

PERFORMANCE BENCHMARKING RESULTS FOR ADNACO PRODUCTS

1. PCIe Products

The Altera PCI Express High Performance Reference Design was used for testing. Detailed information on the FPGA design and test software is provided in Altera's AN456. The Stratix IV GX FPGA was configured for PCI Express hard IP Gen2 x4 operation at a 5.0 GT/s line rate. All performance results shown below were measured under these conditions.

Table 1 Adnaco-S5

Length	Cable Type	Transceivers	Device to Host	Host to Device	Notes
50 m	x4 50/125 MM	MM	1,593 Mbytes/s	1,447 Mbytes/s	1, 3, 5
100 m	x4 50/125 MM	MM	1,581 Mbytes/s	1,358 Mbytes/s	1, 3, 5
250 m	x4 9/125 SM	SM	1,419 Mbytes/s	1,080 Mbytes/s	2, 4, 5
500 m	x4 9/125 SM	SM	759 Mbytes/s	591 Mbytes/s	2, 4, 5

Table 2 Adnaco-S1B

Length	Cable Type	Transceivers	Device to Host	Host to Device	Notes
10 m	50/125 MM	MM	412 Mbytes/s	405 Mbytes/s	1, 3, 5
50 m	50/125 MM	MM	412 Mbytes/s	404 Mbytes/s	1, 3, 5
100 m	50/125 MM	MM	411 Mbytes/s	402 Mbytes/s	1, 3, 5
250 m	9/125 SM	SM	409 Mbytes/s	397 Mbytes/s	2, 4, 5
500 m	9/125 SM	SM	405 Mbytes/s	390 Mbytes/s	2, 4, 5
750 m	9/125 SM	SM	401 Mbytes/s	380 Mbytes/s	2, 4, 5
1 km	9/125 SM	SM	394 Mbytes/s	290 Mbytes/s	2, 4, 5
4 km	9/125 SM	SM	95 Mbytes/s	77 Mbytes/s	2, 4, 5
8 km	9/125 SM	SM	48 Mbytes/s	39 Mbytes/s	2, 4, 5

Table 3 Adnaco-S1A

Length	Cable Type	Transceivers	Device to Host	Host to Device	Notes
10 m	50/125 MM	MM	412 Mbytes/s	405 Mbytes/s	1, 2, 5
50 m	50/125 MM	MM	412 Mbytes/s	404 Mbytes/s	1, 2, 5
100 m	50/125 MM	MM	411 Mbytes/s	402 Mbytes/s	1, 2, 5
250 m	9/125 SM	SM	408 Mbytes/s	213 Mbytes/s	1, 4, 5

Notes:

1. [Test computer 1](#)
2. [Test computer 2](#)
3. Standard system configuration
4. Long range system configuration - contact factory for more detail
5. MM – multi-mode, SM – single-mode

1.1 Test Equipment

1.1.1 FPGA board

Altera Stratix IV GX FPGA Development Kit, P/N DK-DEV-4SGX230N, PCI Express hard IP Gen2 x4

1.1.2 Test computer 1 information:

Motherboard: Asus P8H67-M LE

CPU: Intel i5-2500 @ 3.30GHz

Chipset: Intel H67

Memory: 2 GB

OS: Windows XP SP3

1.1.3 Test computer 2 information:

Motherboard: Intel DZ68DB

CPU: Intel i3-2100 @ 3.10GHz

Chipset: Intel Z68

Memory: 3 GB

OS: Windows XP SP3

2. Adnaco R1USB30B product

Device-to-Host Bulk Transfer Rates

Table 1 Adnaco-S3B

Length	Cable Type	Transceivers	Transfer Rate
10 m	50/125 Multi-mode	Multi-mode	330.6 Mbits/s
50 m	50/125 Multi-mode	Multi-mode	327.9 Mbits/s
100 m	50/125 Multi-mode	Multi-mode	322.7 Mbits/s
150 m	50/125 Multi-mode	Multi-mode	316.7 Mbits/s
200 m	50/125 Multi-mode	Multi-mode	314.7 Mbits/s
250 m	50/125 Multi-mode	Multi-mode	279.50 Mbits/s
300 m	50/125 Multi-mode	Multi-mode	178.70 Mbits/s
400 m	50/125 Multi-mode	Multi-mode	161.9 Mbits/s
500 m	50/125 Multi-mode	Multi-mode	150.6 Mbits/s
750 m	9/125 Single-mode	Single-mode	112.1 Mbits/s
1,000 m	9/125 Single-mode	Single-mode	99.6 Mbits/s
1,500 m	9/125 Single-mode	Single-mode	65.7 Mbits/s
2,000 m	9/125 Single-mode	Single-mode	21.0 Mbits/s

1.2 Test Equipment

1.2.1 FPGA board

Cypress/Nuvation FX3 Evaluation Platform – BeUSB 3.0.

1.2.2 Test computer information

Motherboard: Gigabyte GA-Z170MX-Gaming5

CPU: Intel i3-6100 @ 3.70GHz

Chipset: Intel Z170

Memory: 8 GB

OS: Windows 7

Figure 2-1 Adnaco-R1USB30B Test Screenshot

