Claims

1. A method of selectably transposing data accessed in a register, comprising the actions of:

storing data in four memory segments, each having four data lanes at the output thereof, wherein each said data lane carries 8 bits of data; and

selectably connecting each of four data bus segments to a respective one of sixteen data lanes by selecting four multiplexers activated of a total of thirty-four multiplexers, based on whether said desired data transposition is bytewise transposition or wordwise transposition;

whereby a desired data transposition is provided at the time of register access without register-to-register transfers,

wherein the multiplexers are arranged so that bytewise transposition and wordwise transposition are performed.

CLAIMS

What is claimed is:

1. A method of selectably transposing data accessed in a register, comprising the actions of:

storing data in n memory segments, each having n data lanes at the output thereof; and

selectably connecting each of n data bus segments to a respective one of said n^2 data lanes;

whereby a desired data transposition is provided at the time of register access without register-to-register transfers.

2. The method of Claim 1, wherein each said data lane carries 8 bits of data.

3. The method of Claim 1, wherein said selectably connecting step is performed by activating only n of a total of n^2 multiplexers.

4. The method of Claim 1, wherein n=4.

5. A method of viewing data within a register file, comprising the steps of:

enabling a transpose function with respect to a selected register; and

modifying a view of the selected register, as seen by an external access, such that data in the selected register is replaced with data from a plurality of consecutive registers.

6. The method of Claim 5, wherein said modifying step effectively rotates the apparent orientation of data in said selected register.

7. The method of Claim 5, wherein said modifying step effectively applies bytewise transposition to said view.

8. The method of Claim 5, wherein said modifying step effectively applies wordwise transposition to said view.

9. A method of viewing data within a register file, comprising the steps of:

identifying a first source byte in a register;

copying data from the first source byte into a first destination byte of the register;

identifying a second source byte in the register; and

copying data from the second source byte into a second destination byte of the register.

10. An electronic system, comprising:

a logic unit; and

at least one I/O register, comprising

multiple memory segments each holding a respective fraction of a data set, said data set being distributed across said segments in a consistent pattern, and each said memory segment providing multiple lanes of data path; and

multiple multiplexers, each connected to connect a respective output bus segment to a respective data path of a respective one of said memory segments.