

	<b>Application Note</b>
	Product: Domino 2
I <sup>2</sup> C Bus Error Checking	Date: 6/7/00
<p><b>Introduction:</b> The I<sup>2</sup>C Domino Utility routine has a feature that can check to see if the I<sup>2</sup>C bus is communicating properly. If it isn't, the I<sup>2</sup>C bus can be reset to restore proper communications.</p>	
<p><b>Background:</b> The use of I<sup>2</sup>C devices make expansion of the Domino very simple to accomplish. Such devices include the Domino 2 I/O coprocessor, expansion data E<sup>2</sup>PROM and I<sup>2</sup>C I/O expanders. This application note demonstrates how to reset the I<sup>2</sup>C bus should the users code inadvertently cause it to lock up.</p>	
<p><b>How it works:</b> The program listing below contains subroutines to read and write to the I<sup>2</sup>C I/O coprocessor of the Domino 2. Whether the user is reading from the coprocessor or writing to the coprocessor the POP command needs to be used or the argument stack can eventually run out of bounds. So why not take advantage of the information popped off of the argument stack and use it to check for errors. If the variable the information is popped into is greater than 255 then an I<sup>2</sup>C communications error has occurred. The program listing demonstrates how to bring communications back by setting P1.6 and P1.7 high. That is all it takes to reset the I<sup>2</sup>C bus. One way the I<sup>2</sup>C bus can lock up is if P1.6 or P1.7 are accidentally left unmasked while writing to port 1 of the Domino.</p>	
<p><b>Program Listing:</b></p> <pre> 10000 REM ***** 10010 REM Coprocessor Read Routine 10020 REM R= Register of the coprocessor 10030 PUSH 2000H + R 10040 CALL 0F12Ch 10050 POP DT 10060 IF DT&gt;255 THEN GOSUB 11100 10070 RETURN 10080 REM 10997 REM ***** 10998 REM Coprocessor Write Routine 10999 REM R= Register of the coprocessor, DT= The data to write to the register 11000 PUSH 2000H+R,DT 11010 CALL 0F128H 11020 POP DT 11030 IF DT&gt;255 THEN GOSUB 11100 11040 RETURN 11050 REM 11060 REM ***** 11070 REM I2C BUS Reset Subroutine. 11080 REM Set P1.6 and P1.7 high masking the rest of the port, 11090 REM so the other bits will not be affected. 11100 PORT1 = PORT1 .OR. 0C0H 11110 RETURN 11120 REM ***** </pre>	