suite Product Brief |
| QS0049 | Zilog TCP/IP Software Suite Quick Start Guide |
| RM0041 | Zilog TCP/IP Software Suite Programmer's Guide |
| RM0040 | Zilog TCP/IP Stack API Reference Manual |
| PB0155 | Zilog Real-Time Kernel Product Brief |
| QS0048 | Zilog Real-Time Kernel Quick Start Guide |
| RM0006 | Zilog Real-Time Kernel Reference Manual |

⚠ **Warning:**    DO NOT USE IN LIFE SUPPORT

## LIFE SUPPORT POLICY

ZILOG'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS PRIOR WRITTEN APPROVAL OF THE PRESIDENT AND GENERAL COUNSEL OF ZILOG CORPORATION.

### As used herein

Life support devices or systems are devices which (a) are intended for surgical implant into the body, or (b) support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in a significant injury to the user. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system or to affect its safety or effectiveness.

### Document Disclaimer

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