



## eZ80AcclaimPlus!™ Wireless Zdots® Single Board Computer

### Overview

Zilog's eZ80AcclaimPlus! 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.

### WIRELESS SBCS ADVANTAGES

- eZ80AcclaimPlus! 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

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

At the center of this SBC is Zilog's award winning eZ80AcclaimPlus! 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<sup>2</sup>C and support for up to 16 MB of external memory. In addition, the eZ80AcclaimPlus! 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 eZ80AcclaimPlus! 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.

### eZ80AcclaimPlus!™ 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<sup>2</sup>C, and 2x UART
- External memory options on board:
  - 128 KB – 1 MB fast SRAM
  - 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

The block diagram illustrates the system architecture centered around the eZ80F91 CPU. The CPU is connected to a 3.3 V power supply and a 5 MHz clock source. It interfaces with a Wireless Baseband Controller (RealTek 8711) via CS, SDIO/SPI, and a shared data bus. The baseband controller is connected to an RF module. The CPU also manages SRAM (1 MB), Async Flash (4 MB), a PLD Factory Option, and a Serial Flash Option. A Battery (Option) and a Power/UART I/O 6 pin J3 are also shown. The system includes a Power Supply Switch (2) and a Switched DC out line. User I/O is managed through J1 (ZDI, UART0, UART1, SPI, I2C) and J2 (GPIO, MII).

## KEY FEATURES

- eZ80AcclaimPlus! Flash MCU
  - Integrated 256 K Flash
  - Integrated Ethernet MAC
- On-board Flash Memory
- On-board SRAM Memory

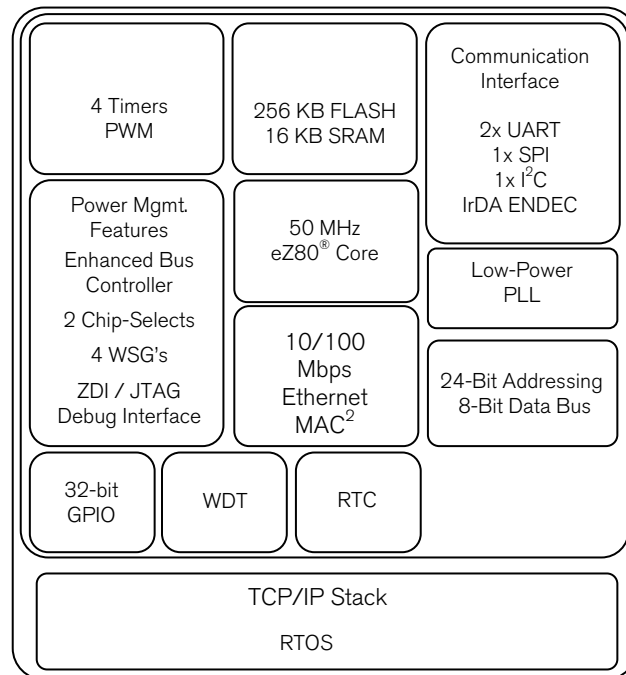
## eZ80AcclaimPlus!™ Wireless Zdots® Detailed Feature Set

### eZ80AcclaimPlus!™ Flash Microcontroller

The eZ80AcclaimPlus! 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 eZ80AcclaimPlus! MCU rivals the performance of many 16-bit microprocessors. The eZ80AcclaimPlus! MCU features:

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

### eZ80AcclaimPlus!™ Silicon Block Diagram



### On-chip Flash Memory

The eZ80AcclaimPlus! MCU features 256 KB of Flash Program Memory and 16 KB of high speed, re-locatable SRAM.

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

The eZ80AcclaimPlus!™ 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 eZ80AcclaimPlus! Wireless Zdots SBC. For eZ80AcclaimPlus! 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<sup>2</sup>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](http://www.zilog.com).

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

Part Number	Description
eZ80F91WF01SBCG	eZ80Acclaim <i>Plus!</i> ™ Wireless Zdots® SBC
eZ80F91WF01ZCOG	eZ80Acclaim <i>Plus!</i> ™ 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](http://www.zilog.com).

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Document Number	Description
PS0280	eZ80Acclaim <i>Plus!</i> ™ Wireless Zdots® Single Board Computer Product Specification

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The documents associated with ZTP and RZK available for download on [www.zilog.com](http://www.zilog.com) are provided below:

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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

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Warning: DO NOT USE IN LIFE SUPPORT

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