

## 1 SD Host Benchmarking Report

---

This report is intended to provide a standardized template for verifying and benchmarking SD / MMC functionality on the Altera NIOS platform running the uClinux distribution.

## 2 System Configuration

---

<b>Test Setup</b>	
Date	3/8/09
Hardware Platform	FPS-Tech Custom Test Platform
CPU / MEM Configuration	100MHz CPU / 200MHz DDR2, 64 MB
FPGA Project	Fps_test_sd
<b>SD Controller</b>	
Type	FPS-Tech SD/SDIO/MMC Host
Version	1.1
PHY Interface Mode / Speed	25 MHz / 4-bit
<b>Linux Kernel / Driver</b>	
Kernel Version	FPS-Stable 2.6.28
Repository Identification	fps-stable-2.6.28
Driver Version	-
Driver Repository Identification	-
Driver Configuration	No bounce buffer
<b>SD Card</b>	
Brand	Ultra Secure Digital Card
Size	1 GB
Markings	-

### 3 Performance Tests

---

Performance tests are conducted using a modified version of the 'Bonnie' benchmarking utility (<http://www.textuality.com/bonnie/>). The utility is modified such that child processes are not invoked since uClinux on the NIOS II is not a multi-threaded environment. The test is run three times, each with small, medium and large file sizes. All of the file sizes should be larger than available memory to avoid results being skewed by page-caching.

#### 3.1 Medium File

---

<b>Test Configuration</b>	
File Size	100 MB
<b>Write Stats</b>	
Block Output	2.6 MB/sec
Driver Interrupts	126,000
XFER_LEN / BUSY_LEN / BUS_LEN	17/8/0
<b>Read Stats</b>	
Block Input	3.74 MB/sec
Driver Interrupts	58,000
XFER_LEN / BUSY_LEN / BUS_LEN	15/6/0

#### 3.2 Large File

---

<b>Test Configuration</b>	
File Size	750 MB
<b>Write Stats</b>	
Block Output	2.5 MB/sec
Driver Interrupts	977,500
XFER_LEN / BUSY_LEN / BUS_LEN	136/63/7
<b>Read Stats</b>	
Block Input	3.94 MB/sec
Driver Interrupts	390,600
XFER_LEN / BUSY_LEN / BUS_LEN	110/45/0