Comparison Table for data Transfer times

memmove

Bytes	Library version (usec)		Non DMA (usec)		Non DMA -O3 (usec)		DMA (usec)
	frdm	BBB	frdm	BBB	frdm	BBB	frdm
10	<1	<1	131	<1	30	<1	126
100	134	<1	806	<1	133	<1	125
1000	1336	<1	7557	<1	1162	<1	119
5000	6670	<1	37564	<1	5733	<1	113

memset

Bytes	Library version		Non DMA		Non DMA -O3		DMA
	frdm	BBB	frdm	BBB	frdm	BBB	frdm
10	<1	<1	25	<1	5	<1	106
100	<1	<1	330	<1	44	<1	105
1000	<1	<1	3338	<1	429	<1	103
5000	<1	<1	4120	<1	860	<1	106

Observations:

The Time difference observed in BBB is always 0 (accuracy of 1 us). This would mean that for transfer of 5k bytes, time taken is less than 1 us, or the processor frequency is greater than 5 ghz. Even after considering a 4 byte wide bus, frequency is still > 1 GHZ. But BBB has a frequency of 1 ghz. The only explanation possible is that even after all the optimization switched off, the compiler is doing optimization in the data move.

Time Taken by DMA for 5k or 10 bytes is approx same. Thus DMA is suitable for transferring Large amounts of data.

With -O3, the transfer times get reduced many times over(almost 5 to 10).

The Library version, even at 0 optimization, is almost as fast as my code at O3.

Thus Library version is suitable for small transfers, while DMA is suitable for large transfers, especially when the data is continuous.

Diagram For Logger