



UP003802-0703

Product Update

Errata to Z8E000/Z8E001 Silicon

Introduction

This Product Update lists precautions regarding the T_{OUT} and T_{XVAL} functions of the Z8E000 and Z8E001 microcontrollers.

Related Documentation

Z8E000 Product Specification (DS0036)

Z8E001 Product Specification (DS0011)

T_{OUT} Precaution

The T_{OUT} function uses the PTBOUT register bit 1 directly by XORing it on each occurrence of an interrupt. The PWM reload is not based on the resulting value.

The observed functioning can be described as: following Reset, the T_{OUT} special function is selected and the PWM is started. The timer decrements from the value in the counter. Upon the first time-out, the T_{OUT} pin flips and the Low-side reload value is loaded into the counter. The counter alternates from this point forward, depending on which reload pair it uses. If the PB1 pin is in the Low output state when the T_{OUT} special function is enabled, then the PWM is upside-down from the beginning. If it is High, then the PWM is correct.

If software modifies the PB1 output state, the pin changes states to reflect the software-driven value, even though the pin is in the T_{OUT} special function mode. If the programmer does not intentionally modify the bit and instead uses the Boolean operators on the PTBOUT register, the timer flips if the software Read-Modify-Write operation happens to fall with a timer time-out in the middle. Because the timer and the CPU are running at different divisors of the master clock, this occurrence is not uncommon. The software write-back overrides the hardware change and the T_{OUT} pin does not change state as it should have. Because there is no feedback mechanism, this lack of state change causes the PWM reload selection to be inverted from the PWM output state.

T_{XVAL} Precaution

There is a bug in the chip that causes the hardware write-back of the timers to corrupt the software Write into the count value registers. The timer value registers should not be written by software unless the timer is stopped. Otherwise, the timer will not time-out during the instruction



Information Integrity

The information contained within this document has been verified according to the general principles of electrical and mechanical engineering. Any applicable source code illustrated in the document was either written by an authorized ZiLOG employee or licensed consultant. Permission to use these codes in any form besides the intended application, must be approved through a license agreement between both parties. ZiLOG will not be responsible for any code(s) used beyond the intended application. Contact your local ZiLOG Sales Office to obtain necessary license agreements.

Document Disclaimer

ZiLOG is a registered trademark of ZiLOG Inc. in the United States and in other countries. All other products and/or service names mentioned herein may be trademarks of the companies with which they are associated.

©2003 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. Except with the express written approval of ZiLOG, use of information, devices, or technology as critical components of life support systems is not authorized. No licenses are conveyed, implicitly or otherwise, by this document under any intellectual property rights.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [8-bit Microcontrollers - MCU category](#):

Click to view products by [ZiLOG manufacturer](#):

Other Similar products are found below :

[CY8C20524-12PVXIT](#) [MB95F013KPMC-G-SNE2](#) [MB95F263KPF-G-SNE2](#) [MB95F264KPFT-G-SNE2](#) [MB95F398KPMC-G-SNE2](#)
[MB95F478KPMC2-G-SNE2](#) [MB95F564KPF-G-SNE2](#) [MB95F636KWQN-G-SNE1](#) [MB95F696KPMC-G-SNE2](#) [MB95F698KPMC2-G-SNE2](#)
[MB95F698KPMC-G-SNE2](#) [MB95F818KPMC1-G-SNE2](#) [901015X](#) [CY8C3MFIDOCK-125](#) [403708R](#) [MB95F354EPF-G-SNE2](#)
[MB95F564KWQN-G-SNE1](#) [MB95F636KP-G-SH-SNE2](#) [MB95F694KPMC-G-SNE2](#) [MB95F778JPMC1-G-SNE2](#) [MB95F818KPMC-G-SNE2](#)
[LC87F0G08AUJA-AH](#) [CP8361BT](#) [CG8421AF](#) [MB95F202KPF-G-SNE2](#) [DF36014FPV](#) [5962-8768407MUA](#) [MB95F318EPMC-G-SNE2](#)
[MB94F601APMC1-GSE1](#) [MB95F656EPF-G-SNE2](#) [LC78615E-01US-H](#) [LC87F5WC8AVU-QIP-H](#) [MB95F108AJSPMC-G-JNE1](#) [73S1210F-](#)
[68M/F/PJ](#) [MB89F538-101PMC-GE1](#) [LC87F7DC8AVU-QIP-H](#) [MB95F876KPMC-G-SNE2](#) [MB88386PMC-GS-BNDE1](#) [LC87FBK08AU-](#)
[SSOP-H](#) [LC87F2C64AU-QFP-H](#) [MB95F636KNWQN-G-118-SNE1](#) [MB95F136NBSTPFV-GS-N2E1](#) [LC87F5NC8AVU-QIP-E](#)
[LC87F76C8AU-TQFP-E](#) [LC87F2G08AU-SSOP-E](#) [CP8085AT](#) [MB95F564KPF-G-UNE2](#) [MC9S08PA4VWJ](#) [MC9S08QG8CDTE](#)
[MC9S08SH4CWJR](#)