# Bilinear interpolation

## Abstract

The unit calculates the mean average of 4 given gray-scale values.

**Note: X represents row indexes, Y represents column indexes.**

## Inputs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **description** | **type** | **size** | **Recived from** |
| Pix\_1\_in | Value of 1st requested pixel | Std\_logic\_vector | 16/8? | Local\_register/SDRAM? |
| Pix\_1\_in | Value of 2nd requested pixel | Std\_logic\_vector | 16/8? | Local\_register/SDRAM? |
| Pix\_1\_in | Value of 3rd requested pixel | Std\_logic\_vector | 16/8? | Local\_register/SDRAM? |
| Pix\_1\_in | Value of 4th requested pixel | Std\_logic\_vector | 16/8? | Local\_register/SDRAM? |
| delta\_row\_out | Holds the delta of row, for bilinear-interpolation | Std\_logic\_vector | 7 (trig\_frac\_size\_g-1 downto 0) | Addr\_calc |
| delta\_col\_out | Holds the delta of col, for bilinear-interpolation | Std\_logic\_vector | 7 (trig\_frac\_size\_g-1 downto 0) | Addr\_calc |
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## Outputs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **description** | **type** | **size** | **Destination** |
| Pixel\_res | Gray scale value for output image | Std\_logic | 16/8? | ? |
| Pixel\_valid |  |  |  |  |
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