



Application Note

Z8 Encore! XP[®] F082A Series— Migrating from Revision B to Revision C

AN026802-0710



General Overview

This application note highlights the improvements and feature enhancements on Zilog's Z8 Encore! XP F082A Series product versions in the 20-pin and 28-pin packages only. These changes are implemented in a backward-compatible manner for easy migration to the products listed in [Table 1](#). Some of these improvements include the Watch Dog Timer and errata fixes. This document provides a quick transition to the new silicon.

Table 1. Zilog Product Number Identification

Z8F081Axx020xx	Z8F082Axx020xx	Z8F041Axx020xx	Z8F042Axx020xx
Z8F021Axx020xx	Z8F022Axx020xx	Z8F011Axx020xx	Z8F012Axx020xx

The affected products in [Table 1](#) are limited to the 20-pin and 28-pin packages and exclude the 8-pin package.

Both Standard Temperature (0 °C to 70 °C) and Extended Temperature (–40 °C to +105 °C) devices are affected.

The improved key features listed below apply only to the devices listed in [Table 1](#) with special lot number SL2156. Errata addressed by the improved devices are discussed later in this document.

Improved Key Features

1. VREF is now an available feature on PC2 in 20-pin parts only.
2. The Watch Dog Timer has been improved in the Z8 Encore! XP F082A Series products:
 - The default setting of the Watch Dog timer (WDT) has been changed from a maximum time-out of FFFFFFFFhex to a shorter time-out of 000400hex.
 - WDTU = 00hex, WDTL = 04hex, and WDTL = 00hex.
 - Software change: Zilog recommends that users initialize the WDT control registers WDTU, WDTL, and WDTL immediately after program execution.

Specification Changes for All Devices

The 20x Buffer stage for the Analog-to-Digital Converter is removed and is not a feature of the device any more. ADC Control/Status register 1 (ADCCTL1) BUFMODE bit setting 111 is now labelled as “Reserved.”



Errata #4 of UP006908-0705 for 20- and 28-pin devices [20x Buffer stage for the Analog-to-Digital Converter (ADC) is noisy] is now removed from the errata list.

Z8 Encore! XP F082A Series (Revision B to Revision C) Errata Fixes

The following errata for the 20- and 28-pin Z8 Encore! XP F082A Series products are fixed. Please refer to the *Errata to Z8 Encore! XP 8K and 4K Series* (UP0069).

Summary	Fix
VBO/POR Hysteresis is greater than specified in the product specification.	The Hysteresis is fixed and meets specifications.
Transimpedance of Low Power Amplifier sink current is less than specified in the product specification.	The sink current is fixed and meets specifications. The external pull-down resistor workaround can be removed.
Temperature Sensor absolute error exceeds specification.	The Temperature Sensor is fixed and meets specifications. Software Change: The Temperature Sensor does not need the recalibration workaround.
ADC differential mode calibration data stored in Info Block is incorrect.	The correct calibration data location is now specified in the product specification. No software changes are required.
Open Drain Output Control only on Port A	It is now possible to configure Port B, C, and D pins for open-drain output.
Internal Precision Oscillator (IPO) frequency out of specification over voltage and temperature	The IPO is now 5.5296 MHz $\pm 2\%$ over the supply voltage range of 2.7 V to 3.6 V and a temperature range of 0 °C to +70 °C. The IPO is now 5.5296 MHz $\pm 4\%$ over the supply voltage range of 2.7 V to 3.6 V and a temperature range of -40 °C to +105 °C.
Writes to the Timer Polarity (TPOL) bit must be done twice when the timer is not enabled	When the timer is not enabled, the TPOL bit can be written once to cause the correct timer output behavior to occur. Software change: The double write to the TPOL bit is not necessary any more. The existing double write to the TPOL bit will not cause any problems to the timer output.
20x Buffer stage for the Analog-to-Digital Converter (ADC) is noisy	Refer to Specification Changes for All Devices on page 2.



Summary	Fix
Programmable Pull-Up resistors source less than the specified current.	This is fixed and meets specifications. External pull-up resistor for workaround can be removed. No software changes are required.
PD0 will not output a strong high	This is fixed and meets specifications. No software changes are required.

Summary

This application note describes how the 20- and 28-pin Z8 Encore! XP F082A Series products have changed from the revision B to the revision C. The fixed errata are described. Using this application note allows you to migrate quickly and easily to the new revision.

References

The following documents associated with the Z8 Encore! XP F082A Series products are available on www.zilog.com

- *Z8 Encore! XP F082A Series Flash Microcontrollers Product Specification* (PS0228)
- *eZ8 CPU User Manual* (UM0128)
- *Errata to Z8 Encore XP 8K and 4K Series* (UP0069)



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

©2010 by Zilog, Inc. All rights reserved. Information in this publication concerning the devices, applications, or technology described is intended to suggest possible uses and may be superseded. ZILOG, INC. DOES NOT ASSUME LIABILITY FOR OR PROVIDE A REPRESENTATION OF ACCURACY OF THE INFORMATION, DEVICES, OR TECHNOLOGY DESCRIBED IN THIS DOCUMENT. ZILOG ALSO DOES NOT ASSUME LIABILITY FOR INTELLECTUAL PROPERTY INFRINGEMENT RELATED IN ANY MANNER TO USE OF INFORMATION, DEVICES, OR TECHNOLOGY DESCRIBED HEREIN OR OTHERWISE. The information contained within this document has been verified according to the general principles of electrical and mechanical engineering.

Z8, Z8 Encore!, and Z8 Encore! XP are registered trademarks of Zilog, Inc. All other product or service names are the property of their respective owners.