

Product Change Notification Form

PCN #: PCN-000353-EXT

Rev: 2

Issue Date: August 21, 2015

Type of Change: Part number change

Detailed Description of Change: The Optimus.2 Eco SKU's with ASIC Einstein 3.1 is EOL and has been replaced with new SKU's with ASIC Einstein 3.2. The major differences between E3.1 & E3.2 are the following:

1. A Minor "metal change" being introduced to the Marvell ASIC to bring the Revision to 3.2
2. The re-spin is focused to address existing ASIC items in which there are complex FW algorithm workarounds in place which will now be implemented/corrected in Hardware
3. Einstein 3.2 eliminates several bugs found in Einstein 3.1
 - a. Multi-initiator table lookup collisions
 - b. OPEN Reject dead-lock
 - c. AES context save when commands interleaved with partial data
 - d. HLBA field duplication in DRAM transfer under specific condition
 - e. T10 DIF errors erroneously reported by hardware
 - f. HW assist block operations limited to 1 block at a time
 - g. Rate Matching support
4. Einstein 3.2 eliminates complex workarounds in the Einstein 3.1 port layer code significantly decreasing code complexity and image size bloat
 - a. Improved performance
 - b. Robustness in multi-initiator, multi-port configurations
 - c. Operation following design intent, fewer interruptions to normal flow

In addition to the above ASIC change and in the interest of continuous improvements, SanDisk will implement minor component changes with the new SKU's to resolve a unique user case in which the following issues were discovered:

- Slow-insertion and short duration power loss
- Power glitch causing a format corrupt

The following component changes will be implemented:

1. BOM change to increase the timing of the soft-start delay by changing two capacitor values.
2. BOM modification to increase current capability of 12V side of the dual-buck converter.
3. BOM change to use a buffer IC with a weaker output.

These changes are to add margin to rare occurrences that may arise. All new product (shipped

after July 31 2015), will include the minimal component changes that address these issues. The BOM changes do not significantly affect functional operation of the SSDs, and should not require full requalification by customers. SanDisk qualification reports will be made available regarding these changes by September 4, 2015.

Reason for change: The Optimus.2 Eco SKU's with ASIC Einstein 3.1 is EOL and has been replaced with new SKU's with ASIC Einstein 3.2.

Products affected:

Part Number	Description	New Part Number
SDLKOD6R-400G-5CA1	Optimus.2 Eco 19nm SAS 400GB (3DWPD)	SDLKODDR-400G-5CA1
SDLKOC6R-800G-5CA1	Optimus.2 Eco 19nm SAS 800GB (3DWPD)	SDLKOCDR-800G-5CA1
SDLLOC6R-016T-5CA1	Optimus.2 Eco 19nm SAS 1.6TB (3DWPD)	SDLLOCDR-016T-5CA1
SDLLOC6R-020T-5CA1	Optimus.2 Eco 19nm SAS 2TB (1DWPD)	SDLLOCDR-020T-5CA1
	Optimus.2 Eco 19nm SAS 480GB (1DWPD)	SDLKODDR-480G-5CA1
	Optimus.2 Eco 19nm SAS 920GB (1DWPD)	SDLKOCDR-920G-5CA1

Forecasted Key Milestones: N/A

Milestone	Date
Qualification Samples Availability	July 15, 2015
SanDisk Qualification Report Availability	September 4, 2015
First Availability of Post-Conversion Product (*)	August 1, 2015
Pre-Conversion Product Demand to Local Sales Representative due	August 1, 2015
Last Pre-Conversion Product Order	August 14, 2015
Last Pre-Conversion Product Shipment	August 31, 2015

() The date of "First Availability of Post-Conversion Product" is determined by the projected depletion of inventory at the time of the PCN publication. The depletion of inventory may be impacted by fluctuating supply and demand; therefore, although customers should be prepared to receive the Post-Converted Products on this date, we will continue to ship the pre-converted products until the inventory has been depleted.*

Impact of Change and Recommended Action: N/A

Recommended Inventory Disposition: N/A

Change Type: N/A

Change	Date	Definition
Running Change Cut-in Date	August 1, 2015	With running change; change will be implemented by this date. However, being running change customer may continue to get mixed material until inventory depletion.
Hard Change Cut-in Date	August 15, 2015	With hard change; change will be implemented by this date and only material with this change will be shipped after this date. Old inventory will not be shipped to customer.

Reference Documents / Attachments: N/A

Should you have any issues with the timeline or content of this change, please contact the Representative listed below **within 30 days**. No response will be deemed as customer's acceptance of the change and the change will be implemented pursuant to the key milestones set forth in this PCN.

Contacts:	Name	Email
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