

Virtual memory-2-memory Scaler

This is the data sheet for a QEMU based Virtual memory-2-memory scaler. The scaler can perform upscaling as well as downscaling. No ratios need to be supplied instead the actual input and output sizes are supplied. The scaler only supports BGR image format and both input and output must be in this format.

Register Map

Offset 0x00 - Input Configuration 1

Bits	Description
0:15	Input Width
16:31	Input Height

Offset 0x04 - Input Configuration 2

Bits	Description
0:15	Input Stride (in bytes)
16:31	Reserved

Offset 0x08 – Output Configuration 1

Bits	Description
0:15	Output Width
16:31	Output Height

Offset 0x0C - Output Configuration 2

Bits	Description
0:15	Output Stride (in bytes)
16:31	Reserved

Offset 0x10 – Input Buffer DMA Address

Bits	Description
0:31	Input Buffer DMA Address

Offset 0x14 – Output Buffer DMA Address

Bits	Description
0:31	Output Buffer DMA Address

Offset 0x18 – Control and Status

Bits	Description
0	Start processing
1	Enable Interrupts
2	Reset
3:4	Status 0: idle 1: processing 2: done 3: done but has error

Programming Model

1. Program input width and height register 0x0
2. Program input stride register 0x4
3. Program output width and height register 0x8
4. Program output stride register 0xc
5. Program input buffer DMA address register 0x10
6. Program output buffer DMA address register 0x14
7. Write the start bit (bit 0) of register 0x18
8. Either poll status or wait for interrupt (if interrupt enabled 0x14:1)
9. Discard output frame if error status bits