

Listing 2—DECDATA modules for importing data into a C model

Module Definition

```
module decdata(image_din_valid, image_din, hw_rstb, sys_clk);  
  
output[31:0] image_din;  
  
input image_din_valid,  
       hw_rstb,  
       sys_clk;  
  
reg[11:0] address;  
reg [31:0] mem [4000:0];  
  
always @ (posedge sys_clk)  
  
if (~hw_rstb)          address <= 12'h000;  
else if (image_din_valid) address <= address + 1;  
else                  address <= address;  
  
wire[31:0] image_din = mem[address];  
  
endmodule
```

Loading the memory from a data file

```
initial  
begin  
    $readmemh ("test.data", decdata.mem);  
end
```