



***Comparison Between Z02202 and Z02201  
Modem Data Pumps***

### **ABSTRACT**

This application note gives a comparison between Z02202 (Ver. 0x50) and Z02201 (Ver. 0x48) Modem Data Pumps.

### **INTRODUCTION**

The Z02202 is a synchronous single-chip modem solution that provides a means to construct a V.22bis modem capable of 2400 bps full-duplex over dial-up lines. The Z02202 is specifically designed for use in embedded modem applications where space, performance, and low power consumption are key requirements.

All modulation, demodulation, filtering, A/D, and D/A conversion functions for transmit and receive are provided on-chip. All digital I/O signals are TTL-compatible. The parallel interface is compatible with standard 8-bit microprocessors, allowing direct access to eight I/O registers and in-direct access to the modem RAM.

The RAM access capability allows the Host to retrieve diagnostic data, modem/line status and control data, and set programmable coefficients. The serial interface is used for data transfers. All control and status information is transferred by means of the parallel interface.

The Z02202 transmit drivers and receive amplifiers can be connected directly to a Data Access Arrangement (DAA) by means of a transformer. Completing this connection reduces the external circuits to a minimum.

In addition, the Z02202 offers further system-level savings by providing built-in filters for both the Transmitter Analog Output and the Receiver Analog Input, eliminating the need for external filtering components.

The Analog Front End of the Z02202 includes an Active Hybrid circuit that improves modem performance and reduces system-level costs by reducing the need for external components.

The Z02202 device operates on a single +5 VDC power supply. During periods of no traffic, the host can place the modem into SLEEP mode, reducing power consumption to less than 1 percent of full load power.

**New Features of Z02202 from Z02201**

<b>Feature</b>	<b>Benefit</b>
Software Selectable Active Hybrid	Improves modem performance and reduces system-level costs by reducing the need for external components
Extended Temperature Range Support (-40°C to +85°C)	Allows the device to be used in industrial and severe weather related applications.
10KW ROM, instead of 8KW ROM	Allows additional modes such as Bell 202, Bell 202T

**Software additions to Z02202 over Z02201**

<b>Feature</b>	<b>Benefit</b>
Added RAM location SubVersion (address 0x1)	
Added RAM location DpChipConfig (address 0x0)	Allows the internal active hybrid, serial clock, and eye pattern generator clock, to be enabled or disabled.
Added RAM location Config.MODE = 0x6 (initialize)	For use with location DpChipConfig.
Added Bell 202 data modes (RAM location Config.MODE = 0x15 or 0x16).	
Added RAM location DpCtrl.MODEXTEND	This feature supports 4-wire V.23 and Bell 202 operation.
Data pump performs a reset when waking up from sleep mode.	
Improved FSK modes	This leads to better handshake connectivity and reliability

**CONCLUSION**

Z02202 is an enhanced version of the Z02201 device. It is pin-compatible with Z02201, both in pin-function and position.

---

***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***

©1999 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.