

## Technical Note Benchmark PCIe Bus for use with 3-tap Neo/Zyla Neon/ Karbon Cards

Some PC motherboards will have multiple PCIe slots fitted for a x4 slot, as required with the 3-tap Neon card, (or x16 slot as required for Karbon 10-tap card) but may be internally wired as less (eg x1). When selecting the PCIe slot to use with the Bitflow PCIe framegrabber cards, refer to the PC manual to ensure the best suited slot is used. ie. a x4 slot wired as x4 or x16 slot wired as x16

As part of the installation of the Bitflow frame grabber card for Andor 3-tap and 10-tap sCMOS cameras, CiBench is an application tool that can be used to assess the bandwidth for the PCIe slot being used. Below is an outline on how this application can be used.

Open SysReg from Windows desktop: Start >> Bitflow >> SDK5.6 >> SysReg

The Neon CLB will be displayed in the dialogue window, Select 'Configure'

🖌 SysReg	
Boards installed:	R64 (0) - NEO-PCE-CLB
Board operation:	Configure
Other bus mastering devices:	Program their latency
Latency to program:	
Camera configuration file path:	C:\BitFlow SDK 5.60\Config
Change path:	Browse
	Cancel OK



Board type (model):	R64 (0) - NEO-PCE-CLB
Board ID register:	3
Board DMA latency:	255
Attached cameras:	
Camera file operation:	Add Change Remove Recent

A separate dialogue box will appear. Select 'Add' to load the Andor camera file

Select the relevant Andor camera file and press OK

1	Navigate tree to select camera file name (at the deepest level of tree)
٦	Tree = Make - Model - Mode - File Name
	<ul> <li>Make: ANDOR</li> <li>Model: SPECIAL</li> <li>Model: Neo sCMOS</li> <li>Mode: 10 tap, 8 bit, 24080 x 1080, 2x DMA engine, Free run</li> <li>Mode: 3 tap, 8 bits, 24000 x 2400 Free running</li> <li>Andor-3T ap-E1-FreeRun.r64</li> <li>Model: CL Base Camera</li> <li>Make: Generic</li> </ul>
	Cancel OK



Exit the SysReg windows by pressing OK.

Board Details	×
Board type (model):	R64 (0) · NEO-PCE-CLB
Board ID register:	3
Board DMA latency:	255
Attached cameras:	Andor-3Tap-E1-FreeRun.r64
Camera file operation:	Add Change Remove Recent ->
	Cancel

Open the CiBench application from Windows desktop: Start >> Bitflow >> SDK5.6 >> CiBench

(If prompted) Select 'Open Initialised' for the Neon card

Open which board?		x		
Board list:	R64 (0) - NEO-PCE-CLD, VFG0, CL1, Master			
	Cancel Open Initialized			



Select 'Go' and run for about 5 minutes.

CiBench			CiBench			×
Minimum:	Stopped			Minimum:	0.111 (MB/S)	
Average:	Stopped			Average:	435.070 (MB/S)	
Maximum:	Stopped			Maximum:	435.624 (MB/S)	
Running average:	Stopped			Running average:	160.478 (MB/S)	
Test time (sec):	0			Test time (sec):	300	
Frame size (bytes):	57600000			Frame size (bytes):	57600000	
	Go Close	•			Go	Close

The Neon 3-tap card requires 255MB/s bandwidth and the Karbon 10-tap card requires 800MB/s to operate reliably. If this is not the case, try a different PCIe slot that meets the required specification and run the application again.