

# BARE-BOARD TEST SUITE FOR THE MPC8360

## PRODUCT DESCRIPTION

This test suite assist the user in bringing up MPC83xx-based boards (MPC8360 and MPC8321/3 boards). The suite is a stand-alone program that tests major functionality of the board, enabling the user to validate whether hardware-related functionality and interfaces operate correctly.

## PRODUCTS FEATURES

- Tests all communications links and protocols (DUART, I2C, SPI, UCC)
- Performs an extremely fast DDR2 stress test
- Tests Flash access/erase/program
- Individual tests may be enabled/disabled by the user
- Test interface via simple RS232 to enable in-field execution

## TESTS PERFORMED

### 1. DDR

This test floods the memory with random, well-distributed data. Data is written and read back-to-back, and checked for a match. This measures memory functionality under stress.

### 2. FLASH

This test checks all boot-flash features (read, write, CFI, erase, and program).



### 3. UCC UART

In some applications customers prefer to implement their UART on the UCC instead of on (or in addition to) the DUART. This option offers many advantages and allows the UART to operate at a much higher bit rate (several MHz).

This test configures the selected UCC to UART mode and performs two loopback tests: one internal and one external. In the external test, the user is asked to close and open the external Tx/Rx connection. Unless the device is malfunctioning, the internal loopback test must always pass.

### 4. DUART

This test checks the DUART for performance in internal and external loopback.

### 5. ETHERNET

This test is based on running internal and external loopback. A more sophisticated test (response to ping) is available on request. The current release supports UCC1 and UCC2 only at the rate of 100 Mbps (Fast Ethernet). A test for Gigabit Ethernet (GBE) is also available upon request. Since external loopback is involved, this test also checks the PHY operation.

### 6. I<sup>2</sup>C

The MPC8360 contains two I<sup>2</sup>C ports. One can be used to boot configuration word holders or for the boot sequencer (or both). If I<sup>2</sup>C is used on the board, this test may become essential to provide the configuration words.

### 7. DISCRETE I/O

The test offers a discrete I/O read/write test. The user needs to liaise with DoGav Systems and specify which I/O ports are used, their directions, and the display format (per port, grouped etc.), so that the test program can be customized to the specific user implementation.





### **ABOUT DOGAV SYSTEMS**

DoGav Systems is a leading provider of software and hardware consultancy and training services. It specializes in Freescale's processors, in particular the PowerQUICC family of communication processors. It has a proven track record of over 20 years supporting Freescale customers in developing market-leading products for the communications equipment market.

DoGav Systems is Freescale's most experienced and active microcode developer. Since receiving its license in 2000, it has developed numerous customized microcode packages for both small and large Freescale customers. These packages are now successfully deployed in commercial products. In addition, DoGav Systems also offers more than 30 off-the-shelf microcode products for the PowerQUICC I, PowerQUICC II, PowerQUICC III and PowerQUICC II Pro processors.

