



# MOSAIC RECOMMENDED CONNECTIONS

DA-06880-001\_v02 | January 2014

**Application Note**



## DOCUMENT CHANGE HISTORY

DA-06880-001\_v02

Version	Date	Authors	Description of Change
01	June 14, 2013	AP, SM	Initial Release
02	January 6, 2014	AP, SM	Updated numbered display order in Figure 6

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# MOSAIC GRID LAYOUT

The NVIDIA® Mosaic technology layouts are built on a grid of display devices with a defined number of rows and columns. No matter the topology the display numbering starts with 0 and maps into the grid starting at the top left display, filling out the first row and then moving down the rows. As an example, a 15 display Mosaic in a 3 rows by 5 column configuration would enumerate like this:



Figure 1. 15 Display Mosaic Configuration

# GPU AND CONNECTOR NUMBERING

## GPU CONNECTOR NUMBERING

The graphics processing unit (GPU) port numbering on NVIDIA Quadro® and NVIDIA NVS™ boards start at the bottom left of the board, goes up the column of connectors and then over to the other column if there is one.

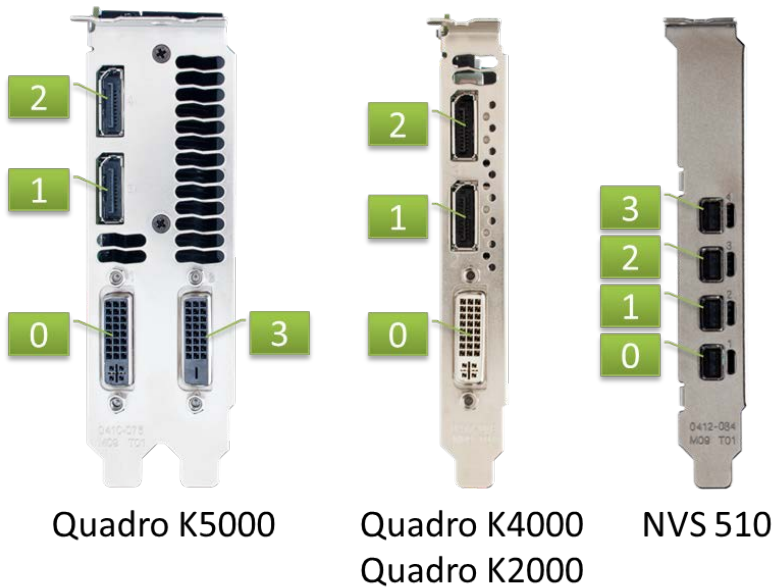


Figure 2. GPU Connector Numbering



Note: The display numbering is not always the same as the numbers stamped on the bracket.

## GPU NUMBERING

The ordering of multiple GPUs in the system is determined by the workstation they are placed in. The system BIOS controls the enumeration order, so it will vary between workstation vendors. In general GPUs are enumerated starting with PCI slot with the smallest PCI Express number. The user manual or label on the workstation chassis will include a PCI Express slot map.

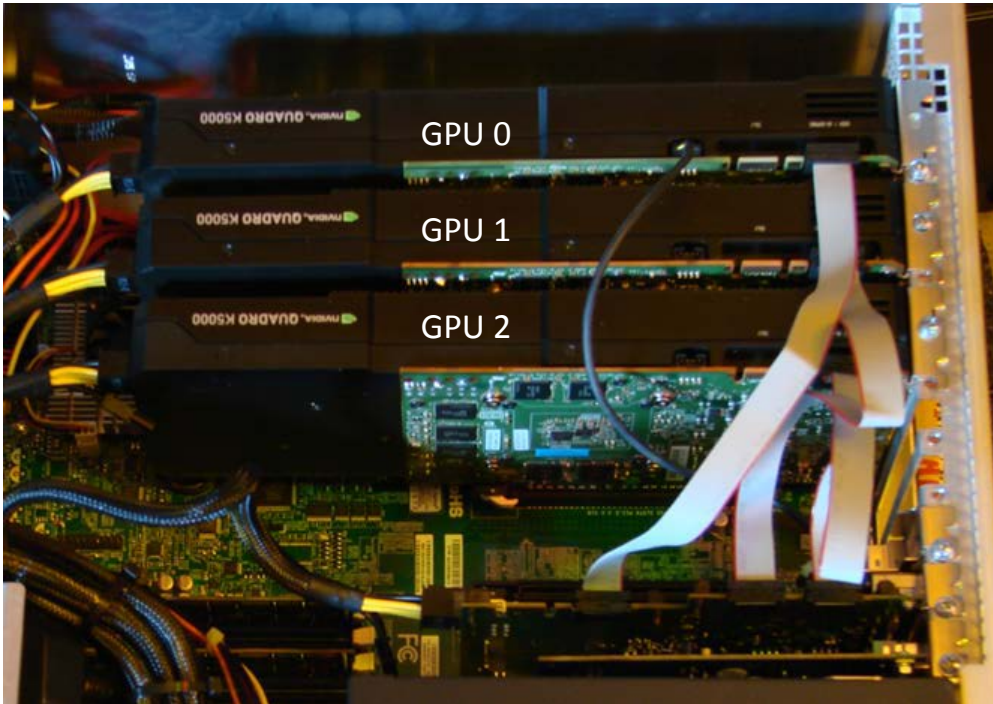


Figure 3. GPU Numbering

The `configureMosaic` utility can be used to identify the GPUs. Download, and save it, from <http://www.nvidia.com/object/mosaic-utility>.

Connect one display to each GPU. Open a command prompt and run the following commands. The display that is illuminated will be connected to the GPU requested:

```
GPU 0: configureMosaic set rows=1 cols=1 out=0,0
GPU 1: configureMosaic set rows=1 cols=1 out=1,0
GPU 2: configureMosaic set rows=1 cols=1 out=2,0
GPU 3: configureMosaic set rows=1 cols=1 out=3,0
```

# CONNECTING DISPLAYS TO GPUS

When connecting the displays, start with the top left display in the Mosaic grid. Connect it to the bottom left display connector (Connector 0) on the first GPU (GPU 0). Move down the row in the Mosaic filling the displays in GPU 0 before moving to the next GPU. In the following figures the numbering is GPU:DisplayConnector:

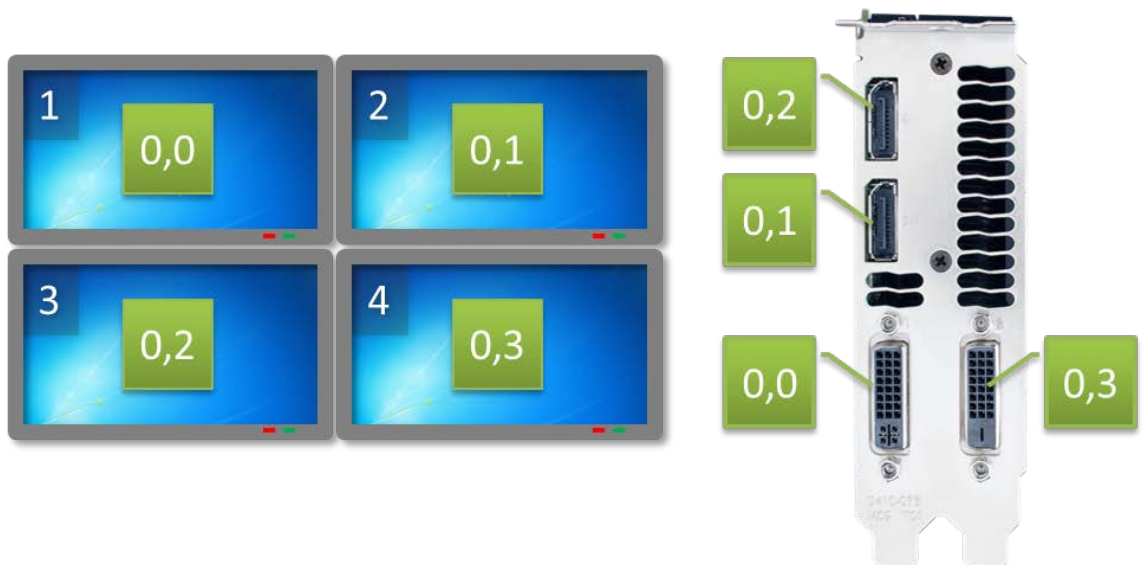


Figure 4. 2 x 2 Mosaic with a Quadro K5000



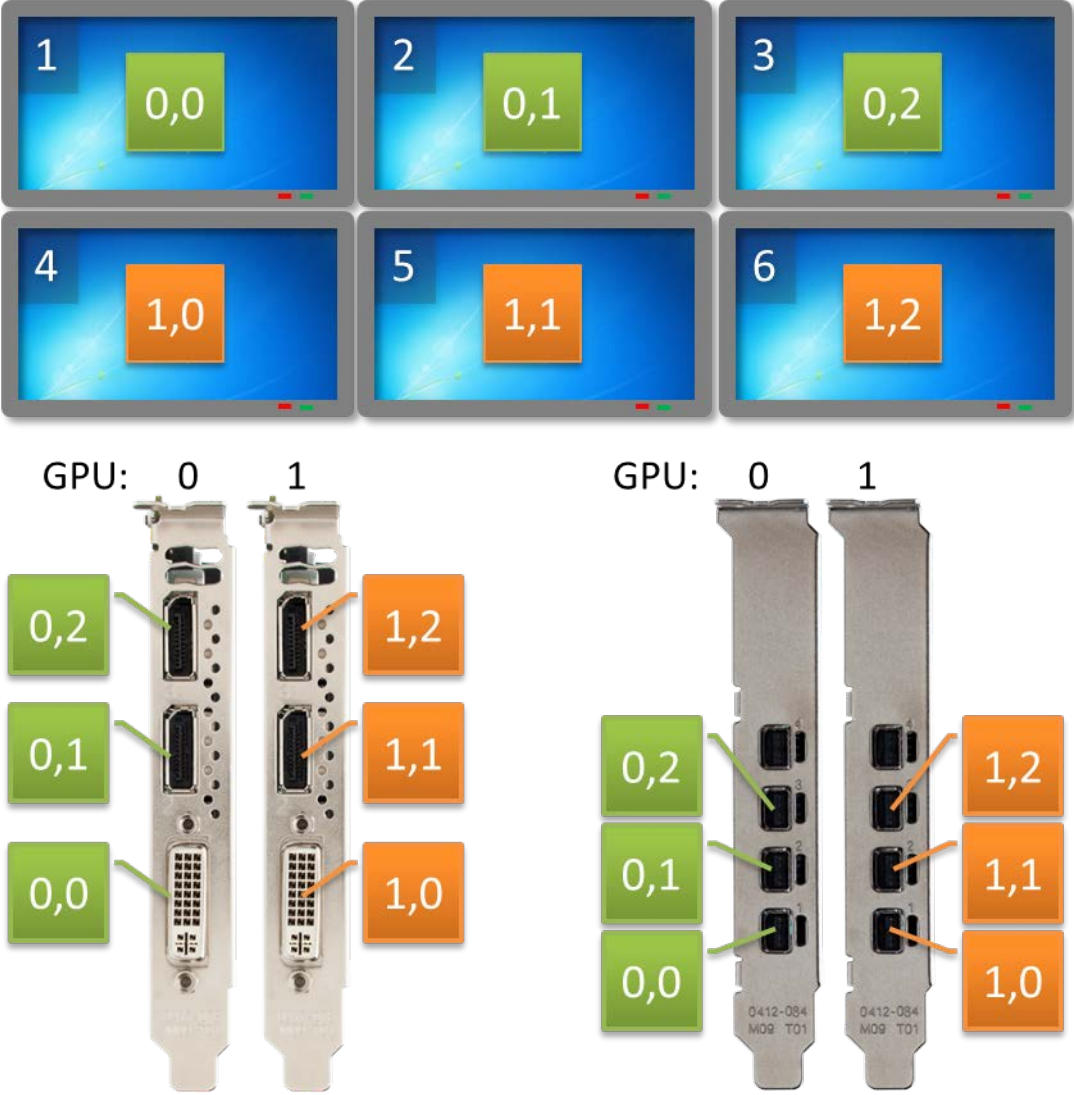


Figure 5. 2 x 3 Display Mosaic with 2 Quadro K4000 or NVS 510



Figure 6. 3 x 4 Mosaic with 3 Quadro K5000

**Note:** Mosaic with more than 8 displays is available only on Quadro boards which support the Quadro Sync board.

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