ONFI Technical Errata

Errata ID	**012**
Affected Spec Ver.	**ONFI 1.0, 2.0 and 2.1**
Corrected Spec Ver.	

Submission info

Name	Company	Date
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For multi-LUN operations, this erratum clarifies when another LUN may be selected in the course of a Program operation. Another LUN should not be selected until all data is input for the Program, including to multiple interleaved addresses.

Description of the specification technical flaw

Modify section 3.1.3 as shown:

3.1.3 Multiple LUN Operation Restrictions

LUNs are independent entities. A multiple LUN operation is one in which two or more LUNs are simultaneously processing commands. This implies that R/B# is cleared to zero when the subsequent LUN operation is issued.

When a Page Program command (80h) is issued on any LUN that is not preceded by an 11h command, all idle LUNs may clear their page registers. Thus, the host should not begin a Page Program command on a LUN while a Read Page operation is either ongoing on another LUN or has completed but the data has not been read from another LUN, as the contents of the page register for the Read operation will be lost. A Read Page can be issued to one LUN while a Page Program is ongoing within a second LUN without any restriction.

When issuing a Page Program command (80h), the host should not select another LUN until after all data has been input and a 10h or 15h command has been issued. In the case of interleaving, all data input for all interleaved addresses should be completed prior to selecting another LUN.

When issuing Reads to multiple LUNs, the host shall take steps to avoid issues due to column address corruption. Specifically, if the column addresses in Reads issued to multiple LUNs are different, then the host shall issue a Change Read Column before starting to read out data from a newly selected LUN. If the column addresses are the same, then no Change Read Column is necessary.

If a multiple LUN operation has been issued, then the next status command issued shall be Read Status Enhanced. Read Status Enhanced causes LUNs that are not selected to turn off their output buffers. This ensures that only the LUN selected by the Read Status Enhanced command responds to a subsequent data output cycle. After a Read Status Enhanced command has been completed, the Read Status command may be used until the next multiple LUN operation is issued.

When the host has issued Read Page commands to multiple LUNs at the same time, the host shall issue Read Status Enhanced before reading data from either LUN. This ensures that only the LUN selected by the Read Status Enhanced command responds to a data output cycle after being put in data output mode with a 00h command, and thus avoiding bus contention.

Disposition log

8/24/2009	Erratum captured.
10/20/2009	Erratum ratified.

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