Z8 Encore! XP® Z8F0823 Series— Migrating from Revision B to Revision C

AN027002-0710

General Overview

This application note highlights the improvements and feature enhancements on Zilog's Z8 Encore! XP Z8F0823 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

Z8F0813xx005xx	Z8F0823xx005xx	Z8F0413xx005xx	Z8F0423xx005xx
Z8F0213xx005xx	Z8F0223xx005xx	Z8F0113xx005xx	Z8F0123xx005xx

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 Z8F0823 Series products:

- The default setting of the Watch Dog timer (WDT) has been changed from a maximum time-out of FFFFFFhex to a shorter time-out of 000400hex.

- WDTU = 00hex, WDTH = 04hex, and WDTL = 00hex.

- Software change: Zilog recommends that users initialize the WDT control registers WDTU, WDTH, and WDTL immediately after program execution.

Z8 Encore! XP® Z8F0823 Series—Migrating from Revision B to Revision C

z i l o g

Z8 Encore! XP Z8F0823 Series (Revision B to Revision C) Errata Fixes

The following errata for the 20- and 28-pin Z8 Encore! XP Z8F0823 Series products are fixed. Please refer to the *Errata to Z8 Encore XP Z8F0823 Series* (UP0075).

Summary	Fix
VBO/POR Hysteresis is greater than specified in the product specification.	The Hysteresis is fixed and meets specifications.
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 ºC to +70 ºC. 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 ºC to +105 ºC.
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.
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 Z8F0823 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 Z8F0823 Series products are available on www.zilog.com

- *Z8 Encore! XP Z8F0823 Series Flash Microcontrollers Product Specification* (PS0243)
- *eZ8 CPU User Manual* (UM0128)
- *Errata to Z8 Encore XP Z8F0823 Series* (UP0075)

> ⚠ **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