```
--              The Guts
begin
 mux1(7 downto 0) <= 255 when load
     else "0" & control(7 downto 1);
 l1: latch port map (
                 mux1, control, clock);

 mux2 <= 0 when load else
   carry_out & adder_out(7 downto 1);
 l2: latch port map (
   mux2, accum(15 downto 8), clock);

 mux3 <= input2 when load else
   adder_out(0) & accum(7 downto 1);
 l3: latch port map (
   mux3, accum(7 downto 0), clock);

 mux4 <= input1 when accum(0) else 0;
 l4: add port map (
     mux4, accum(15 downto 8), "0",
     adder_out, carry_out);

 output_valid <= not(control(0));
 product <= accum when output_valid
            else 0;
end mult;
```